

THE DEVELOPMENT OF A SCALE FOR TALENT RETENTION

By

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DECLARATION

I declare that the Doctoral thesis, titled “The development of a scale for talent retention”, which I hereby submit for the degree PhD in Organisational Behaviour at the University of Pretoria, is my own work and has not been submitted by me for a degree at another university.

Marguerite Theron

May 2015

ETHICS STATEMENT

The author declares that she has observed the ethical standards required in terms of the University of Pretoria's Code of ethics and the Policy guidelines for responsible research.

Marguerite Theron

May 2015

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ABSTRACT

THE DEVELOPMENT OF A SCALE FOR TALENT RETENTION

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Introduction

Talent retention remains a key goal of successful organisations even though there is a lack of academic clarity on the most appropriate path to follow in order to retain talent or minimise the loss of valuable employees.

Research purpose

From a methodological point of view, the purpose of this study was to produce a valid and reliable measure that could contribute to academic research in talent retention in South Africa.

Motivation for the study

Within the South African context, talent retention faces the additional challenges of scarce skills, resource constraints and labour legislation. Education, together with training and innovation, is viewed as central to solving the national challenges of poverty and inequality (National Planning Commission, 2012:261). Concern about the retention of high quality and scarce skill employees in general education and higher education in South Africa has

been raised as being of critical importance in addressing the social and economic challenges that the country faces (National Planning Commission, 2012; Spaull, 2013).

Research design, approach and method

The research could be classified as a methodological research study. The scale development process of DeVellis (1991) and Hinkin (1995) provided the framework for the research design. A mixed method research strategy was followed involving the collection of qualitative data and quantitative data. Semi-structured interviews with key respondents from six organisations were conducted to help determine the parameters of turnover and retention data that were included in the measurement scale. The qualitative data generated from these interviews was analysed using thematic analysis. The developmental study was conducted in two distinct samples of employees, n=153 in Higher Education Institutions and n=1148 in general education. The quantitative data produced during the developmental study was analysed using descriptive statistics, exploratory factor analysis, and when indicated, confirmatory factor analysis. By means of multiple group structural equation modelling it was possible to establish a comprehensive model for the Talent Retention Scale. Validity, reliability and invariance testing for the measurement scale were described.

Main findings

The qualitative data from the key respondent interviews enabled the development of scale items with contextual relevance to South African organisations. The developmental study in Higher Education Institutions and general education highlights concerns about job satisfaction in education and the risk that employees would leave as soon as possible or when alternative opportunities become available. The risk for the turnover of young, newly qualified educators in general education has been identified in this research. Being unhappy about financial compensation was identified as the most likely reason that employees in this study would consider leaving their institutions. A supportive relationship with a direct line manager is a potential employee retention factor identified in this study

and employees in the higher education and general education samples were generally satisfied with the employee-direct line manager relationship. The results showed that the Talent Retention Scale, with higher order dimensions *Compensation and Recognition*; *Manager Relationship* and *Institutional Practices* showed significant negative relationships with *Intention to Quit*. Therefore, for the entire sample, it can be assumed that the proposed Talent Retention Scale seems to be useful to predict *Intention to Quit*, and the model fits the data adequately. Validity and reliability in the HEI study were sufficient although the sample size was too small for a thorough psychometric analysis. Internal consistency reliability was established in both samples and Cronbach's alpha reliabilities ranged between 0.764 and 0.928 for the scale factors. In the general education sample support for content validity and construct validity were obtained with the overall measurement scale and second-order CFA producing good results in terms of overall model fit. However, in terms of measurement invariance the Talent Retention Scale had adequate invariance over gender groups but invariance was not clearly established over employment equity groups.

Limitations/future research

The results of the HEI sample can only be generalised to academics, and not to employees in other organisations. The results of the general education sample were taken from a single district in the public school system in the Gauteng Department of Education and cannot be considered to be representative of all the provinces in South Africa. Validity and reliability of the scale needs to be assessed in other organisational contexts. As a newly developed scale there is still room for improvement in the items and factor structure. Future research with regards to talent retention constructs between Black, Coloured and Indian employees in one group and White employees in another group could expect differences between the two groups when using the Talent Retention Scale.

Conclusion

The primary research objective of the study was met, namely to develop a scale instrument for measuring talent retention in organisations in South Africa. The Talent Retention Scale has contributed to the body of knowledge in organisational behaviour and talent retention with specific reference to Higher Education Institutions and general education. Education in South Africa has to manage turnover and retention of academics and quality educators as a strategic imperative, and early diagnosis of intention to quit and the factors that would encourage employees to leave or stay can provide valuable management information. The Talent Retention Scale, if administered to employees in education concurrently with the Intention to Quit scale (Cohen, 1993), can help to determine whether talented employees are at risk of leaving.

Keywords: (5) talent retention scale education turnover

TABLE OF CONTENTS

DECLARATION	I
ACKNOWLEDGEMENTS	III
ABSTRACT	IV
TABLE OF CONTENTS	VIII
LIST OF TABLES	XVIII
LIST OF FIGURES	XXVI
LIST OF ABBREVIATIONS	XXVIII
CHAPTER 1: BACKGROUND TO THE STUDY	1
1.1 INTRODUCTION	1
1.2 PROBLEM STATEMENT	2
1.3 PURPOSE STATEMENT	3
1.4 RESEARCH OBJECTIVES	3
1.5 IMPORTANCE OF THE STUDY	4
1.6 RESEARCH METHODOLOGY	5
1.6.1 Research approach.....	5
1.6.2 Research design	5
1.6.3 Sampling	8
1.6.4 Data analysis.....	8
1.7 FINDINGS AND RECOMMENDATIONS	9
1.8 LAYOUT OF THE THESIS	10
1.9 CLARIFICATION OF CONCEPTS	10
1.10 SUMMARY	14

CHAPTER 2: RESEARCH DESIGN AND METHODS	16
2.1 INTRODUCTION	16
2.2 DESCRIPTION OF ENQUIRY STRATEGY AND BROAD RESEARCH DESIGN	16
2.2.1 Scale development process	16
2.2.2 Empirical research study	20
2.2.3 Research time frame	20
2.2.4 Research study intended as basic research.....	21
2.2.5 Mixed method research study	22
2.2.6 Inductive and deductive modes of reasoning	25
2.3 PARTICIPANTS	26
2.3.1 Key participants (Step 1 of scale development process).....	26
2.3.2 Developmental study participants (Steps 6–8 of scale development process).....	27
2.4 DATA COLLECTION	28
2.4.1 Primary data collection	28
2.4.2 Secondary data collection	29
2.5 DATA ANALYSIS	29
2.5.1 Qualitative data analysis	31
2.5.2 Descriptive statistics	31
2.5.3 Validation analysis.....	33
2.6 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE RESEARCH DESIGN	44
2.6.1 Semi-structured interviews (scale development process Step 1b).....	44
2.6.2 Scale development process (Steps 2–8).....	46

2.7 RESEARCH ETHICS

48

CHAPTER 3: LITERATURE REVIEW	51
3.1 INTRODUCTION	51
3.2 STEP 1A OF SCALE DEVELOPMENT PROCESS: LITERATURE REVIEW	51
3.2.1 The link between turnover and retention research	52
3.2.2 Clarification of turnover constructs	62
3.2.3 Overview of theory and research into employee turnover and retention	65
3.2.4 Costs and consequences of voluntary turnover	71
3.2.5 Measurement of actual turnover or intention to quit	75
3.2.6 Ideal measures in turnover and retention research	77
3.2.7 Contextual influences on turnover and retention	81
 CHAPTER 4: QUALITATIVE DATA COLLECTION, ANALYSIS AND FINDINGS	 89
4.1 INTRODUCTION	89
4.2 STEP 1B OF the SCALE DEVELOPMENT PROCESS	90
4.3 SAMPLING PROCESS	90
4.4 DATA COLLECTION PROCESS	91
4.4.1 Unexpected finding during data collection process	92
4.5 BIOGRAPHICAL AND DEMOGRAPHIC INFORMATION FOR KEY PARTICIPANTS	93
4.6 DATA ANALYSIS OF INTERVIEWS WITH KEY PARTICIPANTS	97
4.6.1 Talent identification	98
4.6.2 Current retention management strategy	103
4.6.3 Organisational data	112
4.6.4 Resignation process	118
4.6.5 Exit management research	120

4.6.6	Participants' choice of questions	123
4.6.7	Additional comments	124
4.7	SECONDARY DATA ANALYSIS – ORGANISATIONAL DATA	125
4.7.1	Additional secondary data used for data validation for key participants.....	126
4.8	SCALE DEVELOPMENT PROCESS-STEP 2: ITEM GENERATION	129
4.8.1	Item generation based on qualitative data analysis.....	129
4.8.2	Item generation based on theoretical relationships between constructs.....	132
4.8.3	Item generation based on review of organisational data	135
4.9	SCALE DEVELOPMENT PROCESS – STEP 3: DETERMINE SCALE AND MEASUREMENT FORMAT	137
4.9.1	Likert statements (6-point).....	137
4.9.2	Likert statements (4-point).....	138
4.9.3	Open-ended questions	138
4.9.4	Agreement with statements – checklist method	139
4.9.5	Ranking method – selection of top 5 reasons	140
4.10	SCALE DEVELOPMENT PROCESS - STEP 4: CONDUCT ITEM ANALYSIS	140
4.11	SCALE DEVELOPMENT PROCESS - STEP 5: SELECT VALIDATION ITEMS	143
CHAPTER 5:	DEVELOPMENTAL STUDY IN HIGHER EDUCATION I INSTITUTIONS	145
5.1	INTRODUCTION	145
5.2	DATA COLLECTION APPROACH IN HEI STUDY	146

5.3	DEMOGRAPHIC RESULTS OF HEI STUDY	147
5.4	ITEM EVALUATIONS AND VALIDATION ANALYSIS	153
5.4.1	Statistics for Compensation and Recognition.....	154
5.4.2	Statistics for Management Support	159
5.4.3	Statistics for Institutional Practices	164
5.4.4	Statistics for the Intention to Quit scale	172
5.4.5	Statistics for Job Search and Potential Reasons for Leaving.....	176
5.5	DISCUSSION OF RESULTS OF HEI STUDY	178
5.6	SUMMARY	183
CHAPTER 6: DEVELOPMENTAL STUDY IN GENERAL EDUCATION		184
6.1	INTRODUCTION	184
6.2	DATA COLLECTION APPROACH IN GDE STUDY	186
6.2.1	Sample size and response rate	187
6.2.2	Ethical considerations	188
6.3	DEMOGRAPHIC RESULTS OF GDE STUDY	188
6.3.1	Data analysis approach.....	189
6.3.2	Descriptive results of demographic variables.....	190
6.3.3	Cross-tabulations of contextual variables.....	197
6.4	ANALYSES FOR JOB SEARCH AND MOST LIKELY REASONS TO LEAVE	203
6.4.1	Job search.....	203
6.4.2	Most likely reasons to leave	208
6.5	QUALITATIVE FINDINGS FROM OPEN-ENDED QUESTIONS	213
6.5.1	Introduction.....	213

6.5.2	Open-ended questions	213
6.5.3	Compensation and Recognition	213
6.5.4	Management support	216
6.5.5	Satisfaction with Institutional Practices	219
6.5.6	Motivation to stay in current institution	221
6.5.7	Retention of employees.....	224
6.5.8	Summary of qualitative findings.....	228
6.6	SUMMARY	229
CHAPTER 7: TALENT RETENTION SCALE VALIDATION ANALYSIS – GDE SAMPLE		230
7.1	INTRODUCTION	230
7.2	PSYCHOMETRIC ANALYSIS OF COMPENSATION AND RECOGNITION SCALE	234
7.2.1	Descriptive statistics for Compensation and Recognition items	235
7.2.2	Validation analysis for Compensation and Recognition scale	236
7.2.3	Reliability statistics for Compensation and Recognition items	241
7.2.4	Invariance testing for Compensation and Recognition items	242
7.2.5	Model-implied means and variances for Compensation and Recognition.....	250
7.3	PSYCHOMETRIC ANALYSIS OF MANAGEMENT SUPPORT SCALE	250
7.3.1	Descriptive statistics for Management Support items.....	251
7.3.2	Validation analysis for Management Support scale.....	252
7.3.3	Reliability statistics for Management Support items	258
7.3.4	Invariance testing for Management Support items	258
7.3.5	Model-implied means and variances for Management Support	264

7.4	PSYCHOMETRIC ANALYSIS OF SATISFACTION WITH INSTITUTIONAL PRACTICES SCALE	265
7.4.1	Descriptive statistics for items measuring Institutional Practices	265
7.4.2	Validation analysis for Institutional Practices scale	268
7.4.3	Reliability statistics for Institutional Practices items.....	273
7.4.4	Invariance testing for Institutional Practices items.....	273
7.4.5	Model-implied means and variances for Institutional Practices.....	279
7.5	PSYCHOMETRIC ANALYSIS OF INTENTION TO QUIT SCALE	280
7.5.1	Descriptive statistics for Intention to Quit scale.....	281
7.5.2	Validation analysis for Intention to Quit scale.....	282
7.5.3	Reliability statistics for the Intention to Quit items	283
7.5.4	Invariance testing for the Intention to Quit items	283
7.5.5	Model-implied means and variances for Intention to Quit	288
7.6	SUMMARY	288
CHAPTER 8:	A COMPREHENSIVE HIGHER-ORDER MODEL FOR TALENT RETENTION	290
8.1	INTRODUCTION	290
8.2	A SECOND-ORDER CONFIRMATORY FACTOR ANALYSIS MODEL OF TALENT RETENTION	290
8.2.1	2CFA model	291
8.2.2	Measurement invariance of the 2CFA Talent Retention model across gender groups	293
8.2.3	Measurement invariance of the 2CFA Talent retention model across PDI/ non-PDI groups	302
8.3	NOMOLOGICAL VALIDITY OF THE 2CFA TALENT RETENTION MODEL	310

8.4	AN EXAMINATION OF THE MODERATING ROLE OF GENDER ON THE RELATIONSHIP BETWEEN THE TALENT RETENTION MODEL AND ITQ	312
8.5	AN EXAMINATION OF THE MODERATING ROLE OF EMPLOYMENT EQUITY GROUPS ON THE RELATIONSHIP BETWEEN THE TALENT RETENTION MODEL AND ITQ	321
8.6	SUMMARY OF OVERALL MEASUREMENT SCALE MODEL	331
CHAPTER 9: DISCUSSION OF RESULTS OF GDE STUDY		333
9.1	DEMOGRAPHIC AND CONTEXTUAL VARIABLES	333
9.2	COMPENSATION AND RECOGNITION	335
9.3	RELATIONSHIP WITH MANAGER/SUPERVISOR/DIRECT LINE MANAGER	338
9.4	SATISFACTION WITH INSTITUTIONAL PRACTICES	340
9.5	INTENTION TO QUIT	343
9.6	JOB SEARCH AND MOST LIKELY REASONS TO LEAVE	345
9.7	COMPREHENSIVE HIGHER ORDER MODEL FOR TALENT RETENTION	347
9.8	SUMMARY	348
CHAPTER 10: CONCLUSIONS AND RECOMMENDATIONS		349
10.1	SCALE DEVELOPMENT PROCESS – STEPS 1 TO 5	349
10.2	SCALE DEVELOPMENT PROCESS - STEPS 6 TO 8	349
10.2.1	Data collection approach.....	350
10.2.2	Descriptive results.....	351
10.2.3	Validation analysis.....	352
10.2.4	Analysis of job search and most likely reasons to leave	359

10.2.5	Qualitative findings from open-ended questions	361
10.2.6	Validity summary	362
10.3	CONCLUSIONS REGARDING SECONDARY RESEARCH OBJECTIVES	364
10.4	LIMITATIONS OF THE STUDY	366
10.4.1	Limitations of the study necessitating scale improvements.....	369
10.5	RECOMMENDATIONS FOR FURTHER RESEARCH	372
10.6	CONTRIBUTIONS OF THE PRESENT STUDY	374
10.7	CONCLUSIONS	377
	REFERENCES	380
	ADDENDUM A: DATA COLLECTION INSTRUMENT: SEMI-STRUCTURED INTERVIEWS	405
	ADDENDUM B: INFORMED CONSENT SURVEY QUESTIONNAIRE	407
	ADDENDUM C: INFORMED CONSENT GAUTENG DEPARTMENT OF EDUCATION	409
	ADDENDUM D: CONSENT AND SURVEY USED FOR HEI STUDY	411
	ADDENDUM E: CONSENT AND SURVEY USED FOR DEVELOPMENTAL STUDY	422

LIST OF TABLES

Table 2-1: Scale development process.....	18
Table 2-2: Item construction errors.....	48
Table 3-1: A multilevel, multi-value approach to talent management.....	58
Table 3-2: Unfolding Model of Turnover related to retention strategies.....	67
Table 3-3: Causes of voluntary turnover.....	69
Table 3-4: Quantifiable costs of voluntary turnover.....	72
Table 4-1: Biographical information of key participants.....	94
Table 4-2: Organisational reference code.....	95
Table 4-3: Thematic analysis summary for talent identification.....	98
Table 4-4: Thematic analysis summary for types of retention management strategies.....	103
Table 4-5: Types of compensation, recognition and rewards identified.....	106
Table 4-6: Effective implementation of retention strategies.....	109
Table 4-7: Organisational data required to measure and manage turnover.....	113
Table 4-8: Item generation based on qualitative analysis.....	129
Table 4-9: Items generated from theoretical relationships among constructs.....	134
Table 4-10: Most likely reasons to leave - item generation.....	136
Table 4-11: Items measuring the same constructs.....	144
Table 5-1: List of institutions in HEI study.....	147
Table 5-2: Home language selections of respondents in HEI study.....	151
Table 5-3: Highest educational qualification of respondents in HEI study.....	152
Table 5-4: Number of years' experience per age category.....	152
Table 5-5: Employment type of respondents in HEI study.....	153
Table 5-6: Descriptive statistics Compensation and Recognition items.....	155

Table 5-7: Communalities for Compensation and Recognition items	156
Table 5-8: Total variance explained for Compensation and Recognition items	157
Table 5-9: Factor analysis - component matrix for Compensation and Recognition	158
Table 5-10: Item total statistics – reliability for Compensation and Recognition items	158
Table 5-11: Descriptive statistics Management Support items	160
Table 5-12: Communalities for Management Support items	162
Table 5-13: Eigenvalues and total variance explained for Management Support items	162
Table 5-14: Results for factor analysis – component matrix Management Support	163
Table 5-15: Reliability – item total statistics Management Support	163
Table 5-16: Descriptive statistics of Institutional Practices	165
Table 5-17: Results for principal component analysis for communalities	167
Table 5-18: Total variance explained for Institutional Practices	168
Table 5-19: Pattern matrix for Institutional Practices scale	169
Table 5-20: Factor correlation matrix	170
Table 5-21: Reliability statistics for Institutional Practices	170
Table 5-22: Item total statistics for Institutional Practices	171
Table 5-23: Descriptive statistics of Intention to Quit scale	173
Table 5-24: Total variance explained for Intention to Quit items	174
Table 5-25: Component matrix – Intention to Quit items	175
Table 5-26: Item total statistics – Intention to Quit scale items	175
Table 5-27: Results for job search items	176
Table 5-28: Potential reasons for leaving the Institution	177
Table 6-1: Area of academic specialisation of respondent	191

Table 6-2: Home languages of respondents	195
Table 6-3: Highest level of education/qualification	195
Table 6-4: Number of years working at current school	196
Table 6-5: Years employed in current job	197
Table 6-6: Cross tabulations for contextual variables and PDI/non-PDI groups	198
Table 6-7: A comparison of characteristics of the sample across PDI/ non-PDI groups	199
Table 6-8: Descriptive results – contextual variables by gender	200
Table 6-9: A comparison of characteristics of the sample across gender	202
Table 6-10: Have you ever looked for another job?	204
Table 6-11: Job search – percentages selected Yes/No cross-tabulations	205
Table 6-12: Statistical significances of job search questions cross-tabulated with contextual variables	206
Table 6-13: Most likely reasons to leave provided by the GDE sample	208
Table 6-14: Top 5 most likely reasons to leave – percentage selected Yes cross- tabulations	209
Table 6-15: Statistical significance of most likely reasons to leave options cross- tabulated with contextual variables	211
Table 7-1: Summary of the evaluation criteria for different types of psychometric analyses	231
Table 7-2: Descriptive statistics for Compensation and Recognition items	235
Table 7-3: Total variance explained for Compensation and Recognition – Split Sample 1	238
Table 7-4: Pattern matrix for Compensation and Recognition	238
Table 7-5: Factor correlation matrix for Compensation and Recognition – Split Sample 1	239

Table 7-6: Measures of fit for Compensation and Recognition – Split Sample 2	240
Table 7-7: ML estimated regression coefficients for Compensation and Recognition – Split Sample 2	241
Table 7-8: Estimated correlations for Compensation and Recognition - Split Sample 2.....	241
Table 7-9: Cronbach’s coefficient alpha for Compensation and Recognition.....	242
Table 7-10: Invariance testing across Split Sample1 and Split Sample 2	243
Table 7-11: Nested model comparisons for Split Sample1 and Split Sample 2 for Compensation and Recognition	244
Table 7-12: Invariance testing across gender groups for Compensation and Recognition	245
Table 7-13: Nested model comparisons across gender groups for Compensation and Recognition	247
Table 7-14: Invariance testing across PDI/non-PDI groups for Compensation and Recognition	248
Table 7-15: Nested model comparisons across PDI/non-PDI Groups for Compensation and Recognition	249
Table 7-16: Model-implied means and variances for gender and employment equity groups	250
Table 7-17: Descriptive statistics for Management Support items	251
Table 7-18: Total variance explained for Management Support for Split Sample 1	253
Table 7-19: Pattern matrix for Management Support.....	254
Table 7-20: Factor correlation matrix for Management Support for Split Sample1.....	255
Table 7-21: Measures of fit for Split Sample 2 for Management Support	257
Table 7-22: ML estimated regression coefficients for Management Support Split Sample 2.....	257

Table 7-23: Estimated correlations for Management Support - Split Sample 2.....	258
Table 7-24: Cronbach's coefficient alpha for Management Support	258
Table 7-25: Invariance testing for Management Support across Split Samples.....	259
Table 7-26: Nested model comparisons for Split Sample 1 and Split Sample 2	260
Table 7-27: Invariance testing for Management Support items across gender groups.....	261
Table 7-28: Nested model comparisons across gender groups for Management Support	262
Table 7-29: Invariance testing across PDI/non-PDI groups for Management Support	263
Table 7-30 : Nested model comparison across PDI and non-PDI groups for Management Support	264
Table 7-31: Model-implied means and variances for Management Support.....	265
Table 7-32: Descriptive statistics for Institutional Practices items.....	266
Table 7-33: Total variance explained for Institutional Practices– Split Sample 1.....	268
Table 7-34: Pattern matrix for Institutional Practices	269
Table 7-35: Factor correlation matrix for Institutional Practices – Split Sample 1 ...	270
Table 7-36: Measures of fit for Institutional Practices for Split Sample 2	272
Table 7-37: ML estimated regression coefficients for Institutional Practices– Split Sample 2.....	272
Table 7-38: Correlations for Institutional Practices - Split Sample 2	273
Table 7-39: Cronbach's coefficient alpha for Institutional Practices.....	273
Table 7-40: Invariance testing for Institutional Practices across Split Sample 1 and Split Sample 2.....	274
Table 7-41: Nested model comparisons for Split Sample 1 and Split Sample 2 for Institutional Practices.....	275

Table 7-42: Invariance testing across gender groups for Institutional Practices	276
Table 7-43: Nested model comparisons across gender groups for Institutional Practices	277
Table 7-44: Invariance testing across PDI/non-PDI groups for Institutional Practices	278
Table 7-45: Nested model comparisons for PDI/non-PDI groups for Institutional Practices	279
Table 7-46: Model-implied means and variances for Institutional Practices	280
Table 7-47: Descriptive statistics Intention to Quit items	281
Table 7-48: ML estimated regression coefficients Intention to Quit	283
Table 7-49: Cronbach's coefficient alpha (if item is deleted) for the Intention to Quit items.....	283
Table 7-50: Invariance testing across gender groups for Intention to Quit.....	284
Table 7-51: Nested model comparisons across gender groups for Intention to Quit	285
Table 7-52: Invariance testing over PDI/non-PDI groups for Intention to Quit	286
Table 7-53: Nested model comparisons across PDI/non-PDI groups for Intention to Quit	287
Table 7-54: Model-implied means and variances for Intention to Quit	288
Table 8-1: Fit measures of the comprehensive 2 CFA model when fitted on the entire GDE sample.....	292
Table 8-2: Model fitting results of the measurement invariance analyses across gender for the 2CFA Talent Retention model	294
Table 8-3: Nested model comparisons of the 2CFA Talent Retention model across gender groups	295
Table 8-4: ML estimated regression weights and intercepts of the 2CFA multiple-group scalar invariant model MM2 by gender	297

Table 8-5: Model-implied means for 2CFA based on the scalar invariant 2CFA model MM2 of Talent Retention.....	299
Table 8-6: Maximum likelihood estimated covariances and correlations of the scalar invariant 2CFA model MM2 of Talent Retention	300
Table 8-7: Variances and squared multiple correlations across gender	300
Table 8-8: 2CFA measurement invariance testing for the 2CFA model of Talent Retention across PDI/non-PDI groups	302
Table 8-9: Nested model comparisons for invariance testing across PDI/non-PDI groups for the 2CFA Talent Retention model.....	303
Table 8-10: ML Regression Weights and Intercepts by PDI/non-PDI for the 2CFA scalar invariant model MM2	305
Table 8-11: Model-implied means for the scalar invariant model MM2 across PDI and non-PDI groups.....	307
Table 8-12: Maximum likelihood estimated covariances and correlations of the 2CFA Talent Retention model over PDI/non-PDI groups.....	308
Table 8-13: Maximum likelihood estimated error variances and squared multiple correlations by PDI /non-PDI groups for the scalar invariant 2CFA Talent Retention model MM2.....	308
Table 8-14: Overall SEM Model Fit for the model relating the 2CFA model to ITQ.....	311
Table 8-15: Model fit summary across gender.....	314
Table 8-16: Nested model comparisons across gender.....	315
Table 8-17: ML estimated regression weights and intercepts across gender groups for MIS2	317
Table 8-18: Model-implied means across gender (as estimated in Model MIS2)....	319
Table 8-19: Estimated covariances and correlations across gender based on model MIS2.....	319

Table 8-20: Estimated error variances and squared multiple correlations by gender for model MIS2	320
Table 8-21: Model fit summary of the moderation analysis across PDI/non-PDI groups	323
Table 8-22: Nested model comparisons across PDI/non-PDI groups	324
Table 8-23: ML estimated regression weights and intercepts across PDI and non-PDI groups for model MIS1	326
Table 8-24: Model-implied means and variances across PDI/non-PDI	328
Table 8-25: Estimated covariances and correlations across PDI/non-PDI groups ..	328
Table 8-26 Variances and squared multiple correlations across PDI/non-PDI groups	329
Table 10-1: Diversity and Respect item results expressed as percentages	352
Table 10-2: KMO Summary – HEI and GDE samples	353
Table 10-3: Factor analysis summary for developmental study	353
Table 10-4: Summary of Cronbach’s coefficient alpha scores in developmental study	355
Table 10-5: Summary of invariance testing results in GDE sample	357
Table 10-6: Analysis of job search in HEI and GDE samples	359
Table 10-7: Comparison HEI and GDE samples –most likely reasons to leave.....	360
Table 10-8: Summary of validity findings	362

LIST OF FIGURES

Figure 1-1:	Research design framework using the scale development process...7	7
Figure 2-1:	Mixed method research methodology used in this study.....	22
Figure 2-2:	Scale development process and qualitative/quantitative research phases	24
Figure 3-1:	Intention to quit and actual turnover as dependent variables	76
Figure 3-2:	Base rate for voluntary employee turnover	77
Figure 3-3:	Rate of new employees per year	78
Figure 3-4:	Turnover of new employees within the first year	79
Figure 3-5:	Net retention rate	80
Figure 4-1:	Talent identification at different stages of employee life cycle.....	102
Figure 4-2:	Effective implementation of retention strategies.....	111
Figure 4-3:	Types of data required in managing employee turnover	117
Figure 4-4:	Resignation process contribution to retention	120
Figure 5-1:	Age category of respondents in HEI study reflected as percentage	149
Figure 5-2:	Marital status of respondents in HEI study reflected as percentage	149
Figure 5-3:	Gender reflected as percentage of sample in HEI study	150
Figure 5-4:	Ethnicity of respondents in HEI study reflected as percentage	150
Figure 5-5:	Potential reasons for leaving	178
Figure 6-1:	Frequency distribution of number of respondents per type of school.....	190
Figure 6-2:	Percentage distribution of age category of respondents in GDE study.....	192
Figure 6-3:	Frequency distribution of marital status in GDE study.....	193

Figure 6-4:	Ethnicity of GDE sample respondents.....	193
Figure 6-5:	Proportion of males to females in PDI groups and non-PDI group.....	194
Figure 6-6:	Percentage distribution of age by PDI/non-PDI respondents	200
Figure 6-7:	Comparison of years employed at current school by gender	202
Figure 6-8:	Frequency of responses for <i>Manager Relationship</i> – open comments	217
Figure 7-1:	CFA 3 Factor Model for Compensation and Recognition	240
Figure 7-2:	CFA 2 Factor Model for Management Support	256
Figure 7-3:	CFA four-factor model for Institutional Practices	271
Figure 7-4:	CFA 1 Factor Model for Intention to Quit.....	282
Figure 8-1:	2CFA Measurement Model	292
Figure 8-2:	SEM model relating the 2CFA Talent Retention model with Intention to Quit (ITQ)	311
Figure 8-3:	Conceptual diagrams of the MIS models tested.....	313
Figure 8-4:	Conceptual diagram of the MIS models tested (PDI/non-PDI)	322

LIST OF ABBREVIATIONS

Abbreviation	Meaning
AIC	Akaike information criterion
AMOS	analysis of moment structures (SPSS AMOS)
BCC	Browne and Cudecke criterion
BIC	Bayesian information criterion
CFA	confirmatory factor analysis
2CFA	second-order confirmatory factor analysis
CFI	comparative fit index
CMIN	(correlation) minimum discrepancy or χ^2 or likelihood ratio test
Δ CMIN	the difference in chi-square values for nested models
C.R.	critical ratio
DBE	Department of Basic Education, South Africa
df	degrees of freedom
Δ df	the difference in the degrees of freedom
DoL	Department of Labour, South Africa
EE	employment equity
EFA	exploratory factor analysis
Exco	executive committee
F	factor
Freq.	frequency
GDE	Gauteng Department of Education, Gauteng, South Africa

List of Abbreviations

HEI	higher education institutions
HI 90	upper limit of a 90% confidence level
HR	human resources
HRM	human resource management
IFI	incremental fit index
ITQ	intention to quit
KMO	Kaiser-Meyer-Olkin measure of sampling adequacy
Kurt.	kurtosis
LSEN	learners with special education needs
LO 90	lower limit of a 90% confidence level
M	mean
MACS	means and covariance structure analysis
ME/I	measurement equivalence/invariance
MG	multiple-group
ML	maximum likelihood
non-PDI	non-previously disadvantaged individuals (Whites)
NPAR	number of parameters
OB	organisational behaviour
P	probability
PCFI	parsimony comparative fit index
PCLOSE	closeness of fit index
PDI	previously disadvantaged individuals (Black, Coloured, Indian)
PNFI	parsimony normed fit index
PRATIO	parsimony ratio

List of Abbreviations

POS	perceived organisational support
RMSEA	root mean square error of approximation
SANPAD	South Africa-Netherlands Research Programme on Alternatives in Development
SD	standard deviation
S.E.	Standard Error
SEM	structural equation modelling
SGB	school governing board(s)
Skew.	skewness
SMC	squared multiple correlations
TLI	Tucker Lewis index
TRS	Talent Retention Scale
TM	Talent Management
α	Cronbach's coefficient alpha of internal consistency reliability

CHAPTER 1: BACKGROUND TO THE STUDY

1.1 INTRODUCTION

It remains a reality that talented, knowledgeable and skilled employees voluntarily resign from their current employers. When these employees leave they can leave a gap which is costly to fill and challenging to manage (Robison, 2008). Organisational Behaviour scholars do not agree on the most appropriate path to follow in order to retain talent or minimise the loss of valuable employees. Lee, Gerhart, Weller and Trevor (2008) noted that a search for employee turnover delivers thousands of published research studies. There also seems to be no apparent academic consensus on which employee turnover model to use or whether these models or theories have any predictive validity as neither the economic school nor the psychological school of turnover research have not been able to explain or predict turnover adequately (Morrell, Loan-Clarke & Wilkinson, 2001).

Harman, Lee, Mitchell, Felps and Owens (2007) have identified that theoretical and research studies on turnover continue to attempt to answer the following questions:

- Why do people voluntarily leave a position and an organisation?
- Why do people stay?

The fact that there are no definitive academic answers available implies that turnover and retention research continues to be a worthwhile academic topic to pursue and retention of key, talented employees remains an essential, practical goal of effective organisations (Frank, Finnegan & Taylor, 2004).

Organisational-level data assists in determining the specific context of who is leaving, where they are going, what knowledge and skills they are taking with them and what it costs the organisation (Allen & Griffeth, 1999; Whitt, 2006). There is limited organisational data available on the reasons employees choose to stay (Kontoghiorghes & Frangou, 2009). In addition Whitt (2006) cautioned that employee

retention rates are not accurately measured or are assumed to be the inverse of employee turnover rates. Smither (2003:20) recommended “routine diagnostic checks” on top-performing employees to ensure that they are productive and happy to stay. Lee *et al.* (2008:651) called for researchers in the field of employee turnover and retention to obtain data on both “leavers and stayers” in order to prevent an incomplete, one-sided view of the phenomenon.

1.2 PROBLEM STATEMENT

Currently there exists a gap, as deduced from the existing literature review, in identifying a contextual framework for the retention of talented employees in considering both organisational-level data and individual information on why employees leave or why they stay. Talented employees are generally regarded as the key employees in an organisation who by virtue of their knowledge, skills, aptitudes and experience add commercial value to an organisation (Allen & Griffeth, 1999; Kontoghiorghes & Frangou, 2009). These employees are usually viewed as being in “short supply” and there is a high demand for them in the market (Cappelli, 2000:105).

It is unclear whether retrospective questioning of employees on voluntary turnover, as recommended by Morrell and Arnold (2007:1683), can add direct value to employee retention strategies for talented employees. In addition, it is unclear whether the routine, systematic questioning of employees at regular intervals, as recommended by Smither (2003:20) can determine whether talented employees are at risk of leaving. It is also unclear if, in the South African context, a scale can be developed using items that are normally used in retrospective questioning as well as items that determine the risk of turnover.

Concern about the retention of talented or high-quality and scarce-skill employees in general education and in higher education in South Africa has been raised as being of critical importance in addressing the social and economic challenges that South Africa as a country faces (National Planning Commission, 2012; Spaul, 2013).

1.3 PURPOSE STATEMENT

The purpose of this study is to develop a scale for measuring talent retention in organisations in South Africa. This includes determining whether the current talent management practices in organisations as well as the retrospective management of employee turnover can be used to determine the parameters of the talent retention domain and subsequently a talent retention scale.

In addition, the purpose of the study is to enhance the understanding of turnover and retention of academic employees in higher education institutions and educators/school leaders in general education in South Africa by conducting a developmental study in both these contexts.

1.4 RESEARCH OBJECTIVES

The primary research objectives of the study are to develop a scale instrument for measuring talent retention in organisations in South Africa and to enhance the understanding of turnover and retention of talented employees.

In addition, the study is guided by the following secondary research objectives:

- To describe how employee talent retention is defined, identified, measured and monitored in a sample of organisations represented by key participants.
- To explore and identify factors which may contribute to turnover and retention of academic employees in higher education.
- To explore and identify factors which may contribute to turnover and retention of educators and school leaders in basic or general education.
- To conduct an in-depth psychometric analysis of the scale.
- To propose changes to the scale for future consideration including practical considerations should the scale be utilised in alternative environments.

1.5 IMPORTANCE OF THE STUDY

The academic value of the study includes the development of a scale which aims to provide new insights into a traditional outcome variable in the field of organisational behaviour in South Africa. Employee turnover as an outcome variable in organisational behaviour research has an extensive history, with the majority of studies focusing on micro-organisational behaviour and why individuals decide to leave (O'Reilly, 1991:431; Staw, 1984:657). Studies on individual behaviour in organisations have additionally explored why individuals choose to remain in employment considering individual, group and contextual interactions (Rousseau, 1997).

Morrell and Arnold (2007:1695) proposed that in order to provide new turnover and retention insights, it is important to consider retrospective self-reports from employees who have already left the organisation in addition to assessments of employees who are currently employed. The present study aims to heed this methodological advice and use the retrospective self-reports to guide the development of the individual component of the retention scale that will be administered to individual employees currently employed. O'Reilly (1991:429) insisted that "cross-level" research should be conducted in the field of Organisational Behaviour where a topic is studied at the individual level, group level and the organisation as a whole. By considering organisational level data and individual level information in the development of the retention tool this study aims to provide a more comprehensive understanding of talent retention.

From a methodological point of view, the research strives to produce a valid and reliable scale that can contribute to academic research in talent retention in South Africa.

Conducting the research in the contexts of higher education and general education aims towards a theoretical contribution by increasing empirical knowledge on

turnover and retention factors that may encourage academics and educators to leave or stay in their institutions.

From a practical contribution point of view, the research aims to identify potential turnover risks and potential retention factors that management in educational institutions, districts and governmental departments could pay attention to in order to retain scarce-skilled, high-potential or high-quality employees.

1.6 RESEARCH METHODOLOGY

An empirical methodological study to develop a new instrument to assist in employee retention research is presented. For methodological research studies no specific meta-theoretical approach is required (Mouton, 2001:173). Buchanan and Bryman (2007:484) pointed out that organisational research has a “multiparadigmatic profile” and this research aims to study the phenomenon of talent retention utilising methods linked to both the positivist and interpretative paradigms.

1.6.1 Research approach

As this study sets out to develop a multi-item measurement scale for employee retention, a mixed method research strategy will be followed, in which data collection strategies are both qualitative and quantitative. The following definition of mixed methods research is presented:

“Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration” (Johnson, Onwuegbuzie & Turner, 2007:123).

1.6.2 Research design

The scale development process of DeVellis (1991) and Hinkin (1995) is generally regarded as a gold standard for the development of new multi-item measures (Tharenou, Donohue & Cooper, 2007:164) and this approach was used as the framework for the research design in this study. The 8 step scale development process is described in detail in Table 1-1 and in section 2.2.1. In summary, the scale development process includes the following steps:

Step 1: Establish the parameters of the construct. This was done in two ways, firstly establishing a theoretical basis to develop the items by reviewing the existing literature. Secondly, through qualitative inquiry where the first set of primary data was generated through semi-structured interviews with key participants in a sample of six industries in the South African context.

Step 2: Item generation and establishment of item pool based on theoretical relationships between constructs and the qualitative analysis of the semi-structured interviews.

Step 3: Determine the scale and measurement format.

Step 4: Conduct an item analysis to eliminate inadequate items.

Step 5: Select validation items that can be administered to developmental sample.

Step 6: Design and conduct developmental study. The developmental study includes two distinct studies in different samples. The first phase of the study utilises a set of primary data generated by administering the employee retention scale items and open-ended questions to a sample of academic employees in higher education institutions in South Africa. The second phase of the developmental study utilises a set of primary data generated by administering the employee retention scale items and open-ended questions to a sample of educators in basic education in the province of Gauteng, South Africa.

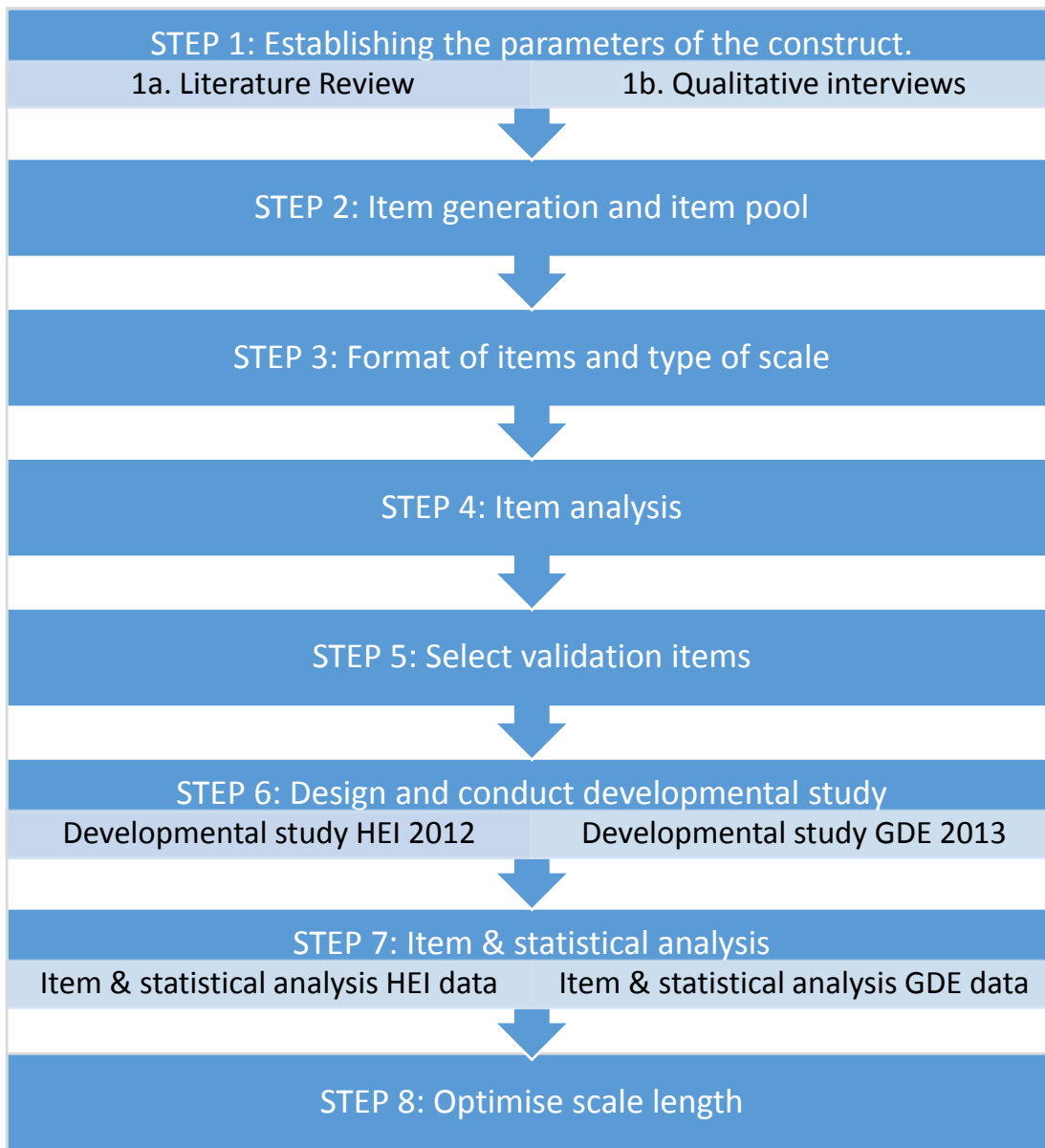
Step 7: Evaluate the items to identify and remove ambiguous items, and items that do not discriminate between the participants (Tharenou *et al.*, 2007:167). At this stage basic statistics can help identify inadequate items. Step 7 includes the evaluation of construct validity, convergent/divergent validity and reliability of the scale. Having a developmental study with two phases in different contexts enables multiple measures of reliability, exploratory and confirmatory factor analyses to be

conducted. The measurement scale in the present study includes open-ended questions which produce additional primary data.

Step 8: Optimise scale length. Consider effect of length of scale on reliability; and also factors such as respondent fatigue. This step includes scale revision based on data analysis.

A diagrammatic representation that guides the reader through the research design of this study is presented in Figure 1-1.

Figure 1-1: Research design framework using the scale development process



Source: Adapted from DeVellis (1991); Hinkin (1995); Tharenou *et al.* (2007).

1.6.3 Sampling

Different sampling strategies were required for the data collection in order to complete all the steps in the scale development methodology of this study.

- For the first set of primary data collection in this study, semi-structured interviews were conducted with key participants and a **purposive sampling approach** suitable for qualitative data collection was applicable (Barbour, 2001). Eleven key participants were purposively sampled from six different organisations in Gauteng, South Africa. These key participants met distinct criteria which were aligned with the research area. They were designated experts with specialised knowledge, experience and skills in talent retention and/or voluntary turnover and exit management research in their respective organisations.
- For the second set of primary data, the sampling strategy was a **purposive, non-probability sample** of 360 academic employees from 13 public higher education institutions (HEIs) in South Africa and the data was generated by administering the employee retention items developed during Steps 1 to 5 of the scale development process described in Figure 1-1, to this sample group.
- For the third set of primary data, the sampling strategy was a **purposive convenience sample** and the data is generated by administering the employee retention items developed during Steps 1 to 5 of the scale development process described in Figure 1-1, to a sample of 3 300 educators in a single district within the Gauteng Department of Education.

1.6.4 Data analysis

For the empirical study the researcher collected and analysed primary data and secondary data in an attempt to explore, describe and explain employee retention. Both qualitative and quantitative data was available for analysis. The type of analysis chosen should support the intention of the research (Pratt, 2009; Silverman, 2011).

Qualitative data analysis

Pratt (2009:856) discussed how the intention of qualitative research is to “understand the world from the perspective of those studied”. Good quality analysis ensures that

the researcher tells the story that the participants intended, provides a rich understanding of the construct, and considers that “multiple social realities exist” (Shah & Corley, 2006). Validity of the data can thus be adjudicated to the extent by which the data analysis impartially and accurately describes the data (Lacey & Luff, 2007) and allows for diversity of views and complexity of phenomenon (Brown, 2010). The qualitative data was analysed using qualitative methods of thematic analysis as described by Braun and Clarke (2006). In thematic analysis the frequency of occurrence of a view that supports a theme is less important than identifying both majority views and minority views as these all contribute to understanding the construct (Brown, 2010). Themes that emerge can refer to processes, meanings and descriptions (Labuschagne, 2003).

Quantitative data analyses

Descriptive statistics were provided with the intention of understanding the sample and providing the context for the statistical analysis. Basic statistics such as means, standard deviations and frequencies may help identify inadequate items.

Data analyses were carried out with the aid of the SPSS 20 software (2012) for the data analysed in 2012 and with SPSS 22 software (SPSS, 2014) for the data analysed in 2014. Descriptive statistics such as means, standard deviations, skewness, kurtosis, and cross-tabulations are reported due to the descriptive nature of this study. A thorough psychometric analysis of the scales using both exploratory and confirmatory factor analysis is provided in the general education sample. Nomological validity of the instrument was tested using structural equation modelling.

1.7 FINDINGS AND RECOMMENDATIONS

The envisaged findings of the research were to develop a new measurement scale for the retention of employees in the South African context, specifically both higher learning education institutions and basic education institutions. The findings of the research are further envisaged to enhance the understanding of retention of talented employees.

1.8 LAYOUT OF THE THESIS

The thesis layout does not follow the classic chapter outlines as this study is based on the scale development research process described in section 1.6.2. As part of best practice in scale development, the developmental study was required to be repeated in two distinct samples (Hinkin, 1998).

Chapter outlines are as follows:

Chapter 1: Background to the study: overview, rationale and objectives

Chapter 2: Research design and methods

Chapter 3: Literature review: Step 1a of scale development process

Chapter 4: Qualitative data collection, analysis and findings. Scale development process Step 1b to Step 5

Chapter 5: Developmental study conducted in Higher Education Institutions (HEI): Steps 6–8 of scale development process

Chapter 6: Developmental study conducted in general education (GDE): Step 6 of scale development process

Chapter 7: Item evaluations and validation analysis (using general education data): Step 7-8 of scale development process

Chapter 8: A comprehensive model for talent retention which includes an overall second-order measurement model using the general education data

Chapter 9: Discussion of the results of the GDE study

Chapter 10: Conclusions and recommendations

1.9 CLARIFICATION OF CONCEPTS

The key terms and constructs that are to be used in the study are defined in the following section. Additional terminology and descriptions of constructs are included in Chapter 3, the literature review component of the thesis.

There is no academic consensus on either the definition of talent or talent management (Lewis & Heckman, 2006; Joyce & Slocum, 2012) and talent is best defined in **context** and refers to the fit between the individual and context, the type of work, culture or industry in which they work (Collings & Mellahi, 2009). **Talent** can be defined considering a combination of individual characteristics that are required by different organisations such as behaviour, knowledge and skills (Tansley, 2011) and talent can include the strategic contributions of employees or their potential future contributions or alternatively refer to key employee roles or positions in the organisation such as scarce skill professionals (Collings & Mellahi, 2009; Joyce & Slocum, 2012).

Talent management is a broad concept that involves the implementation of integrated human resource strategies to attract, develop, retain and productively utilise employees “with the required skills and abilities to meet current and future business needs” (Kontoghiorghes & Frangou, 2009:29).

Employee retention is defined as the “effort by an employer to keep desirable workers in order to meet business objectives” (Frank et al., 2004:12). Retention can also be defined as “the stability of the workforce” (Smith, Daskalaki, Elger & Brown, 2004:389). **Talent retention** refers to a key aspect of talent management which focuses on the strategies and activities that a company carries out in order to hold onto skilled employees (Kontoghiorghes & Frangou, 2009:29). **Talented employees** are those employees considered essential to the ongoing success of the organisation and who help meet organisation objectives (Birt, Wallis & Winternitz, 2004).

Employee turnover can be regarded as the total number of employees who leave an organisation in a fixed period of time (Huselid, 1995:651). Employee turnover can also be referred to as the “total separation rate” of employees from an organisation and includes voluntary and involuntary turnover (Bontis & Fitz-enz, 2002:235).

Voluntary turnover is defined as the “voluntary cessation of membership of an organisation by an employee of the organisation” (Morrell *et al.*, 2001:220). Voluntary turnover occurs when employees resign and is expressed as the percentage of employees that choose to leave an organisation (Bontis & Fitz-enz, 2002:227). The employee controls the leaving process and the organisation has not planned for these workers to leave (Frank *et al.*, 2004:12). The present study will focus on voluntary turnover.

Involuntary turnover can be defined quite simply as “dismissals based on organisation ratings of poor performance” (Allen & Griffeth, 1999:528). In contrast, a comprehensive definition of involuntary turnover refers to all employment terminations initiated and controlled by the organisation in which the employee does not leave through choice: these include dismissals, retrenchments, deaths, disability, investigations in progress, contracts ended and employees who failed to complete training (Bontis & Fitz-enz, 2002:226; Taylor, Murphy & Price, 2006:647). For the purposes of this study the comprehensive definition of involuntary turnover as described above will be considered.

Functional turnover is defined as the turnover of poor-performing employees who are leaving by choice and when the skills of the departing employees are easily replaceable (Allen & Griffeth, 1999:526). In order for turnover to be seen as functional, unproductive employees need to leave and productive employees need to remain behind (Morrell *et al.*, 2001:222).

Dysfunctional turnover can be defined as the turnover of high performing employees who resign voluntarily, while poor-performing employees remain behind (Allen & Griffeth, 1999:528). Turnover can also be regarded as dysfunctional when employees with scarce skills and valuable experience leave (Netswera, Rankhumise & Mavundla, 2005:36).

Avoidable turnover is defined as voluntary turnover that the organisation may be able to prevent by implementing current or future interventions (Morrell *et al.*, 2001:220). An example of avoidable turnover would be an employee that is frustrated with a lack of training opportunities and resigns however, a timely intervention may have prevented the resignation.

Unavoidable turnover is described as voluntary turnover that the organisation does not have control over because organisational interventions would not have changed the employee's decision to quit (Morrell *et al.*, 2001:221). Examples include non-work related events such as spousal relocation.

Withdrawal behaviours are a theoretical construct that include any employee responses to dissatisfaction at work that may result in exit from the organisation, emotional detachment, neglect of duty or failure to participate fully in an activity (Farrell, 1983:597). Although withdrawal behaviours such as turnover, absenteeism and lateness are occasionally clustered and studied together, withdrawal behaviour has been disputed as a uniform construct due to research findings that lateness is related to absenteeism but not to turnover (Farrell, 1983:597). "Job avoidance" can be regarded as a sub-construct of withdrawal behaviour and involves tardiness (lateness), absenteeism, quality of work and effort of work (Hom & Kinicki, 2001:977).

Intention to quit is regarded as a "withdrawal cognition" or thought process involving the probability that the employee intends to resign from the organisation in the near future (Hom & Kinicki, 2001:976). Intention to quit is also referred to as "turnover intention" and is based on the employee's subjective self-report that they intend to leave their current job within a specified time frame (Zhao, Wayne, Glibkowski & Bravo, 2007:651). Intention to quit is also referred to as "intention to leave" and is used as a predictive measure of employee turnover (Taylor *et al.*, 2006:649).

Individual performance is defined as the “overall evaluation of how well an individual is meeting the organisation’s expectations in terms of job performance” (Allen & Griffeth, 1999:527). **Performance management** can be defined as “... a philosophy for managing the behaviour of people within a context that facilitates and supports the alignment of individual goals with organisational goals in order to achieve organisational and financial performance” (Whitford & Coetsee, 2006:70).

Productivity can be defined as the “weighted combination of a number of measures focusing on different aspects of performance” (Whitt, 2006:337). The specific measures of productivity may vary in different organisations.

1.10 SUMMARY

In this chapter, the researcher presented background information on the rationale for the development of a talent retention scale for organisations based in South Africa.

The literature shows that organisation behaviour scholars do not agree on the most appropriate path to follow in order to retain talent or minimise the loss of valuable employees and thus talent retention studies continue to have both academic and practical value.

The study also seeks to enhance the understanding of talent retention during the course of following the methodological process of scale development.

In Chapter 2, the scale development methodology is discussed as the research design determines the process of practical and theoretical data collection for this study. In Chapter 3, the literature review and theoretical foundations of employee retention and turnover research are presented (Step 1A in the scale development methodology). In Chapter 4, the data collection process, qualitative data analysis and findings from key participant interviews are included as part of the scale development process in this chapter. Qualitative data analysis is conducted on the

data collected and these findings are then used to generate the items. Next, the scale and measurement format is determined, an item analysis is conducted and validation items are selected (Steps 1B to 5 in the scale development process). The results of the developmental study conducted in higher education are presented in Chapter 5. The data collection, demographic and descriptive results of the developmental study in general education are initiated in Chapter 6. In Chapter 7, the item analysis and validation analysis of the results of the general education sample are presented. The nomological validity of the comprehensive Talent Retention model is investigated in Chapter 8. The results obtained from the study in general education are discussed in Chapter 9. Conclusions and recommendations are presented in Chapter 10.

CHAPTER 2: RESEARCH DESIGN AND METHODS

2.1 INTRODUCTION

This chapter sets out to describe the research strategy, design and methods followed in the study. It was proposed to conduct a methodological study to develop a new method of data collection for employee retention research. For methodological research studies no specific meta-theoretical approach is required (Mouton, 2001:173). This research aimed to study the phenomenon of talent retention utilising methods linked to both the positivist and interpretative paradigms utilising a multi-paradigm approach that occurs in organisational research (Buchanan & Bryman, 2007).

2.2 DESCRIPTION OF ENQUIRY STRATEGY AND BROAD RESEARCH DESIGN

As mentioned in Chapter 1, the primary research objective of this methodological study was to develop an employee retention scale. The research design is based on the scale development process which will subsequently be discussed in detail.

2.2.1 Scale development process

This research study proposed to develop a multi-item measurement scale for employee retention. A scale can be defined as an instrument consisting of two or more items designed to measure a construct of interest (Tharenou *et al.*, 2007). The methodological study attempted to identify a data collection instrument suitable for individual level data from the perspective of the employee. Organisational data was used to assist in the development of the scale items and to provide a contextual framework for the research but the resulting scale is intended for individual employee level application.

It was the aim of this research to develop a retention measure with multiple-items comprised of factual or contextual information (such as age, gender, occupational category) and self-report items relating to abstract or unobservable constructs such as emotions, behavioural intentions and cognitive thought processes (Jackson, 2008:62). The self-report items were measured using a variety of question types:

- A 4–point and 6-point Likert rating scale. A Likert rating scale utilises a statement rather than a question and asks the participants to choose a number that represents how strongly they feel about the statement and the direction of their response, for example whether they disagree or agree with the statement (Jackson, 2008:92–93).
- It is also intended to use direct questions that require a forced response (such as yes or no answers).
- Open-ended options are included to provide clarification for forced-response items and in addition to ensure that the content domain of turnover and employee retention was not limited by the scale items.
- Rating items are also used where the employee selects the top five reasons for leaving from a defined list of 18 constructs.

The scale development methodology used in this study is based on the approach of DeVellis (1991) and Hinkin (1995) and has been recommended as a standard for the development of new multi-item measures (Tharenou *et al.*, 2007). The scale development process and how it is applicable to this study is described in Table 2-1.

Table 2-1: Scale development process

Description of scale development step	Application in present study
<p>Step 1: Application of a theoretical basis to develop the items involves establishing the parameters of the construct of interest or latent variable. Construct needs to be defined and relationships with other variables need to be established (Tharenou <i>et al.</i>, 2007:165).</p>	<p>Step 1a: Identified the parameters of the turnover and retention theory included in the measurement scale and that informed the conceptual framework for the study. Forms part of the establishment of content validity.</p>
	<p>Step 1b: Semi-structured interviews with key participants to help determine the parameters of turnover and retention data that were included in the measurement scale. Data was collected and analysed qualitatively. This step was deemed necessary in order to consider the contextual factors relevant to the South African situation which may not have been adequately dealt with if only theoretical analysis was used to establish the content domain. Forms part of the establishment of content validity.</p>
<p>Step 2: Item generation: designing individual items that are questions or statements to measure the constructs. Items should reflect the scale's purpose (DeVellis, 1991:54). The number of items in the initial "item pool" can be 3 to 4 times as many as intended for the final scale (DeVellis, 1991:57).</p>	<p>Step 2: Item generation based on theoretical relationships between constructs and the qualitative analysis of the interviews. Statements were generated rather than questions. This steps forms part of the establishment of content validity.</p>
<p>Step 3: Determine the scale and measurement format: includes type of scale, format of items, number of response categories, odd or even numbers of responses and response format (DeVellis, 1991:61–74).</p>	<p>Step 3: Format of items using statements in a Likert response format (DeVellis, 1991:68) was developed. Additionally, checklist style questions, ranking order and open-ended questions were included.</p>
<p>Step 4: Conduct an item analysis to eliminate inadequate items: includes use of an expert panel. Evaluation by an expert sample can help determine content validity (DeVellis, 1991:43).</p>	<p>Step 4: Used an expert panel of academics for content validation of first draft of scale. Experts were provided with construct definitions and asked to rate items in terms of adequacy, relevance, conciseness and potentially confusing wording as recommended by DeVellis (1991:75–76).</p>
<p>Step 5: Select validation items that can be administered to developmental sample: may include measures that can provide clarity on extent of convergent validity or divergent validity (Tharenou <i>et al.</i>, 2007:165). May include social desirability scales or other response tendencies. May also need to include additional measures of the constructs to determine convergent validity or construct validity (DeVellis, 1991:77).</p>	<p>Step 5: Selection of validation items: This research did not include social desirability scales. This scale used repetition of items that measure the same construct in different sub-scales to determine if similar or different responses were provided.</p>

Description of scale development step	Application in present study
<p>Step 6: Design and Conduct developmental study: administer scale items and validation to a sample of participants. Number of persons in sample is recommended as a minimum of 150 (Hinkin, 1995) to 300 or more (Nunnally in DeVellis, 1991:78).</p>	<p>Step 6: Design and conduct developmental study by administering employee retention diagnostic items and validation items to sample of 150 to 300 employees within tertiary academic institutions in South Africa. Second developmental study required for validation conducted in general education – required 500 plus respondents.</p>
<p>Step 7: Evaluate the items: a basic items analysis will help identify and remove ambiguous items, and items that do not discriminate between the respondents (Tharenou <i>et al.</i>, 2007:167). At this stage basic statistics such as means, standard deviation and frequencies can help identify inadequate items.</p>	<p>Step 7: Evaluate the items. Followed advice of (DeVellis, 1991:82–85) and included item-scale correlations; item variance; item means and co-efficient alpha when appropriate.</p>
<p>Step 7a: Determine construct validity of the measure: can use exploratory factor analysis (Tharenou <i>et al.</i>, 2007:168) or principle components analysis and/or confirmatory factor analysis (Hinkin, 1995).</p>	<p>Step 7a: Determine construct validity of the measure. Proposed to initially conduct exploratory factor analysis and secondly, confirmatory factor analysis. For confirmatory analysis a larger sample is required.</p>
<p>Step 7b: Determine the convergent validity of the measure: determining whether there are alternative explanations for what the scale measures (Tharenou <i>et al.</i>, 2007:165). If items are indicative of a latent construct these items will converge or have a “high proportion of variance in common” (Hair <i>et al.</i>, 2010: 686).</p>	<p>Step 7b: Convergent validity with alternative scales was not assessed. Convergent validity was determined by considering the Standardised Estimates or factor loadings during CFA which should be at least 0.5 and ideally 0.7 or higher (Hair <i>et al.</i>, 2010:688).</p>
<p>Step 7c: Determine the divergent validity of the measure: determining whether the scale is related to measures it should not be related to (Tharenou <i>et al.</i>, 2007:165).</p>	<p>Step 7c: Determine the divergent validity of the measure. Determined whether method affects are influencing the scale findings. Required a criterion-related study and a larger sample than just the first developmental study.</p>
<p>Step 7d: Assess the reliability of the scale: possible to use internal consistency reliabilities; test-retest reliabilities and multiple measures of reliability (Tharenou <i>et al.</i>, 2007:168).</p>	<p>Step 7d: Assess the reliability of the scale. Determined internal consistency reliabilities. Test-retest reliabilities were not conducted due to confidentiality concerns thus the sample used remained anonymous and was unavailable for retest. The planned alternative was to administer the scale to another sample which enabled multiple measures of reliability to be compared.</p>
<p>Step 8: Optimise scale length: consider effect of length of scale on reliability; and also factors such as respondent fatigue.</p>	<p>Step 8: Optimise scale length. Due to the nature of the scale (a talent retention scale that can be used regularly) the scale needs to be short enough to avoid respondent fatigue.</p>

Source: Adapted from DeVellis (1991:51–90), Hinkin (1995) and Tharenou *et al.* (2007:165–169)

The primary research objective and secondary research objectives as described in section 1.4 were intended to be met by following the scale development process described in Table 2.1.

2.2.2 Empirical research study

The design classification was empirical research. In an empirical study the goal is to collect and analyse new data (primary data) and/or analyse existing data (secondary data) about research questions in the real world (Mouton, 2001:52–53). For the empirical study the researcher collected and analysed primary data and secondary data in an attempt to explore, describe and explain employee retention. Three sets of primary data was generated. The nature of this primary data is described in section 2.4.

Secondary data made available by organisations and institutions in the study was also considered in order to help determine the contextual framework for item generation and it included current organisation practices in talent retention, turnover rates and, where available, previous exit management studies conducted within the organisation.

2.2.3 Research time frame

Traditionally research time frames have been described as either cross-sectional (administered only as a single event) or longitudinal which involves repeat measures of the phenomenon (Cooper & Schindler, 2006:141). However, Steel (2002:347) describes “episodic measurement” as the repeated administration of a survey at timely intervals. It is acknowledged as a limitation of the current research that episodic measurement would be the ideal method to determine the diagnostic potential of a measurement scale as it would provide additional data from the same sample group using the same research design (Steel, 2002:347). One of the major advantages of episodic measurement for retention research is that it can measure actual employee turnover at a second and third points in time as opposed to a cross-sectional design which only measures intention to quit and associations with

variables without being able to determine the direction of causality (Morrell & Arnold, 2007:1686). However, episodic measurement was not “realistically accomplishable” in this study (Leedy & Ormrod, 2005:107)

This study used cross-sectional research which is regarded as a once-off “snapshot” of the population (Saunders, Lewis & Thornhill, 2007:148). In this research study the cross-sectional design was deemed the most practical and feasible design for several reasons. The cross-sectional design is less tedious for the respondents as they only have to complete the scale once. The organisations and institutions approached for the study were more willing to provide access for a cross-sectional design than an episodic design as the disruption to the business was viewed as less with a single measurement event. In addition, a further benefit of the cross-sectional design was that it increased the confidence of the respondents in the anonymity of the process as they could not be identified from the responses. This also implied that they could not be contacted for repeat questioning.

2.2.4 Research study intended as basic research

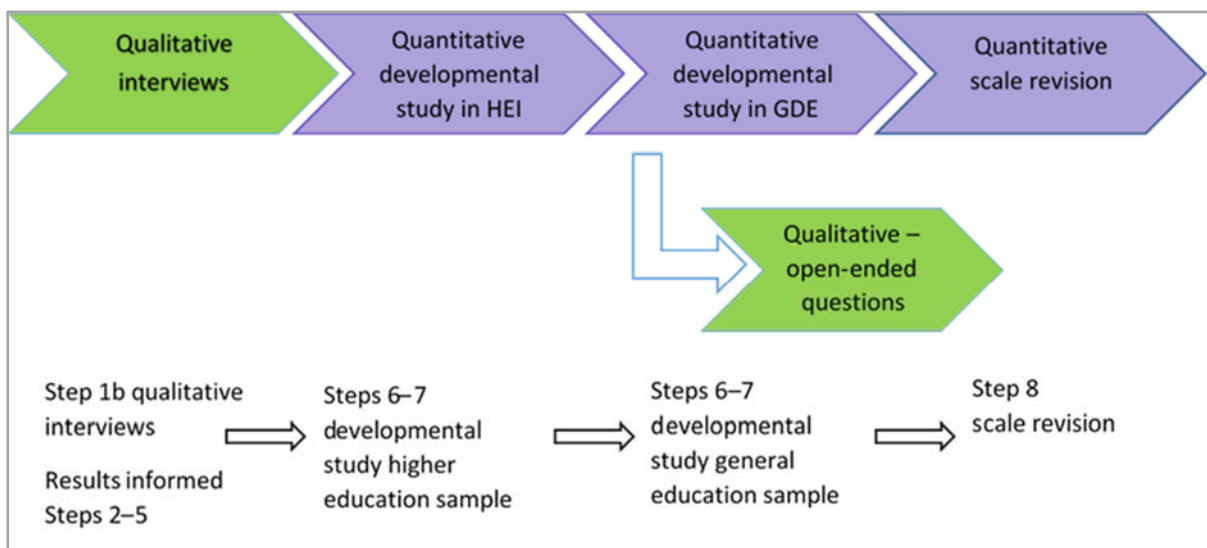
The research study was intended as basic research. The academic agenda of basic research is to increase scientific knowledge, understand processes and their outcomes and thus make a theoretical contribution to the research field (Leedy & Ormrod, 2005:94; Saunders *et al.*, 2007:596). In contrast, applied research attempts to find practical solutions to practical problems (Leedy & Ormrod, 2005:94). Applied research was not the intended research process of the study. However, in order to gain access to the institutions concerned it was also necessary to demonstrate that the research was applicable to managerial concerns relating to turnover and retention. In addition, the very nature of a methodological study implies that a concrete measurement instrument would be developed with a potential practical application.

2.2.5 Mixed method research study

Brown (2010) and Denzin (2010:421) pointed out that the debate about mixed method research has not been resolved in the last 50 years and that the end of the “paradigm wars” is not yet in sight. Buchanan and Bryman (2007) considered the complementary way in which qualitative and quantitative research can bring about a more thorough understanding of the construct being studied. This was echoed by researchers such as Shah and Corley (2006:1821) who believed that “...bridging the quantitative-qualitative divide” is a potent way of building new theory and understanding.

In the present research study, a mixed method research strategy was followed. Data collection strategies were both qualitative and quantitative. The interplay between qualitative and quantitative research as conducted in this study is summarised in Figure 2-1.

Figure 2-1: Mixed method research methodology used in this study



Qualitative data was collected and described thematically at the onset of the study by conducting semi-structured interviews with key participants, mostly HR managers and industrial psychologists tasked with talent retention. The purpose of the qualitative data was to obtain a rich description of the important issues likely to be

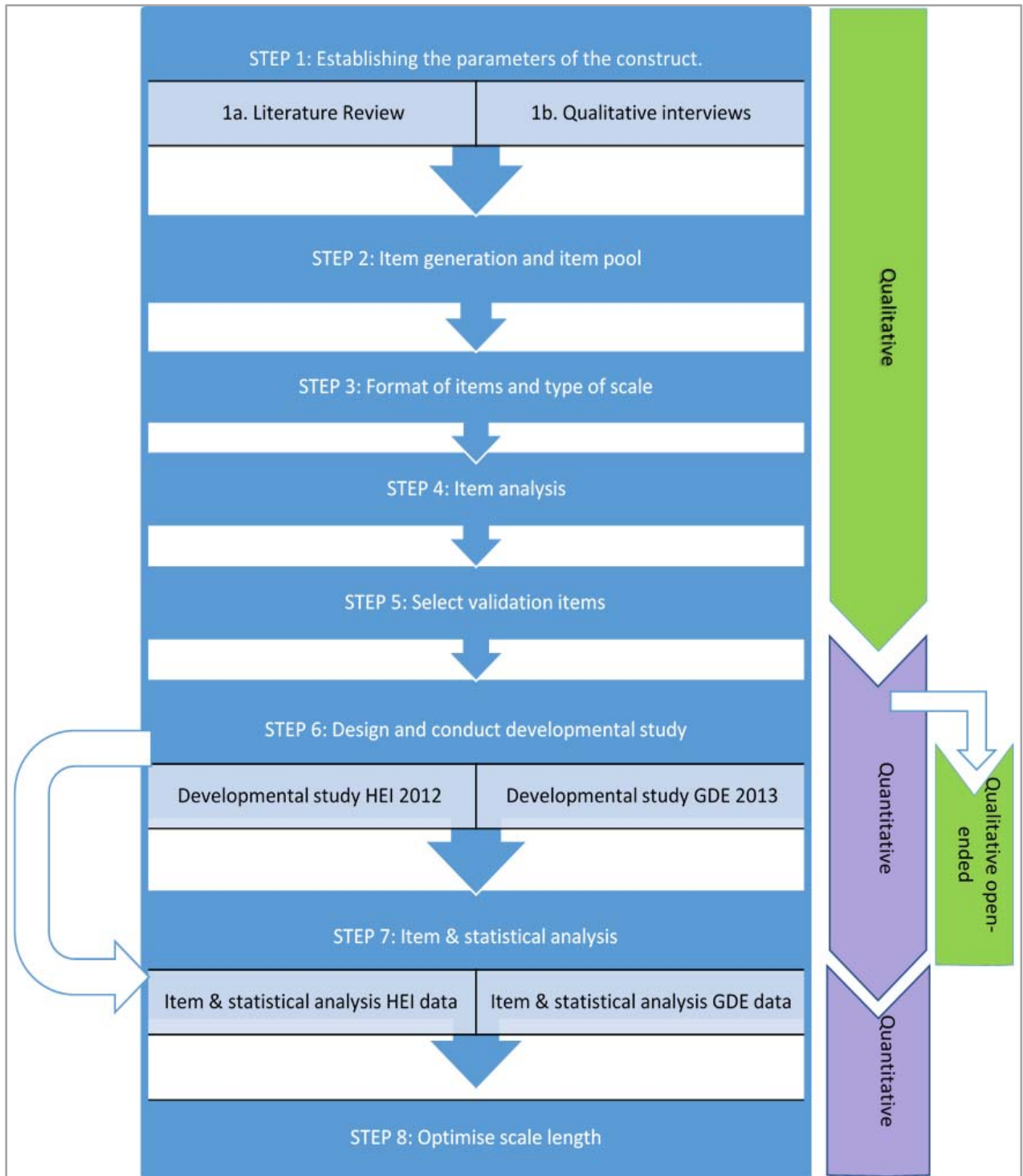
encountered in the research field (Leedy & Ormrod, 2005:94–95). The qualitative data was utilised for exploration of the complex constructs of employee turnover and employee retention relevant to the South African context and it contributed to the development of scale items. Considering the scale development process presented previously in Figure 1-1, the results of the qualitative interviews from Step 1a of the scale development process informed Steps 2–5 of the scale development process.

In addition, quantitative data was collected and described statistically. An employee retention scale was developed and administered to two distinct samples of employees as part of the developmental study. The quantitative data was collected in Steps 6 and 7 of the scale development process. For the first cycle of the developmental study the sample came from higher education institutions (HEI). Steps 6–7 were then repeated in a general education sample (GDE). Basic items analyses such as means, standard deviations and frequencies were conducted to help identify inadequate items. If the basic items analyses indicated that the data was suitable for exploratory factor analysis, then this was conducted. Confirmatory factor analysis was only conducted in the second, larger sample in general education.

The retention scale included open-ended questions which produced qualitative data that enhanced the understanding of the scale items and further explored the talent retention domain by determining if additional variables not included in the scale items, emerged as important for the respondents. The open-ended questions that formed part of the scale were analysed thematically using the Braun and Clarke methodology (2006). If inadequate open-ended responses were provided then no further qualitative analysis was done. In the GDE sample the open-ended questions produced substantial qualitative data which required qualitative analysis.

The mixed method research applied in this study contributes to the “methodological inventiveness” of organisational research described by Buchanan and Bryman (2007:484). In Figure 2-2 below the interaction between the qualitative/quantitative phases of the study and the scale development steps are presented.

Figure 2-2: Scale development process and qualitative/quantitative research phases



2.2.6 Inductive and deductive modes of reasoning

Both inductive and deductive modes of reasoning were used. The literature and theory were reviewed with the aim of producing conceptual clarifications of key constructs in employee turnover and retention research (Tharenou *et al.*, 2007). This process could be regarded as deductive (Mouton, 2001:117). The constructs derived from the literature and theory review served two purposes. Firstly, following deductive reasoning some of the constructs identified theoretically were used in item development. Secondly, some of the conceptual clarifications obtained deductively informed the outline of the semi-structured interviews with key participants. Subsequently, the qualitative findings of the semi-structured interviews required inductive reasoning in order to elicit themes that were integral to the development of the employee retention items. Thus, following the advice of Hinkin (1995) both deductively and inductively generated items could contribute to the item pool.

During the developmental part of this study an inductive process was followed where a preliminary factor analysis was conducted on the employee retention items “in order to learn about the methodological quality of the data” (Mouton, 2001:174). No specific theoretical model was applicable. If factors emerged that could be linked to existing theory, then these were described in the discussion of results following the developmental study.

As part of the developmental study, open-ended questions were included and presented to the respondents. The results of these open-ended questions were analysed using inductive reasoning in order to elicit themes that could contribute additional knowledge, considering diverse viewpoints and perspectives (Johnson *et al.*, 2007).

2.3 PARTICIPANTS

2.3.1 Key participants (Step 1 of scale development process)

In the initial stage of the scale development (Step 1b in Table 1) a selection of key participants were identified at various industries in Gauteng, South Africa. The sampling strategy was a non-probability, purposive sampling approach which was suitable for qualitative data collection (Barbour, 2001). In purposive sampling the participants are chosen based on their personal knowledge, experience or expertise in the domain of interest (Cooper & Schindler, 2006:715). Purposive sampling has also been referred to as “theoretical sampling” (Barbour, 2001). Purposive sampling implies that the participants are not selected on a random basis or just because they are available and accessible but because they have specific attributes required for the qualitative study (Silverman, 2011). A sample size of 14 key participants was proposed by the researcher and two respondents in seven different organisations were considered in order to obtain a broad perspective of retention in a variety of industries. A sample size of 11 respondents was realised. Key respondent reports have been used successfully for item generation in measurement scale development (Hinkin, 1995).

The criteria for inclusion in the selection of key participants in this first step of the study were as follows:

- Key participants needed to possess in-depth knowledge of the field of turnover and retention. This could be by virtue of being tasked with the responsibility for talent management, risk management of turnover or exit management research. The key participants could also have obtained knowledge of turnover and retention through academic, applied research in the field or operational requirements within their organisations.
- Key participants were required to provide organisational level data relevant to retention research. Alternatively key participants needed to have access to organisational level data.

- Availability of participants. The key participants were asked to be available for a 30 to 45 minute semi-structured interview and they had to consent to being interviewed.
- Logistical considerations – Gauteng was chosen to minimise travel expenses and manage logistical challenges.

2.3.2 Developmental study participants (Steps 6-8 of scale development process)

For the required developmental study two distinct samples were obtained. In the first phase of the scale development (Step 6 in Table 1-1), the researcher utilised a purposive, convenience sample of permanent, full-time employees employed in higher education institutions in South Africa. Surveys were sent to 360 academic staff employed in 13 different tertiary academic institutions across South Africa. The surveys formed part of the SANPAD project which had an overall objective to identify the factors and practices that attract, develop and retain academic staff members in South African Higher Education Institutions. Surveys for the HEI study were sent out in hard copy format.

The second phase of scale development required a larger and different sample for item validation (Hinkin, 1998). A total of 3 300 questionnaires were distributed to educators and school leaders (heads of department, deputy principals and principals) in a single school district in the Gauteng Department of Education (GDE). Participants included temporary teachers and teachers paid by school governing boards (SGB) but excluded private school employees. Surveys for the GDE study were sent out in hard copy format. The sample was a purposive, convenience sample.

The respondents in the HEI study provided data from their responses to the scale items and these were analysed quantitatively. The respondents in the GDE study provided data that was analysed quantitatively but in addition contributed a substantial number of open-ended responses that were analysed qualitatively.

2.4 DATA COLLECTION

The data types and data collection modes that were used in the research study are discussed in the following section.

2.4.1 Primary data collection

Primary data can be described as data collected specifically for the purpose of a research study (Mouton, 2001:145). The primary data collected for this study was both numerical and textual. Primary data was collected using a mixed-methods approach which implies using both qualitative and quantitative data collection techniques and analysis procedures (Saunders *et al.*, 2007:602).

Three sets of primary data was generated in the study:

The first set of primary data was generated through semi-structured interviews with key respondents in a sample of six industries in the South African context. These participants had specialised knowledge, experience and skills in the areas of employee turnover and employee retention or exit management research. The findings from the interviews were used to develop an employee retention measurement tool and they are described in section 4.5.

The second set of primary data was generated by administering the scale items developed from the prior steps, to a sample of employees in higher education institutions in South Africa. The analysis of items determined their suitability for inclusion or exclusion from the measurement scale.

The third set of primary data was generated by administering the talent retention scale to a sample of employees in general education institutions in South Africa. Through analysis it was determined whether the scale was valid and reliable.

2.4.2 Secondary data collection

Secondary data obtained were both numerical and textual in the present study. Secondary data from paper and digital sources were requested from the key participants that were organisations selected for Step 1b of the scale development process. Secondary data that would enable the exploration of the parameters of the turnover and retention content domain were requested. Examples were requests for: historical trends in turnover within the department or organisation; performance standards and performance appraisal results; restructuring history of the department or organisation and organisational performance measures if available. Website information that was in the public domain was also explored qualitatively. Website information that was deemed relevant to the present study included annual reports, HR policies, employee equity information, amount of money spent on employee training, information on mergers, acquisitions and retrenchments and sustainability data. Monthly or quarterly magazine publications from the six organisations in the study also highlighted recognition and rewards processes including special achievement awards for individuals or departments.

Contextual variables such as the effect of the recession on various industries as well as the age of the organisation and stage of development of the organisation were evaluated for relevance to the content domain of turnover and retention. In addition, contextual variables such as scarce skills applicable to the industry and benchmarking studies conducted within the relevant sectors were considered pending availability.

2.5 DATA ANALYSIS

The extent and nature of the data analysis required for the study are briefly described in Table 1-1. The goal of the data analysis is to determine if the scale instrument can be regarded as a valid and reliable measure of the underlying construct it sets out to measure (Hinkin, 1995).

Content validity considers whether the scale instrument measures the field of interest in a sufficient way and is required to be integrated into the scale when the items are developed (Hinkin, 1995). Content validity is demonstrated in Steps 1–4 of the scale development process as depicted in Figure 1-1.

For Step 1b (the semi-structured interviews with key participants) the qualitative data was analysed thematically. Categories for qualitative analysis can be guided by the purpose of the research (Saunders *et al.*, 2007:480). It was proposed that the qualitative data would align with the following research objective:

- To describe how employee talent retention is defined, identified, measured and monitored in a sample of organisations represented by key participants.

Additional patterns, themes and relationships may emerge due to the interactive nature of qualitative data collection and data analysis (Saunders *et al.*, 2007:484).

The analysis of data for the scale development process (Steps 2–8 in Table 1-1) will be described in Chapters 4–7. Qualitative data analysis that was focused on identifying an item pool and refining the item pool is discussed in Chapter 4. Quantitative data analysis to ensure the validity and reliability of the measurement scale was conducted and is reported in Chapters 5-7. In addition, qualitative data obtained from open-ended questions are analysed in section 6.5. Due to the highly sophisticated and complex data analysis required for scale development (Tharenou *et al.*, 2007:165–169) the quantitative data analysis was conducted by a person with expertise in statistical analysis and the researcher was responsible for ensuring that the scale development process was adhered to and for interpreting the findings. The quantitative data analysis for the development study (Steps 6–8) included descriptive statistics, internal consistency reliability and exploratory factor analysis in the first sample in Higher Education, and was conducted using SPSS 20 (2012). As part of the development study and in order to validate the measurement scale, the items were administered to a larger sample in general education. In the larger sample, descriptive statistics, internal consistency reliability, cross-tabulations, exploratory

and confirmatory factor analysis (CFA) were conducted where appropriate. CFA was conducted using SPSS AMOS 22 (2014). Details and definitions of the type of analysis are discussed in the following sections.

2.5.1 Qualitative data analysis

In qualitative data analysis the intention is to move beyond what is stated by participants or read in documents, to a process of comprehension of underlying constructs and themes (Silverman, 2011). The qualitative data was analysed using the qualitative method of thematic analysis as described by Braun and Clarke (2006:87):

- Familiarisation with the data – transcription, reading, initial ideas.
- Generation of initial codes by coding “across the entire data set, collating data relevant to each code”.
- Theme search – “collating codes into potential themes”.
- Theme review – “generating a thematic map of the analysis”.
- Definition and naming of themes – “the overall analysis the story tells, generating clear definitions and names for each theme”.
- Report the themes – “selection of vivid, compelling extract examples, final analysis of selected extracts”.

Themes produced helped generate items for the item pool in Step 2 of the scale development process and each theme, with its associated items, is specified in section 4.7.

2.5.2 Descriptive statistics

The purpose of descriptive statistics is to render an organised summary of the data produced during quantitative research (Leedy & Ormrod, 2005). Basic descriptive statistics were conducted on the quantitative data. Descriptive statistics including means, standard deviation, range, skewness and kurtosis were conducted as these can all assist in identifying inadequate items in a scale (Hinkin, 1998).

Frequencies are used to describe the number of respondents or percentage of respondents that can be allocated to a category (O’Neil, 2009). In this research, frequencies were used primarily in the demographic results of the developmental study.

The **mean** is a measure of central tendency and can be described as the arithmetic average of the scores within the section of the scale being analysed (Field, 2009; Leedy and Ormrod, 2005).

Standard deviations provide an indication of how far the data is spread from the central mean or arithmetic average with the range depicting the lowest and highest possible score (Saunders *et al.*, 2007). In a normal distribution it can be expected that a clustering of the scores around the mean in a bell-shaped pattern would occur (Hair, Black, Babin, & Anderson, 2010:36). In order to evaluate how the items compare with a normal distribution additional statistical analyses of skewness and kurtosis were performed.

Skewness compares the symmetry of the actual distribution around the mean to the expected normal distribution. In a normal distribution the skewness value would be zero (Field, 2009:19). Skewness helps to determine if the variables fall into an uneven distribution with the peak to the left of the mean (positively skewed) or a peak to the right of the mean (negatively skewed) distribution (Leedy & Ormrod, 2005:256). Hair *et al.* (2010:36) define a positively skewed distribution as one with “relatively few large values and tails off to the right” of the mean while a negatively skewed distribution has comparatively “few small values and tails off to the left” of the mean.

Kurtosis examines the relative height of the distribution and measures how flat or peaked the distribution is compared to with a normal distribution (Field, 2009). A positive value points to a peak in the distribution curve while a negative value would refer to a flatter distribution (Hair *et al.*, 2010). In a normal distribution the kurtosis value would be zero (Field, 2009:19).

2.5.3 Validation analysis

In addition to the descriptive statistics, a validation analysis was conducted on the scale items. The validity of a measuring scale can be described as “the extent to which the instrument measures what it is supposed to measure” (Leedy & Ormrod, 2005:28). There are several different types of validity considered in organisation behaviour research (Flynn & Percy, 2001; Hensley, 1999; Hinkin, 1995).

Content validity is the degree to which the individual scale items adequately represent the content domain of the construct being measured (Field, 2009; Leedy & Ormrod, 2005; Worthington & Whittaker, 2006). Content validity is considered important from the onset of scale development and assessment of items generated is required for any statements regarding content validity (Hensley, 1999). Content validity in the present scale was assessed in different ways:

- the literature review, which helped to establish the theoretical parameters of the construct, as recommended by Hinkin (1998);
- the qualitative interviews, which helped to define the content area using an inductive process as recommended by Hinkin (1995);
- the item generation process based on the links between the literature review; qualitative interviews and the ensuing items (Hinkin 1995);
- expert validation from a panel of academics and content area specialists for the content validation of the first draft of the scale (Worthington & Whittaker, 2006).

Hensley (1999) pointed out that content validity has a stronger subjective component than the other forms of validity and that judgements of the researcher and the pre-test panel influence the content of the scale.

Construct validity is a critical part of the validation of a measurement scale (Hinkin, 1995) and can be defined as “the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure” (Hair *et al.*, 2010: 686). Construct validity is concerned with providing evidence for the

existence of the abstract characteristics that cannot be directly observed or measured (Leedy & Ormrod, 2005). Construct validity comprises four key components:

- **Face validity** – This can be defined as whether or not a scale **seems like or appears** to measure what it claims to measure (Leedy & Ormrod, 2005). Face validity is a strongly subjective process but part of its value lies in the potential increased motivation and cooperation of respondents if they perceive the items to be valid (Leedy & Ormrod, 2005; Stanton, Sinar, Balzar & Smith, 2002). Although some authors use the terms content and face validity as interchangeable, this research will be guided by the Leedy & Ormrod (2005:92) distinction between the concepts where face validity is defined as above, while content validity centres on sampling the domain of interest. Flynn and Percy (2001:419) pointed out that a scale can have poor face validity and have “masked” its true intention to respondents, while the same scale may have strong content validity and adequately sample the content domain. Face validity can also be determined by providing the scale to an expert panel for review (Worthington & Whittaker, 2006).
- **Convergent validity** – if items are indicative of a latent construct these items will converge or have a “high proportion of variance in common” (Hair *et al.*, 2010: 686). Convergent validity can be determined by considering the standardised estimates or factor loadings during CFA which should be at least 0.5 and ideally 0.7 or higher (Hair *et al.*, 2010:688).
- **Discriminant validity** – considers the distinctness or uniqueness of a construct and ideally the correlations among constructs should be low when the factor correlation matrixes are examined (Byrne, 2010). Positive indicators of discriminant validity include if a predicted-factor model fits better than a one-factor model and if “the variance extracted estimate is greater than the squared correlation estimate” (Hair *et al.*, 2010:688).
- **Nomological validity** – is the process where the correlations among the constructs in a measurement theory are examined to see if they make logical sense (Hair *et al.*, 2010:688). Nomological validity can also be described as criterion-related validity and is concerned with the “relationship between a measure and another independent measure” (Hinkin, 1995:968). The scores from the scale being tested should be able to predict or correlate with a different scale

that is theoretically related to the construct being measured (Field, 2009:784). The Intention to Quit scale (Cohen, 1993) was used as the independent measure. In order to establish nomological validity, the matrix of construct correlations and structural equation modelling (SEM) can be considered (Strasheim, 2011). A scale measurement should be able to “correlate with a group of related constructs in a network” based on theoretical assumptions (Flynn & Percy, 2001:418).

2.5.3.1 Statistical tests and analyses

It would not be possible to describe all the statistical tests and analyses that could be conducted for validity, reliability or their associated constructs as that would require a study on its own. However, the most salient statistical tests are briefly discussed in order to provide clarity for the developmental study in the HEI sample and GDE sample.

Factor analysis

Factor analysis is a widely used statistical procedure used to examine the covariance between item measurements or observed variables in an attempt to determine the relationship with underlying constructs or latent factors (Byrne, 2010). Factor analysis reduces a set of “observed variables to a smaller set of variables” (Hinkin, 1998: 112). Prior to factor analysis being conducted the data is analysed for sampling adequacy and sphericity.

Sampling adequacy and sphericity

A Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was conducted on all the measurement scales. The KMO measure looks at the inter-correlation between the variables (Field, 2009). The closer the KMO result to 1 the better the sampling adequacy. With a higher KMO the pattern of correlations is compact and factor analysis can be conducted on the results in the hope of producing distinct and reliable factors (Hair *et al.*, 2010). According to Hair *et al.* (2010), a KMO measure of 0.6 or above is considered acceptable for factor analysis.

Bartlett's test of sphericity is a statistical test that determines if the dependent measures are correlated and how significant all the correlations are within the correlation matrix. If Bartlett's test of sphericity has a significance value of 0.000 this implies that the correlations within the correlation matrix are significant and several of the correlation coefficients are larger than 0.3 and the items are suitable for further factor analysis (Hair *et al.*, 2010, 92; Field 2009).

If there are adequate findings on both measures of sampling adequacy and sphericity it implies that an exploratory factor analysis (EFA) can be conducted.

The correlation coefficient is represented by a number between -1 and +1 and represents the nature of the relationship between variables. The correlation coefficient indicates the **strength of the relationship** between variables where 0 is equated with no relationship and 1 is equated with a perfect relationship (Leedy & Ormrod, 2005). In addition, the **direction of the relationship** can be positive or negative. A **negative relationship** implies that as the "scores in one variable increase the scores in the other variable decrease" (O'Neil, 2009:18). In contrast a **positive relationship** implies that the scores of both variables increase together or decrease together – always in the same direction (O'Neil, 2009).

Exploratory factor analysis (EFA)

Exploratory factor analysis (EFA) is typically chosen when the relationships between the observed variables and latent factors are unclear and the number of factors is unknown (Hair *et al.*, 2010). EFA attempts to find the smallest number of factors that may account for covariation among the apparent variables (Byrne, 2010). In EFA the numbers of factors emerge from the statistical computations and are named based on the variables with high loadings on a specific factor (Hair *et al.*, 2010). During EFA cross-loadings can occur as EFA can result in a loading for all variables on all factors (Hair *et al.*, 2010). A cut-off point of 0.32 is used for variables, to allow for interpretation (Tabachnick & Fidell, 2001). EFA processes produce communalities that were extracted using principal component analysis and principal axis factoring in this study. **Communalities** refer to "the total amount of variance an

original variable shares with all other variables” (Hair *et al.*, 2010:92). **Principal component analysis** is a data reduction process where the initial set of variables is reduced to “summary indices” (Floyd & Widaman, 1995:287) with the aim of keeping as much of the item variance as possible in the scale (Worthington & Whittaker, 2006). Principal component analysis has also been defined as a “factor model in which the factors are based on the total variance” (Hair *et al.*, 2010:92). **Principal axis factoring** is a factor analytic technique where the aim is to understand the relationships among the measured variables (shared variance among items) by discovering the underlying latent variables. Conceptually, the latent variables are seen as causing the measured variables (Floyd & Widaman, 1995). Although principal components analysis and principal axis factoring produce similar results, the latter process is viewed as being more suitable for development of new scales (Worthington & Whittaker, 2006). EFA also produces **eigenvalues** which is another name for the “latent root” which denotes the extent of variance in the items that can be accounted for by a factor (Hair *et al.*, 2010:92).

Confirmatory factor analysis (CFA)

If previous knowledge of the underlying latent factors is available through empirical research or theory these hypothetical structures can be tested statistically using confirmatory factor analysis (Byrne, 2010). At the onset of CFA it is required to specify the **number** of factors predicted with the scale; **which factor** each item is related to and predicted to load on without any cross-loadings and whether or not the **factors are correlated** (Worthington & Whittaker, 2006). The latent variables will be indicated by the strength of the factor loadings with the observed variables. The items in a measurement scale are generally regarded as the observed variables and the predicted factors in the measurement scale are the latent variables (Byrne, 2010). CFA takes measurement error into account and specifies “the extent to which the latent factor does **not** explain the measured variable” (Hair *et al.*, 2010:672). CFA is regarded as a key statistical process in determining the construct validity of a scale and will either confirm or dispute the quality of the proposed factor structure (Hinkin, 1998).

Squared multiple correlations (SMC) results represent the proportion of variance that can be explained by the predictors of the specified variable (Byrne, 2010:191). SMC can also be referred to as “item reliability, communality or variance extracted” (Hair *et al.*, 2010:685). SMC should be above 0.3 to be deemed acceptable and if it falls below 0.3 for an item it means that the item is not significantly correlated to the factors in the study and the item should be taken out of the scale (Beavers, Lounsbury, Richards, Huck, Skolits & Esquivel, 2013:11; Tabachnick & Fidell, 2001).

Invariance testing

Invariance testing was conducted for the scale items. Invariance testing is an additional approach to cross-validation which is also referred to as measurement equivalence (Vandenberg & Lance, 2000). Invariance testing is a strategy that tests whether a structural equation model identified in one sample can be replicated over a second independent sample from the same population (Byrne, 2010:259). Invariance testing helps to determine conceptual similarity or differences when interpreting the responses of individuals from different cultures or groups (Vandenberg & Lance, 2000). The measurement equivalence testing done should be linked to the goals of the research (Steenkamp & Baumgartner, 1998). Invariance testing is linked to one of the key objectives of the study which is the development of a measurement scale applicable to the **South African context**. If a loading is significant (statistically and practically), evidence is found that the item is related to the underlying construct in each culture or group (Chen, Sousa & West, 2005; Steenkamp & Baumgartner, 1998; Strasheim, 2011). Measurement invariance is required up to the level of measurement intercepts before means comparisons of groups, based on the latent variables, are valid. The measurement intercepts model is also referred to as the “scalar invariance” model (Vandenberg, 2002:141).

Invariance testing is recommended to be conducted in the sequence that it is presented below, as each level of invariance needs to be achieved before the next level of testing is done (Vandenberg & Lance, 2000). The levels of invariance testing utilised in this study are described based on the guidelines provided by Chen (2007); Strasheim (2011; 2014) and Vandenberg (2002):

- **Model 0: Configural invariance** or **unconstrained model** in which the same factor structure is assumed across groups. The same item is required to be associated with the same factor in each group; even though the factor loadings may differ across groups. Configural invariance shows that, similar but not equal, latent constructs have been measured in the groups (Vandenberg & Lance, 2000; Byrne, 2010).
- **Model 1: Metric invariance**, or equal **measurement weights** across groups where the loading of every single item on the underlying factor is constrained equal across the different groups and indicates that the underlying factor has the same interval or unit of measurement (Steenkamp & Baumgartner, 1998).
- **Model 2: Scalar invariance**, or equal **measurement intercepts** indicates that scores from two or more groups have the same factor loading which represents the unit of measurement and the same intercept which represents the origin of the scale. Latent mean differences across groups can then be compared if scalar invariance is achieved. Measurement weights and intercepts are equally constrained across groups (Chen, 2007; Vandenberg, 2002).
- **Model 3: Structural means** constrained equal across groups to determine if latent variables are similar or different across groups (Steenkamp & Baumgartner, 1998).
- **Model 4: Structural covariances** and variances of the latent variables are held to be equal across groups: measurement weights and intercepts are equally constrained, and the variances and covariances of the latent variables are equally constrained (Byrne, 2010; Strasheim, 2011).
- **Model 5: Error variance invariance**, which constrains the **measurement residuals** equal. When this level of invariance holds, all group differences on the items are due only to group differences on the common factors. This is rarely achieved (Chen, 2007; Steenkamp & Baumgartner, 1998).

In order for the assumption of measurement equivalence to hold across groups, it is necessary that models M0, M1 and M2 fit adequately in terms of the usual fit criteria, specifically IFI/TLI/CFI and the RMSEA, and that in the nested model comparisons, model M1 compared to model M0 (M1-M0) does not fit significantly worse than

model M0; and that model M2 does not fit significantly worse than model M1 (M2-M1) (Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000; Vandenberg, 2002; Strasheim, 2011).

In understanding the limits of measurement invariance Chen (2007:465) comments that “to ensure that the same construct has been measured in different groups, measurement invariance is necessary but not sufficient. Other criteria for checking validity of the measure, such as convergent and discriminant validity, external validity, and so on, should still be applied”.

Structural equation modelling (SEM)

A SEM diagram is a graphic representation of the relationships between dependent variables and explanatory variables where all the symbols have a mathematical meaning (Byrne, 2010). SEM consists of measurement models and structural models. The **measurement model** specifies the connection between the scale item scores and latent variables and is based on the previously identified CFA model. The measurement model identifies “the pattern by which each measure loads on a particular factor” while the **structural model** goes one step further and “defines relations among the unobserved variables” (Byrne, 2010:13). SEM was conducted using SPSS AMOS 22. Random and/or systematic measurement error for all observed variables in the SEM path diagram, forms part of SEM in a CFA framework (Strasheim, 2011).

Fit measures

In order to determine if the statistical model being used in the data analysis is an “accurate representation” of the observed data, **fit measures** are applied (Field, 2009:786). Fit measures are used to determine if the CFA model, invariance model and SEM are an appropriate fit for the data in this study. Using multiple fit measures to assess how well the model fits the data have become typical practice because there are not currently any single statistical significance tests that can identify a correct model given the sample data (Cheung & Rensvold, 2002; Schermelleh-Engel, Moosbrugger & Müller, 2003). Authors such as Marsh, Hau and Wen (2004)

caution against adopting fit indexes such as the Hu and Bentler (1999) recommendations as golden rules of thumb or absolute cut-off values without considering that their research was based on a hypothesis-testing rationale which is more suitable to assessing statistical significance than evaluating goodness-of-fit measures.

Fit measures used in the study along with the guidelines for interpretation that are followed in this study are listed below:

- **CMIN** – The chi-square statistic – this is the conventional test for overall “goodness of fit” but it is affected by sample size and cannot be relied on as the only criteria for model fit (Hu & Bentler, 1999:2)
- **CMIN/df** can be defined as the ratio of the Chi-square to its degrees of freedom has been proposed as less than 2 for very good fit of the statistical model, between 2 and 3 for good–acceptable fit of the model (Carmines & Mclver, 1981; Schermelleh-Engel *et al.*, 2003) and between 2 and 5 for reasonable fit (Marsh & Hocevar, 1985:567). The **CMIN/df ratio** is however still influenced by sample size, which reduces its practical use (Strasheim, 2014).
- **Chi-square difference test** is a fit measure applicable to nested models which determines if non-significant differences exist between different models applied to the same set of data (Chen, 2007). Chi-square difference tests are also sensitive to sample size and “distributions which are non-normal” (Chen, 2007:465). Thus the Chi-square difference test can result in models being rejected that are actually credible and for this reason is not used alone as the only fit measure in large samples (Schermelleh-Engel *et al.*, 2003).
- **Nested model comparisons.** In general nested models are defined by Schermelleh-Engel *et al.* (2003:34) as, “Any two models are nested when the free parameters in the more restrictive model are a subset of the free parameters in the less restrictive model.” Nested models are reported from the least restrained to the most restrained model with each subsequent model having increasing degrees of freedom and more fixed parameters. Any model nested hierarchically under the specific model the researcher is focused on may serve as a comparison model. For the chi-square difference test to be considered as valid, at the very minimum the least restrictive model of a sequence of nested models

should fit the data (Schermelleh-Engel *et al.*, 2003). Nested model comparisons can include comparing the models used for invariance testing with each other and the configural model can provide the baseline against which all the hierarchical tests for invariance are compared (Byrne, 2010). Nested model comparisons may also include applying the chi-square difference test when comparing the model of interest to a baseline model (independence or null model) or to a saturated model (Hu & Bentler, 1999). **The independence model** is used most often as a **baseline model** in nested model comparisons. In this restrictive model all error variances are set to 0; all factor loadings are fixed to one; all variables are uncorrelated and only the variances of the variables are estimated (Schermelleh-Engel *et al.*, 2003). **The null model** is a more restrictive **baseline model** than the independence model and all parameters are fixed to 0 which implies there is no correlation between the variables (Hu & Bentler, 1999; Schermelleh-Engel *et al.*, 2003). The null model is also known as the “zero model” (Arbuckle, 2014:617). **The saturated model** does not have any constraints and should fit the data set exactly and “exactly reproduces the sample covariance matrix” (Hu & Bentler, 1999:2). It can be described as “the most general model possible” and is the extreme opposite of the independence model (Arbuckle, 2014:617).

- **RMSEA – root mean square error of approximation.** The RMSEA is an absolute fit index and is used to assess “how well an *a priori* model reproduces the sample data”. The data is compared to a saturated model (Hu & Bentler, 1999:2). Ideally the RMSEA is usually required to be less than 0.05 for good fit with acceptable fit ranging between 0.05–0.08 with 0.08 being regarded as the upper level of acceptable fit (Vandenberg and Lance, 2000:44; Schermelleh-Engel *et al.*, 2003:36).
- **Incremental fit index (IFI); Tucker Lewis index (TLI) and comparative fit index (CFI)** are all examples of incremental fit indexes and measure the “proportionate improvement in fit by comparing a target model with a more nested baseline model” which is usually a null model (Hu & Bentler, 1999:2). Results of 0.90 can be regarded as the lower limit of good fit while results of 0.95 or greater produce “high confidence in fit” (Vandenberg & Lance, 2000:44) and 0.95 or higher is put forward as recommended criteria or ideal (Hu & Bentler, 1999:27).

- **PCFI – parsimonious comparative fit index** where a parsimony modification is applied to the comparative fit index and the PCFI is then compared to a baseline model (Arbuckle, 2014). A model that is high in parsimony indicates better fit and is considered to be a simple model with “few parameters and relatively many degrees of freedom” (Arbuckle, 2014:618).
- **ML or maximum likelihood** is a method of fit used in structural equation models which produces “...estimates for the parameters which **maximise the likelihood** that the empirical covariance matrix is drawn from a population for which the model-implied covariance matrix is valid” (Schermelleh-Engel *et al.*, 2003:25). For ML to be used as an estimate of parameters all variables are assumed to be measured on an interval scale, the sample size is large and the variables are normally distributed or close to normally distributed (Schermelleh-Engel *et al.*, 2003).
- **AIC – Akaike information criterion** was developed for use with maximum likelihood estimation and is classed as an “information theoretic measure” (Arbuckle, 2014:628). AIC is not interpreted in isolation and only in comparison with other models Schermelleh-Engel, (2003:45). AIC penalises degrees of freedom and reflects the number of estimated parameters in the model. The model with the lowest score indicates the best fit (Byrne, 2010:82)
- **BCC – Browne and Cudeck criterion** is an “information theoretic index” similar to AIC used to compare models where the smallest value indicates the best fitting model (Cheung & Rensvold, 2002:244). BCC does penalise model complexity unlike AIC which does not (Byrne, 2010:82).
- **BIC – Bayesian information criterion** is an information index similar to the AIC that can be used to compare models that are not nested. The model with the smallest value can be regarded as the best fitting model and the most parsimonious model (Little, Bovaird & Widaman, 2006). BIC differs from AIC in that BIC penalises model complexity (Byrne, 2010:82).

Reliability analysis

Reliability refers to consistency of measurement for the set of variables being analysed and “the extent to which all the items within a single instrument yield similar results” (Leedy & Ormrod, 2005:93). Cronbach’s coefficient alpha is an accepted

measure of internal consistency reliability that ranges between 0 and 1 with values of 0.6 and 0.7 being regarded as the lower limit of acceptability (Hair *et al.*, 2010:92). The item reliability analysis helps to determine item “homogeneity” (Hinkin, 1995:968). A longer scale with more items can result in higher alpha scores and conversely fewer items in a scale can reduce alpha scores. If a scale is multi-dimensional, Cronbach’s alpha needs to be calculated for each construct separately. In addition, if the alpha scores are higher than 0.9 the possibility exists that “some items are redundant” and that the length of the test can be reduced (Tavakol & Dennick, 2011:54).

2.6 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE RESEARCH DESIGN

Mouton (2001:73) points out that methodological studies use data collected through standard research designs and as such the studies are vulnerable to the same sources of error applicable to semi-structured interviews and survey research. The quality and rigour required for this methodological study encompasses primary data collection and analysis (semi-structured interviews and survey research) and secondary data collection and analysis (existing data).

2.6.1 Semi-structured interviews (scale development process Step 1b)

Saunders *et al.* (2007:317–318) identify several data quality issues that need to be controlled for when using semi-structured interviews:

Interviewer or researcher bias: the person conducting the interview may unwittingly influence the outcome of the interview by creating an impression that some responses are more desirable than others. As recommended by Saunders *et al.* (2007:318-320) the interview was practised with a peer reviewer in order to obtain feedback about non-verbal behaviours or poor interview techniques that could adversely affect the outcome. Feedback received from the peer reviewer was that the interviewer should allow equal and sufficient time for responses to all answers

and not to read any questions faster than the others as this created the impression that some questions could be rushed or answered quickly.

Interviewer or researcher error: it is possible that the interviewer may misunderstand or capture the interview data incorrectly. In order to control for interviewer error the findings of the qualitative semi-structured interviews were summarised and sent back to the participants to verify that the researcher had the correct understanding of the interview and the participant agreed with the researcher's recollection of the interview. Bryman and Bell (2007:411) refer to this process as "respondent validation". In addition to controlling for researcher error the process of "respondent validation" can also enhance the credibility of qualitative research, confirm the findings or assist in refining the results (Barbour, 2001). In each instance where the participant made changes to the summary or added information, the revised summary was used in the qualitative analysis.

Response bias or interviewee bias: in order to protect themselves from the perceptions of others the interviewee may choose to present themselves in a socially desirable way; or refuse to disclose information that they regard as 'sensitive' or too personal. Other factors such as work pressure due to time constraints can result in interviewees who either refuse to participate or do not wish to discuss the questions in depth (Saunders *et al.*, 2007:318). In this study the researcher used the recommendation of Leedy & Ormrod (2005:100) to use data source triangulation as a potential methodological control that can be applied to control for response bias or interviewee bias. The recommended strategies that were followed included: using more than one employee from each organisation and verifying interview information with organisational data (Leedy & Ormrod, 2005:100). In this study the organisational data that were regarded as valuable included hard copies of performance appraisal criteria, existing exit management research, HR policies and strategies and information contained in annual reports, company magazines and the organisations' official websites. In one of the organisations, only one key participant was willing to be interviewed as the most senior HR person did not feel that the other executives had knowledge of turnover or retention. In this organisation, data source triangulation depended on organisational data alone. Barbour (2001) points out that data triangulation does not always provide confirmation of internal validity but may help to refine or corroborate findings.

Reliability or dependability of the research: the dependability of the research can be increased by keeping up-to-date records of all the stages of the research and by making the process of the research as transparent as possible (Bryman & Bell, 2007:414). The process of respondent validation ensured that the qualitative summaries of the interviews were deemed to be reliable and accurate. Reliability is further enhanced when “conclusions can be traced back to data” and it is recommended to use the “respondents’ words” (Brown, 2010:243). As part of the thematic analysis method proposed by Braun and Clarke (2006:87) not only themes are reported in the analysis but also extracts and examples from the original transcripts.

Transferability or external validity of the research: due to the unique context of each organisation it was not assumed that the results of the interviews should be transferable or generalised to a broader population (Bryman & Bell, 2007:413). However, it was assumed that common themes identified during the qualitative analysis could be carried through to item development as part of the scale development methodology. It was assumed that the resultant scale could in turn be transferable to other contexts if found to be valid and reliable in those contexts.

2.6.2 Scale development process (Steps 2-8)

The scale development process has been described in Table 1-1 and linked to the reliability and validity required at each step of scale development. Additional quality and rigour concerns not discussed in Table 1-1 are summarised below:

Content validation of scale items: Use of an expert panel for content validation of first draft of scale. The panel of experts were academics and psychologists or HR and organisational behaviour specialists. A panel of seven experts were provided with construct definitions and asked to rate items in terms of adequacy. DeVellis (1991:75–76) recommends specific questions to be asked to the panel: “How relevant do you think each item is?”; “Please evaluate each item’s clarity and conciseness”; “Please point out confusing items and suggest alternative wording”; “Please indicate any other items or methods that would help to diagnose (employee retention)”. The process of content validation resulted in item changes and the addition of questions pertaining to the context for the first phase of the

developmental study (Higher Education Institutions) including concepts such as satisfaction with funding opportunities.

Pre-testing of scale items: As recommended by Cooper and Schindler (2006:715), the questions to be used in the developmental study were pretested on a small group of participants in order to discover errors in the research instruments including unclear instructions, sequence of questions and the duration of the questionnaire. This group of participants included the 11 key participants used in the qualitative phase of the research. This was an additional check done after the review of items by experts (Step 4 in Table 1) and before the HEI study sample was assessed (Step 6 in Table 1). A total of 18 surveys were pretested with revisions made based on the recommendations of the participants.

Self-report data compared with factual data: due to possible bias and sources of error found in self-report data it is recommended that survey participants should not provide the information for all variables but that objective, factual data should be used for comparison whenever possible (Cooper & Schindler, 2006:336). This was not possible in the Higher Education context or the Gauteng Department of Education due to the need to protect respondent confidentiality and anonymity.

Item construction errors: there are numerous item construction errors and examples are provided in Table 2-2.

Table 2-2: Item construction errors

Item errors	Example	Correction
Absolute language	Always/never	There are times/there are occasions
Negation (extreme no)	I am not/I will not	At times I feel like
Items sensitive to memory decay and time errors	When is the last time you wanted to quit your job?	Do you currently intend to quit your job?
Double-barrelled questions	I feel sad and depressed	I feel sad
Ambiguous items or vague items	What is the function of retention?	Does retention of employees save the company money?
Abstract or fictitious constructs	What do you fear for your organisation?	Do you fear that your organisation is changing?
Double negatives	I don't not want success	I want success
Sensitive questions	How much do you earn?	Avoid asking sensitive questions as it can make the interviewee resentful or cause them to withdraw
Using confusing time frames or undefined constructs	How frequently do you intend to resign?	Have you thought about resigning in the last month?

Source: Adapted from Mouton (2001:103-104); Cooper and Schindler (2006:366).

An attempt was made to address or avoid these potential item construction errors during the scale development process.

As part of the retention scale, open-ended questions were included. In the HEI study minimal responses were received. However, in the GDE study substantial responses to the open-ended questions were provided. In the thematic analysis of these open-ended questions the same methodological rigour applicable to the qualitative analysis of the semi-structured interviews (section 2.6.1) was applied.

2.7 RESEARCH ETHICS

There are considerable ethical requirements for the completion of this study which will be discussed briefly based on the guidelines provided by Saunders *et al.* (2007:182–185) and Mouton (2001:238–245).

No pressure was applied to individuals or organisations to ensure access. Access was provided voluntarily (Saunders *et al.*, 2007:183). No incentives to participate were given or promised to the research participants (Saunders *et al.*, 2007:183). The ethical rights of the participants were considered and upheld. They had the right to withdraw from the research at any time; the right to be treated with dignity and respect; the right to privacy and the right to refuse to answer intrusive questions. In addition, participants had the right not to be harmed physically, socially or psychologically by the process or outcome of the research and the right to be informed about the nature and process of the research (Mouton, 2001:244–245). The consent form for individual participants was required at the qualitative stage and during the developmental studies. The participants at the qualitative stage were given feedback both in terms of the summary of their individual interviews and by being asked to review the scale items they had helped to generate with their interviews. Respondents in the developmental studies were advised that their institutions would be given group results and feedback only.

The responses and information provided by respondents were treated with the necessary confidentiality in order keep their information private and the required anonymity in order to protect their identity (Mouton, 2001:244).

Researchers are required to comply with scientific and professional ethics which include objectivity and integrity in research including accurate results, proof of results and non-fabrication of findings (Mouton, 2001:240). The researcher signed a declaration in this regard which is recorded at the onset of this dissertation and as part of the ethical clearance process of the Ethics Committee of the University of Pretoria.

Addendum A contains the informed consent form that was used in the study as well as the semi-structured interview schedule for key participants.

Addendum B contains the informed consent form for the individual employee respondents in the HEI developmental sample as well as the questionnaire that was used in the study (pencil and paper version).

Addendum C contains the informed consent form for the general education developmental sample which includes consent from the Gauteng Department of Education, the informed consent form for individual respondents in the developmental study and the questionnaire used (pencil and paper version).

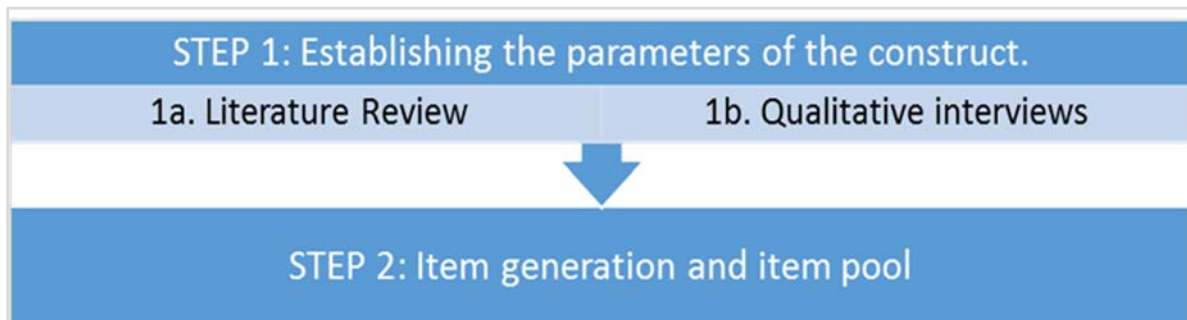
Addendum D contains the version of the employee retention questionnaire used in the SANPAD study in HEIs which formed part of the developmental study for this research.

Addendum E contains the version of the employee retention questionnaire used in the developmental study in the Gauteng Department of Education.

CHAPTER 3: LITERATURE REVIEW

In this chapter the researcher provides the results of Step 1a of the scale development process described in Figure 1-1, an extract of which is repeated here for convenience:

Extract from Figure 1-1: Scale development process



3.1 INTRODUCTION

Step 1, establishment of the parameters of the constructs, has been recommended by DeVellis (1991) and Hinkin (1995) as a requirement for good scale development. The construct of talent retention was defined and relationships with related variables such as talent management, employee retention, employee turnover, the costs of turnover, consequences of turnover and measurement of turnover were established as part of the recommended process (Tharenou *et al.*, 2007:165). For the purposes of this research study the literature review was designated as Step 1a and proposed to identify the theoretical parameters of the turnover and retention theory to be included in the measurement scale.

3.2 STEP 1A OF SCALE DEVELOPMENT PROCESS: LITERATURE REVIEW

The aim of the literature review is the application of a theoretical basis to develop the items to be included in the proposed talent retention scale. The process involves

establishing the parameters of the construct of interest or latent variable which is **talent retention**. The interrelated concepts of talent and talent management will be discussed. The review will consider talent retention as a closely related construct to employee retention and employee turnover, however, acknowledging that employee retention has unique measurement criteria and potentially distinct causal factors (Waldman & Arora, 2004:6). There has been extensive research on employee turnover but limited research that focuses exclusively on talent retention (Kontoghiorghes & Frangou, 2009:29).

Turnover is regarded as a measure of organisational effectiveness (Boshoff & Mels, 2000:255) with the implicit assumption being that a stable workforce is required in order to meet organisational objectives (Kontoghiorghes & Frangou, 2009:29). Morrell *et al.* (2001:220–222) provide a valuable framework of the type of information required in order to manage employee turnover effectively. The current research project will utilise the distinctions of constructs such as voluntary or involuntary turnover; top-performing or poor-performing employees; avoidable or unavoidable conditions; prevention models or control models of interventions as described by Morrell *et al.* (2001:220–222).

This literature review will provide a framework for understanding talent, talent management, turnover and retention, provide an overview of selected theory and research into turnover and retention; consider the costs and consequences of voluntary turnover, the value of increased employee retention, the causes of employee turnover and the measurement of turnover, retention and performance and the contextual influences on turnover and retention.

3.2.1 Talent and talent management

The academic literature shows a sharp increase in the popularity and frequency of reference to “talent management” between 1985 and 2008 in searches of the Emerald and Business Source Premier databases (Iles, Preece & Chuai, 2010:129-130) and the steepness of the increase in popularity suggest that “TM is a management fashion whose popularity has yet to peak, let alone fall” (Iles *et al.*,

2010:129). Despite the increased attention and focus on talent management in both the academic and practical management literature there does not appear to be consensus on even the most basic definitions of either “talent” or “talent management” (Gallardo-Gallardo, Dries, González-Cruz, 2013; Joyce & Slocum, 2012; Lewis & Heckman, 2006; Tansley, 2011).

Prior to the concept of talent being introduced into HRM or OB literature, talent was commonly associated with people with exceptional abilities and skills in the arena of sport, art, music or science (Gallardo-Gallardo *et al.*, 2013; Thunnissen, 2015). In the HRM and OB academic literature “talent” has been conceptualised in a variety of different ways:

- Talent may refer to the **people** (subject) which are the individual employees in an organisation or alternatively talent may refer to the **characteristics** of the people (object) which could include the abilities, knowledge and competencies of the employees (Gallardo-Gallardo *et al.*, 2013:327).
- Talent refers to the **strategic contributions** of employees (outputs) or conversely talent refers to **employee roles or positions** in the organisation such as executives or scarce skill professionals (Collings & Mellahi, 2009; Joyce & Slocum, 2012). For Collings & Mellahi (2009:305) the “... starting point here is identification of key positions rather than talented individuals *per se*”
- Talent is defined as **innate** which implies that only some people have it due to genetic ability or talent is **malleable** which implies that talent can be acquired or developed through training and practice (Gallardo-Gallardo, *et al.*, 2013:294). Talent could also be considered as a combination of innate abilities or aptitudes which can be developed into outstanding performance (Gagné, 2004; Ready & Conger, 2007; Tansley 2011).
- An **exclusive** definition of talent refers to a select group of high value, top performers or high potential performers in contrast with an **inclusive** definition of talent which refers to all the employees in organisation making up the human capital (Iles *et al.*, 2010:127).

- Talent is “competence x commitment x contribution” (Ulrich & Smallwood, 2012:60). Employees need to be **competent** and able to do the work by having the required knowledge, skills and values, however they also need to be **committed** and willing to do the work and believe that they are making a real **contribution** because they find meaning and purpose in what they do (Ulrich & Smallwood, 2012).
- Talent that refers to exceptional performance: “**Talent** designates the outstanding mastery of systematically developed abilities (or skills) and knowledge in at least one field of human activity to a degree that places an individual at least among the top 10 per cent of age peers who are or have been active in that field or fields” (Gagné, 2004:120).

Talented employees for the purpose of this thesis have initially been defined in section 1.9 as those employees considered essential to the ongoing success of the organisation and who help meet organisation objectives (Birt *et al.*, 2004). Due to the qualitative nature of the initial scale development process there is an understanding that the definition of talent will develop in the present study following the findings of the semi-structured interviews in the South African context in Chapter 4.

Following the diverse definitions of talent it follows that the **management of talent** will be based on how talent is defined. Tansley (2011:273) accentuates that the “the terminological ambiguity around working definitions of talent” make the definitions, research and practices of talent management more challenging. Thus if talent is regarded as inclusive and malleable, then it follows that all employees in the organisation will be considered to receive training and development to enhance the human capital of the organisation. Talent management then does not refer to anything different than strategic human resource management and is applicable to all employees (Gallardo-Gallardo *et al.*, 2013).

If talent is viewed as exclusive and malleable then only a select few high performers or high potential performers will be chosen for training and development

programmes such as leadership academies and talent management can be described as human resource development for a select group of employees (Iles *et al.*, 2010:127; Stahl, Björkman, Farndale, Morris, Paauwe, Stiles, Trevor & Wright, 2012).

If talent is viewed as innate and not malleable then it is possible that talent management strategies may be more related to recruitment, selection, retention, reward and incentives and less focussed on development. Organisations with this view will tend to “buy” the talent as opposed to “making” the talent (Cappelli, 2008:3) although this process may prove to be short-sighted and not in the best interest of the long term sustainability of the company (Cappelli, 2008).

The numerous talent management definitions available in the literature can range from simplistic to highly complex:

- “... talent management is simply a matter of anticipating the need for human capital and then setting out a plan to meet it” (Cappelli, 2008:[1]).
- Talent management can be defined as “a systematic and dynamic process of discovering, developing and sustaining talent” (Davies & Davies, 2010:419).
- “... we define strategic talent management as activities and processes that involve the systematic identification of **key positions** which differentially contribute to the organisation's sustainable competitive advantage, the development of a **talent pool** of high potential and high performing incumbents to fill these roles, and the development of a differentiated **human resource architecture** to facilitate filling these positions with competent incumbents and to ensure their continued **commitment** to the organisation.” (Collings & Mellahi, 2009:304).

The definition of talent management that has been put forward in Chapter 1 of this thesis is that **talent management** is a broad concept that involves the implementation of integrated human resource strategies to attract, develop, retain and productively utilise employees “with the required skills and abilities to meet current and future business needs” (Kontoghiorghes & Frangou, 2009:29).

3.2.1.1 Contextual considerations

The contextual influences on talent and talent management require further consideration. Talent has to be defined in **context** and refers to the fit between the individual and context, the type of work, culture or industry in which they work (Collings & Mellahi, 2009). The context of talent can be expanded to consider the community context and thus the political, social, religious, ethical and moral context within which the employee is required to work (Thunnissen, Boselie & Fruytier, 2013:330).

Gagné (2004:121) studied the “environmental catalysts”, “intrapersonal catalysts” and “chance” factors that influence the development of innate abilities into exceptional talent in the **Differentiated Model of Giftedness and Talent (DMGT)**. These factors expedite or impede the development of talent in an individual person. Chance factors refer to genetics or “accidents of birth”; environmental factors may include geography, socio-economic, significant persons, resources and events. Intrapersonal factors include physical requirements (strength, height, weight); mental characteristics such as temperament and personality and self-management factors such as awareness, motivation/volition (Gagné, 2004:128). Considering the myriad of factors in this model that can support or hinder the development of talent, contributes to the contextual understanding of talent and why talent management has the potential to be a complex process.

Tansley (2011) in her review of the definitions of talent concluded that talent is contextual and has to be defined considering a combination of individual characteristics that are required by different organisations:

- “behavioural aspects including attitude;
- knowledge;
- skills;
- competencies and cognitive capability” (Tansley, 2011:271).

One of the reasons that it may be so difficult to define talent is that the talent required for one role may not be the same as the talent required for a different role. Thus the most talented teacher may not be the ideal person to be promoted as the principal of a school (Davies & Davies, 2010). Being a talented teacher requires a unique combination of personality characteristics, knowledge and skills and these may not be the same attributes required in a principal position which involves considerably less teaching and more administration and people management skills.

Further contextual influences on turnover and retention research including the South African labour legislation are discussed in section 3.2.8.

3.2.1.2 Considering the goals of talent management

The goals of talent management should be aligned with the definitions of talent and talent management that an organisation subscribes to. The goals of talent management are most likely to emerge as organisation specific and influenced by the perspective of talent, needs of the organisation and the type of work required in the organisation (Tansley, 2011:270). Talent needs at a cooking school may differ significantly from those in the online information-technology environment (Tansley, 2011).

Although the main objective of talent management has generally been viewed as achieving organisation related goals such as profitability and competitive advantage (Cappelli, 2008, Birt *et al.*, 2004; Kontoghiorghes & Frangou, 2009; Joyce & Slocum, 2012) there has been a call for talent management to consider the alignment between organisational needs and interests and individual preferences (Boxall, 2013; Thunnissen, 2015).

Thunnissen, Boselie and Fruytier (2013:331) have proposed a “multi-level, multi-value” approach to talent management this includes goals at the individual,

organisation and societal level and considers both the economic value of talent management and a non-economic value which is set out in Table 3-1.

Table 3-1: A multilevel, multi-value approach to talent management

	Individual level	Organisational level	Societal level
Economic value of talent management	Financial rewards Job security	Profitability Organizational flexibility Efficiency and effectiveness Competitive position	Economic condition and (inter)national competitive position of an industry, region, or country
Non-economic value of talent management	Meaningful and challenging work Growth and social needs Fair and just treatment	Legitimacy	Social responsibility—i.e., contributing to the social/moral development of society

Source: Thunnissen *et al.* (2013:331)

The goals of talent management should move beyond profit and company performance by considering the well-being of the broader society while the focus of talent management should include organisational and individual levels while expanding to consider local, institutional; national, international and sector contexts (Al Ariss, Cascio & Paawe, 2014:177).

3.2.1.3 Considering the best practices in talent management

Lewis and Heckman (2006:140-141) identified that organisations tend towards three different perspectives on talent management:

- a new terminology for existing HR practices;
- practices that centre around succession planning for specific jobs utilising “talent pools”;
- practices that focus on managing talented employees which are high potential and high performing.

Collings and Mellahi (2009:305) add a fourth perspective on talent management which "... emphasises the identification of **key positions** which have the potential to differentially impact the competitive advantage of the firm".

When talent management is regarded as a new term for existing HR practices (Lewis & Heckman, 2006) then the best practice literature on **high performance work practices** which are identified as being beneficial to the organisation can be regarded as valuable (Kontoghiorghes & Frangou, 2009). Huselid (1995:645) included 13 high performance work practices and found that organisations that utilised these practices had higher financial performance, lower turnover and higher productivity. Boxall and Macky (2009:7) identify a need for talent management to focus on high performance employment practices and work practices. **High performance employment practices** include recruitment, selection, deployment, motivation, consultation, negotiation and termination practices while **high performance work practices** include the organising and structuring of the work itself. Pfeffer (1995:57) identified 13 best practices in HRM and 3 additional principles for effective organisations which only correspond with Huselid (1995:645) in the following five practices: selective recruitment, training and skill development, incentive pay/compensation, information sharing and participation.

Best practices for talent management proposed by Ready and Conger (2007:4) are to make an organisation a "talent factory" and to build the talent pool of the organisation by linking "functionality" and "vitality". "**Functionality**" includes "sourcing, assimilation, development, deployment, performance management, rewards, engagement and retention". The concept of "**vitality**" refers to committed, engaged and accountable groups in the organisation specifically the "top executive team, talent pool, line management, HR/talent staff" (Ready & Conger, 2007:4).

Joyce and Slocum (2012:186) conducted research on 200 organisations from 40 industries and identified that in order for talent management to meet the organisational goals of effectiveness based on total returns to shareholders (profitability) it is necessary that talent practices should build and sustain

organisation **strategy, structure, culture and execution**. Talent practices by themselves do not produce performance but together with **leadership, innovation and growth** can contribute significantly to effective organisations.

Cappelli (2008:4) proposes four principals of talent management based on the principals of supply change management which are:

- “make and buy to manage risk” by developing your own internal staff and recruiting from outside the organisation to manage risk;
- “adapt to the uncertainty in talent demand” by building talent pools or sub-divide development programmes into smaller sections;
- “improve the return on investment in developing employees” by getting employees to share in the cost of development;
- aim for a balance between “employer-employee interests”.

Research involving the talent management practices of 33 multi-national companies from 11 different countries led Stahl *et al.* (2012:25-26) to identify the six best **principals** of talent management as opposed to best practices:

- alignment of talent management with organisational strategy;
- “internal consistency” between the organisations talent management practices which ideally should include recruitment and selection, development and training, performance management, compensation and rewards, retention and talent review;
- “cultural embeddedness” with an emphasis on the transfer of organisation culture and values;
- the involvement of all levels of management;
- a balance between global and local talent needs;
- “employer branding by differentiation” from competitors.

In summary, reviewing the existing academic research it does not appear that there is a single set of accepted best practices for talent management. It appears that the

“best practices” in talent management should refer to the “best fit” between a specific organisation and the associated context (Al Ariss *et al.*, 2014:174).

3.2.2 The link between turnover and retention research

Retaining skilled workers is regarded as a critical and strategic human resources issue (Tanova & Holtom, 2008:1553). In order to “prosper and grow organisations need to be able to retain current employees and to attract a steady supply of new ones” (Cascio, 2006:44). The majority of the research and theoretical work in the field of turnover and retention has focused on employee turnover with the original assumption being that if researchers can identify why employees leave they will be able to identify why employees stay (Harman *et al.*, 2007:51–53). The prevailing research methodology has held that if a variable is negatively related to turnover through empirical research then a positive impact on retention is assumed (Steel, 2002:348). Retention research often uses measures of intention to quit or actual voluntary turnover and then reports associations with constructs that are theoretically linked to retention. Examples of retention constructs include “affective, continuance and normative” commitment which can be regarded as negative indicators of turnover (Allen & Meyer, 1990:14).

However, there is an increasing awareness that employee retention is not simply the inverse of employee turnover and the reasons employees stay may be different from the reasons employees leave (Harman *et al.*, 2007; Tanova & Holtom, 2008). Due to the scarcity of actual employee retention research where cohorts of individuals have been monitored over time, turnover research continues to inform our current understanding of employee retention (Steel, 2002; Waldman & Arora, 2004). In the South African context, a research study by Martin and Roodt (2008) utilised the same cohort of individuals eighteen months apart and found reduced organisational commitment over time and increased withdrawal intentions.

During this stage of the research (qualitative study), the researcher was not yet aware which retention constructs would emerge during item construction or factor analysis but intention to quit was intended to be used as the outcome variable.

3.2.3 Clarification of turnover constructs

In order to accurately evaluate turnover statistics in retention research, it is important to obtain clarity on various turnover constructs which will be discussed in this section.

3.2.3.1 Distinguishing voluntary and involuntary turnover

Turnover has been traditionally viewed as a negative phenomenon that needs to be managed in order for the organisation to remain effective (Shaw & Gupta, 2007). There are two types of turnover: voluntary and involuntary. When conducting research into voluntary turnover the aims are to understand, predict, prevent and effectively manage turnover (Harman *et al.*, 2007). Involuntary turnover is controlled by the organisation whereas voluntary turnover is within the control and free will of the employee. Thus the causes and consequences of involuntary turnover are quite different to the causes and consequences of voluntary resignations (Shaw, Delery, Jenkins & Gupta, 1998). Hay (2002) raises a concern that failure to manage poor-performing employees through dismissals may actually lead to voluntary resignation of top-performing employees. Poor-performing employees who “shirk” work responsibilities place an unfair burden on top-performing employees that in turn may lead to resentment, accumulated dissatisfaction and eventual resignations of top-performing employees (Hay, 2002:55).

When considering research findings on factors that correlate with employee turnover, it becomes important to establish whether aggregate measures of turnover were used or if a distinction was made between voluntary and involuntary turnover. In organisations the total separation rate or total turnover rate is frequently comprised of figures including both voluntary and involuntary turnover (Bontis & Fitz-enz, 2002). For example, Huselid (1995) used a total turnover rate to determine the interaction between employment practices and organisation productivity. In contrast, Shaw *et al.* (1998) utilised the distinction between voluntary and involuntary turnover in their study of the effect of HR practices on turnover and the authors confirm that the

findings at organisational level differ for resignations and involuntary terminations. In this study the distinction between voluntary and involuntary turnover will be considered in the contextual framework and generation of items.

3.2.3.2 Distinguishing functional and dysfunctional turnover

Traditionally all turnover was considered a disadvantage to the organisation and low rates of turnover were preferred to high rates of turnover (Huselid, 1995). There is increasing awareness that turnover is only dysfunctional if higher performers leave and poor performers remain behind (Allen & Griffeth, 1999). Organisations especially need to focus on managing dysfunctional turnover in order to prevent the loss of top-performing employees (Allen & Griffeth, 1999). Poor-performing employees are not regarded as a productive asset and the voluntary resignation of ineffective workers can actually be of benefit to the organisation (Morrell *et al.*, 2001). Turnover is thus regarded as functional when poor-performing employees are leaving and top-performing employees are staying (Allen & Griffeth, 1999).

Functional turnover can help the organisation rid itself of those employees who are not a good fit in the organisational culture or where the worker and job are not a good match (Chang & Wang, 1995). Voluntary turnover can get rid of those employees who are incompetent, unproductive or have grievances (Morrell *et al.*, 2001).

Functional turnover may provide an opportunity to "... upgrade the quality of the work-force" (Allen & Griffeth, 1999:526). The voluntary loss of poor performers may actually improve the functioning of the organisation by creating space for more productive employees (Shaw & Gupta, 2007). Functional turnover prevents a situation where the turnover is so low that the workforce or employees may stagnate (Whitt, 2006). New employees can be good for the health of the organisation as they could contribute new, inspirational and creative ideas (Robison, 2008).

There are also organisations that are comfortable with allowing the ebb and flow of employee turnover cycles to manage labour supply and demand so that

organisations are not overstaffed during quiet times of the year or have expensive overheads to maintain (Smith *et al.*, 2004:375–376).

Somaya and Williamson (2008:31) suggested that letting employees leave on good terms can have ‘social capital’ benefits especially if employees leave to customer companies, partners and suppliers. Social capital has the potential benefit of promoting customer goodwill and strengthening or developing client relationships. However, if the employee is leaving to a competitor the turnover should not be regarded as functional or beneficial (Somaya & Williamson, 2008). The present research considers whether the organisations distinguish between functional and dysfunctional turnover and how this distinction is made.

3.2.3.3 Distinguishing avoidable and unavoidable turnover

Turnover can be regarded as avoidable if the organisation could have done something to prevent the employee from leaving (Morrell & Arnold, 2007). At times there may be nothing that can be done to stop a specific employee from leaving but information gathered about the reasons for resignations may assist in identifying avoidable turnover and implement interventions in future that could prevent voluntary turnover (Morrell *et al.*, 2001). Avoidable turnover can be identified retrospectively in one sample of employees who have already resigned with interventions then developed for employees still currently employed (Morrell & Arnold, 2007). Avoidable turnover could also possibly be identified in employees who have expressed turnover intentions but have not yet resigned.

Unavoidable turnover would be voluntary resignations due to reasons over which the organisation has no control which are usually non-work related. For turnover that is unavoidable the organisation’s focus should be to identify strategies that will minimise the disruption and inconvenience of the departure (Morrell *et al.*, 2001). At times the best course of action may be to manage the event after the fact (Lee, Mitchell, Wise & Fireman, 1996). In the present research it is proposed to consider whether the organisations distinguish avoidable from unavoidable turnover and how this distinction is made.

3.2.4 Overview of theory and research into employee turnover and retention

Traditionally it was assumed that employees leave due to negative job attitudes and stay due to positive job attitudes with the assumption being that in order to retain employees, organisations should focus on building employee satisfaction (Harman *et al.*, 2007:51). It has been over 50 years since March and Simon (in Tanova & Holtom, 2008:1554) introduced their theory of voluntary turnover which describes how perceived ease of movement and perceived desirability of movement determine whether employees will look for a new job. The March and Simon theory forms the cornerstone of research into voluntary employee turnover and perceived ease of movement has evolved into research on job availability while perceived desirability of movement has evolved into research on job satisfaction (Lee *et al.*, 1996:6).

There has been extensive research into voluntary turnover with most research being on the individual level and fewer studies focused on the organisational level (Shaw *et al.*, 1998:511). Research over the last 50 years has focused on the following elements:

- Research into availability of job alternatives linked to voluntary turnover including labour supply and demand, job search, job opportunity, pay satisfaction, performance and other labour market factors (Morrell *et al.*, 2001:228). O'Reilly (1991) refers to these research factors as external to the employee and research factors regarding the availability of alternative jobs have been described as “pull” factors (Lee & Mitchell, 1994:51).
- The validation of conceptual and empirical models that involve job attitudes and voluntary resignations at the individual level (Lee *et al.*, 1996:33). Constructs internal to the employee have been described as “push” factors (Lee & Mitchell, 1994:51) or “psychological” factors (O'Reilly, 1991:439). Lee and Mitchell (1994:52) caution that psychological studies explain less than 15% of the variance in voluntary employee turnover.
- Research that highlights the progression of job satisfaction or dissatisfaction into withdrawal behaviour, especially voluntary resignations. Despite extensive

research it appears that the “...causal mechanisms translating job dissatisfaction into quits remains ambiguous” (Hom & Kinicki, 2001:975).

- Empirical studies that attempt to find causal determinants or antecedents to either turnover or intention to quit, thus attempting to predict turnover on the individual level (Morrell *et al.*, 2001). Due to the cross-sectional nature of most of these empirical studies they cannot predict turnover but can only establish an association or relation between the variables that are measured at the same time (Morrell & Arnold, 2007).

Morrell *et al.* (2001:219) conclude that both labour-market theories and psychological theories have been “...unable to explain and predict turnover adequately...” and believe there is a need for new theory. Lee and Mitchell (1994) proposed that models of turnover should consider factors internal to the individual such as psychological processes as well as factors external to the individual such as labour-market factors. Considering both “push and pull” factors would be more likely to produce valuable insights into voluntary turnover (Lee & Mitchell, 1994:52).

Research using data from employees who have already left the organisation is providing new insights and contributing to theory building and model development in the field of turnover (Lee *et al.*, 2008). Research studies are providing indications that voluntary resignation is not always the result of a rational decision-making process (Lee *et al.*, 1996). Based on psychological image theory it appears that individuals compare incoming information to personal, internal images based on values, goals or strategic ideas (Harman *et al.*, 2007). Lee and Mitchell (1994:60) developed an “Unfolding Model of Turnover” that proposes that employees may follow five different psychological paths when they choose to leave the organisation (Harman *et al.*, 2007:52). In Table 3-2 the five different turnover paths are summarised and linked to the applicability of retention strategies (Lee & Mitchell, 1994:60).

Table 3-4: Unfolding Model of Turnover related to retention strategies

Turnover Path and type of shock	Decision speed	Avoidable turnover	Retention strategy applicable
Path 1: non-work related shock	Automatic – almost immediate	No	Manage afterwards Keep track of resignation reasons
Path 2: Negative organisational shock	Quick	Unlikely	Manage afterwards Keep track of resignation reasons
Path 3: Shock with existing dissatisfaction and investigation of job alternatives	Controlled	Possible	Identify shock and dissatisfaction reasons Attempt to manage shock and remedy dissatisfaction to prevent turnover
Path 4a No shock with existing dissatisfaction, no investigation of job alternatives	Controlled	Possible	Identify dissatisfaction Attempt to remedy dissatisfaction and prevent turnover
Path 4b No shock with existing dissatisfaction and investigation of job alternatives	Controlled	Possible	Identify dissatisfaction Identify if job search has been initiated Attempt to remedy dissatisfaction and prevent turnover

Source: Adapted from Harman *et al.* (2007:52); Lee *et al.* (1996:28–33) and Morrell *et al.* (2001:221–222).

Employees may resign immediately and unexpectedly due to psychological “shocks” that they receive (Lee & Mitchell, 1994:51). Retention strategies are not applicable if the shock is outside the organisation’s control and the reason for resignation is unavoidable. For example, the shock of a non-work factor such as spousal relocation is outside the control of the organisation and the employee could resign immediately following the psychological shock event (Lee *et al.*, 1996). Shocks due to non-work factors in which resignation is almost immediate are allocated to Path 1 in the “Unfolding Model of Turnover” (Lee & Mitchell, 1994:60).

In addition, the “Unfolding Model of Turnover” describes Path 2 as a situation where negative organisational shocks such as being bypassed for a promotion may prompt a direct, quick resignation (Lee & Mitchell, 1994:84–85). Due to the timing between

the event and the immediate resignation a manager may be unable to alter the resignation decisions or discourage the employee from leaving (Lee *et al.*, 1996:33).

Lee and Mitchell (1994:84–85) identify Paths 3 and 4 as voluntary turnover processes that unfold at a slower pace and are potentially avoidable. In Path 3 the individual is confronted with a psychological shock, is relatively dissatisfied with their job and may search for other job alternatives. In Path 4a there is no psychological shock but the employee is dissatisfied with their job and leaves without active job search while in 4b low job satisfaction may lead to active job search and intention to leave (Harman *et al.*, 2007:52; Lee & Mitchell, 1994:60).

Retention strategies are applicable to avoidable, voluntary turnover and where appropriate, well-timed interventions could encourage the employee to stay. Avoidable turnover can be managed through “prevention” models. Where turnover is not avoidable, a manager needs to minimise the disruption caused by the resignation instead of trying to prevent it (Morrell *et al.*, 2001:221). Lee *et al.* (2008:667) proposed that different types of turnover require different types of retention strategies. Harman *et al.* (2007:54) theorised that organisational behaviour constructs such as job embeddedness may be able to “buffer the effects” of the psychological shocks referred to in the Unfolding Model of Turnover, although this has yet to be established.

In this study, the distinction between “push and pull” factors, work related and personal factors that can affect retention and turnover will be considered in the theoretical framework and during item generation.

3.2.4.1 Causes of voluntary turnover

Research into the causes of voluntary turnover in individuals has been reviewed in various other studies (Morrell & Arnold, 2007; Morrell *et al.*, 2001; O’Reilly, 1991). While not diminishing the importance of these antecedents to turnover they will not be reviewed comprehensively due to the intention of this research to develop a talent retention diagnostic instrument and, furthermore, a review of the existing literature

findings on the causes of voluntary turnover could be a thesis in itself. Although intention to quit and withdrawal behaviour refer to the same construct in this research, the researchers' original terminology has been used in reviewing the causes of voluntary turnover. The antecedent variables are either retention or turnover constructs. A summary of the most salient research considered in this study is presented in Table 3-3:

Table 3-5: Causes of voluntary turnover

Turnover or Retention Construct	Outcome Variable	Research study result
Job dissatisfaction induced by inter-role conflict (work-family tensions and quality of life)	Withdrawal intentions Actual voluntary turnover	Job dissatisfaction caused by employee perception of inter-role conflict positively associated with withdrawal intentions and actual turnover (Hom & Kinicki, 1991)
Affective commitment – employee wants to stay in organisation	Turnover	Commitment is regarded as a negative indicator of turnover (Allen & Meyer, 1990:14–15)
Affective commitment to organisation	Voluntary turnover	Low commitment associated with voluntary turnover (Boshoff & Mels, 2000:255)
Affective commitment to supervisors	Turnover intentions and actual turnover	High affective commitment to supervisors negatively linked to turnover intentions and actual turnover (Vandenberghe & Bentein, 2009)
Affective commitment to co-workers	Turnover intentions	High affective commitment to co-workers has a strong negative relationship with intention to quit (Meyer & Allen, 1997)
Normative commitment – employee feels obliged to stay in organisation	Turnover	High normative commitment makes turnover less likely (Allen & Meyer, 1990).
Continuance commitment – will cost the employee too much to leave the organisation	Turnover	High continuance commitment is seen as a negative indicator for employee turnover. (Allen & Meyer, 1990)
Perceived organisational support (POS) – perception that organisation is supportive, caring and values its employees	Voluntary turnover	POS is negatively related to actual voluntary turnover (Allen, Shore & Griffeth, 2003)

Turnover or Retention Construct	Outcome Variable	Research study result
Job embeddedness – represents a complex web of relationships between an individual, other people, the organisation and the community usually described by links, fit and sacrifice	Voluntary turnover	Job embeddedness is negatively linked to actual voluntary turnover (Tanova & Holtom, 2008). Thus high job embeddedness is linked to low turnover
Mood: negative affect	Withdrawal behaviour	Negative affect is positively linked to withdrawal behaviour (Pelled & Xin, 1999)
Negative perception regarding performance appraisals – regarded as unfair, discriminatory and not applied consistently	Turnover intention	Negative perception regarding performance appraisals implies the employee is likely to express turnover intentions (Pienaar & Bester, 2008)
Satisfaction with performance appraisals	Intention to quit	Satisfaction with performance appraisals is linked to lower turnover intentions (Kuvaas, 2006; Du Plessis, Stanz & Barkhuizen, 2010)
Work commitment which includes commitment to the organisation, occupation, union and job	Withdrawal intentions from organisation, from job and from occupation	Work commitment together predicts turnover intentions better than any of the single commitment forms. Commitment forms have different outcomes with the different types of withdrawal intentions Job satisfaction, strongly and negatively linked to job withdrawal intentions and also with organisation withdrawal intentions (Cohen, 1993)
High performance work practices in organisations (such as formal performance appraisals, linking performance appraisals to employee compensation; information sharing processes)	Actual turnover	Reduction in actual turnover in organisations where high performance work practices are implemented (Huselid, 1995)
Organisational climate – positive perceptions of organisation	Turnover intentions	Positive perceptions of organisation climate linked to lower turnover intentions (Martin, Jones & Callan, 2005)
Participative decision-making – involves employees in decision-making in teams or in supervisor-employee relationship	Intention to leave	Negative relationship between participative decision making and intention to leave (Ito & Brotheridge, 2005)
Supervisory career support – includes advice, information and encouragement	Intention to leave	Negative relationship between supervisory career support and intention to leave (Ito & Brotheridge, 2005)

Turnover or Retention Construct	Outcome Variable	Research study result
Career adaptability – employee is adaptable and has high employability in other roles	Intention to leave	Positive relationship between career adaptability and intention to leave (Ito & Brotheridge, 2005). Thus career adaptability can contribute to potential turnover

The above table is by no means comprehensive as turnover intentions and actual turnover as outcome variables are well represented in the academic literature (Morrell & Arnold, 2007:1685; Morrell *et al.*, 2001:224-225; O'Reilly, 1991:442). Research specific to the South African context is discussed in section 3.2.7. The causes of voluntary turnover identified in the literature that had a specific influence on item generation in this study are discussed in section 4.8.2: Scale development process – Step 2 – Item Generation.

Where turnover cannot be prevented the costs and consequences of voluntary turnover need to be considered.

3.2.5 Costs and consequences of voluntary turnover

Voluntary turnover is regarded as potentially destructive as the organisation cannot control when the employees leave or which employees leave thus taking the organisation by surprise (Boshoff & Mels, 2000). In positions where the training period is extensive and the required skills levels are high and scarce, employees who leave result in a loss of investment to the organisation and are expensive to replace (Shaw & Gupta, 2007). In the following section the impact of turnover is described in terms of direct economic costs and indirect or intangible consequences when employees voluntarily resign from the organisation.

3.2.5.1 Economic costs of voluntary turnover

Economic costs of turnover are used to quantify the "... loss of human capital ..." (Somaya & Williamson, 2008:29). Economic costs of turnover can assist in raising awareness of the actual extent and significance of employee turnover on the

finances of an organisation (Smither, 2003:19). In addition, economic costs can be used to justify the expenses involved in retention strategies or to calculate “return on investment” for human resource interventions (Bontis & Fitz-enz, 2002:223; Whitt, 2006:237). Table 3-3 contains a description of the types of quantifiable economic costs that have been directly measured for voluntary employee turnover research.

Table 3-6: Quantifiable costs of voluntary turnover

Type of Costs	Description	Research reference
Separation costs	Costs involved in the leaving process: Exit interviews Administrative functions Separation pay Costs of stopping benefits	Pinkowitz, Moskal and Green (2009) Whitt (2006:236) Naves (2002:67)
Vacancy costs	Increased overtime for employees who remain behind	Pinkowitz <i>et al.</i> (2009)
	Labour cost of hiring temporary employees	Whitt (2006:236)
	Costs of temporary placement agencies	Smith <i>et al.</i> (2004:377)
Replacement costs	Advertising for applicants (advertisement, agency costs and employee time)	Pinkowitz <i>et al.</i> (2009) Smith <i>et al.</i> (2004:377) Naves (2002:69)
	Entrance interviews (number of interviews x cost per interview x time allocation per interview) Travel costs for applicants and interviewers	Pinkowitz <i>et al.</i> (2009) Naves (2002:69)
	Screening or testing of applicants Psychometric testing or aptitude testing Physical ability assessments Pre-employment medical exams Drug testing Skill or knowledge testing	Taylor <i>et al.</i> (2006:646) Smither (2003:20) Naves (2002:69)
	Post-employment administrative costs: payroll, benefits initiation, policy costs, employee records updates and verifications (x number of hours x cost per hour)	Pinkowitz <i>et al.</i> (2009)
Training Costs	Formal training costs: Travel/training expenses Post-employment information including costs of manuals, brochures and policies Induction Programme	Pinkowitz <i>et al.</i> (2009) Taylor <i>et al.</i> (2006:646)

Type of Costs	Description	Research reference
	Informal training costs: costs per hour of other employees/managers removed from normal duty to orientate new employee to projects or work methodology	Pinkowitz <i>et al.</i> (2009) Morrell and Arnold (2007:1684)
Performance Differential	Difference between productivity measures of previous/current employee, for example sale of previous employee per month compared to sales of new employee during learning curve	Pinkowitz <i>et al.</i> (2009)

Source: Adapted from Pinkowitz, Moskal and Green (2009).

The economic costs of turnover can be measured and quantified, however, there are other costs that result from voluntary turnover which are not as easy to measure and are discussed in the following section.

3.2.5.2 Intangible costs of voluntary employee turnover

The intangible costs or psychological costs associated with the loss of top-performing employees are difficult to measure and have mostly been determined through self-report studies or studies involving key participants (Morrell & Arnold, 2007). Examples of intangibles include disruption of existing projects, loss of continuity, loss of knowledge, damage to morale and disruptions to the productivity of the work group (Smith *et al.*, 2004). In addition, low employee productivity or neglect of duty in the period of time before the employee leaves is difficult to quantify (Boshoff & Mels, 2000).

The loss of knowledgeable and experienced employees is a disadvantage to the organisation (Pienaar & Bester, 2008). Employees can be viewed as human capital and the loss of skilled workers as the process where "... intellectual capital walks out the door" (Bontis & Fitz-enz, 2002:226). The loss of talented employees to competitors may be to the advantage of competitors, strengthening the competitors' position and customers that were loyal to the departing employee may also choose to move on (Netswera *et al.*, 2005). The situation is aggravated when employees take with them company specific knowledge or trade secrets that may even be used

against the organisation in the future (Bontis & Fitz-enz, 2002; Somaya & Williamson, 2008).

During the vacancy period there are possible "... lost profit opportunities ..." (Smither, 2003:20) which appear difficult to quantify but may affect team or group performance. During the vacancy period there are added responsibilities for managers and co-workers (Boshoff & Mels, 2000). These added responsibilities will not necessarily stop when the new employee is replaced as informal training, orientation and socialisation of the new employee may require additional energy and effort from existing employees (Morrell & Arnold, 2007). Cascio (2006) recommends that it is more cost effective to select employees who can be productive almost immediately rather than relying on training programmes after employment.

3.2.5.3 The value of increased employee retention

Employee retention of top-performing employees can add value through increased experience, reduced turnover costs and an increase in measures of performance. Whitt (2006:235) proposes that increased employee retention increases employee experience. In turn increased employee experience leads to an increase in employee productivity and subsequent increase in employee performance. During the introduction phase of an employee's employment they are regarded as inexperienced and unprofitable (Smither, 2003:21). Lower employee performance can be measured during the initial learning period (Whitt, 2006:236).

For the most part the value of increased employee retention is measured through the savings from reduced turnover. High performance HR practices, have been correlated with 40% less employee turnover than firms without high performance HR practices (Huselid, 1995:656). Examples of these high performance HR practices include formal performance appraisals, linking performance appraisals to employee compensation, information sharing programmes and profit sharing plans (Huselid, 1995).

Cascio (2006:43) quantifies employee productivity by using measures such as sales per employee or number of innovative strategies introduced by employees. Once employee productivity is established it is possible to calculate the savings associated with increased retention rates (Cascio, 2006:44).

The intangible costs associated with turnover have also been used to describe the benefits of increased employee retention such as retention of knowledge, retention of skills, preserving continuity of work-group processes; preserving customer relationships (Kontoghiorghes & Frangou, 2009:29; Tanova & Holtom, 2008:1566).

3.2.6 Measurement of actual turnover or intention to quit

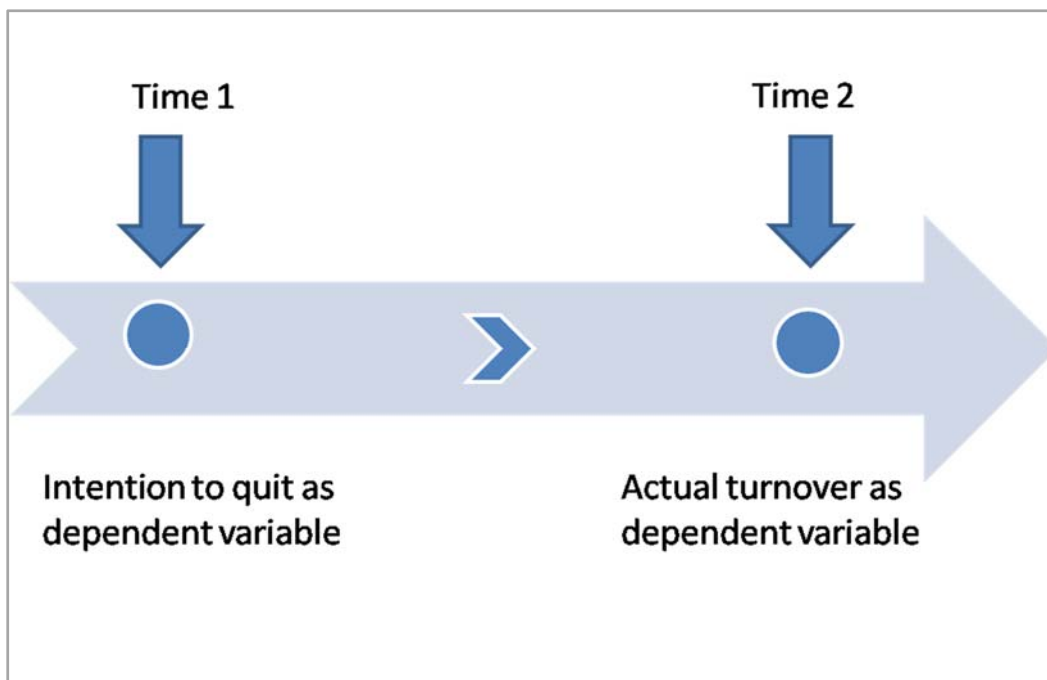
Research studies into turnover either use actual turnover (employees who have already left the organisation) or intention to quit (employees who state that they intend to leave) as measurement indicators (Morrell *et al.*, 2001:224–225). Researchers have found that turnover intentions can be positively related to actual turnover behaviour (Allen *et al.*, 2003) but the two variables cannot assume to measure turnover in the same way. There are contradictory findings when considering an independent variable such as perceptions of organisational support (POS) that indicate significant differences when the outcome variable is actual turnover as opposed to intention to quit (Zhao *et al.*, 2007:647). The above authors found POS significantly related to intention to quit but not related to actual turnover.

Actual turnover figures are at times preferred to intention to quit figures as the latter represent the “subjective probability” than an employee will leave (Zhao *et al.*, 2007:647) while actual turnover figures provide a more accurate representation of employee outcomes (Tanova & Holtom, 2008:1566). However, measuring intention to quit can have intrinsic value as it may indicate those employees who have lost motivation, are no longer loyal to the company or willing to give extra effort in their jobs and those employees who would leave at the earliest opportunity once labour market factors allow (Frank *et al.* 2004). Intention to quit figures may thus provide warning of non-committed “employees who would rather work only with their bodies and check their minds at the door” (Pfeffer, 1995:68).

Tracking those employees who intend to quit but have stayed in the organisation can highlight employees who are disengaged from their work (Branham, 2005) or possibly experiencing burn-out at work (Hughes, 2001). Teachers who would like to leave their jobs but end up staying in their jobs due to limited alternative options are often emotionally depleted and detached which in turn has negative consequences for the pupils and the education system (Hughes, 2001).

Intention to quit is used in cross-sectional studies to examine a potential relationship between an independent variable such as “satisfaction with performance appraisals” and intention to quit as the dependent variable (Kuvaas, 2006:516). Employees who intend to quit may still resign at some point in the future or they might choose to stay therefore longitudinal studies or repeat episodic measures of the variables being examined should use actual turnover figures at a later stage (Morrell & Arnold, 2007:1686). In Figure 3-1 an attempt is made to explain how intention to quit is measured at Time 1 and actual turnover figures are used at Time 2 and how both intention to quit and actual turnover may be used in the same study.

Figure 3-1: Intention to quit and actual turnover as dependent variables



Source: Author's own.

3.2.7 Ideal measures in turnover and retention research

Based on the review of the literature conducted, it was possible to identify measures of turnover and retention that the researcher should endeavour to obtain clarity on when undertaking research in the field. These are presented below.

3.2.7.1 Measurement of base rate of turnover

Traditional organisational level turnover has been measured with the answer to the question “What is your average annual turnover?” (Huselid, 1995:651). This is an aggregate measure that does not distinguish voluntary turnover from involuntary turnover. Turnover is usually an “annual spot check” conducted yearly on the organisation using averages (Waldman & Arora, 2004:6). Turnover is traditionally expressed as the total number of actual employee terminations divided by the average number of employees in a fixed period of time such as a 12 month period (Waldman & Arora, 2004:6; Whitt, 2006:236).

When measuring the turnover of an organisation, voluntary turnover should ideally be distinguished from involuntary turnover and then turnover rates can be calculated for voluntary turnover. The graphical representation of voluntary turnover as a measurement construct is depicted in Figure 3-2.

Figure 3-2: Base rate for voluntary employee turnover

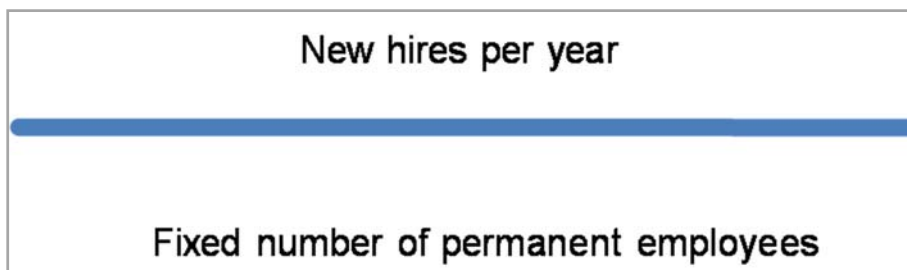


Source: Adapted from Waldman and Arora (2004:6).

3.2.7.2 Measurement of rate of new hires

In addition to the base rate of employee turnover it is important to distinguish the rate of new hires per year and whether new hires are intended to replace workers who have left the company or whether new hires indicate organisational expansion and growth (Whitt, 2006:236). Pinkowitz *et al.* (2009) described an example where 75% of the demand for new employees is simply to replace workers who have already left the organisation. In Figure 3-3, the formula that can be used for calculating the base rate of new hires for an organisation is depicted.

Figure 3-3: Rate of new employees per year



Source: Whitt (2006:236).

3.2.7.3 Measurement of turnover of new employees

Cascio (2006:51) reported that high turnover of new employees is most likely within the first 90 days of employment. Annual turnover figures can be quite different from the turnover figures for new hires. Waldman and Arora (2004:7) cite research findings where the annual turnover is at 21% but turnover of new hires is 41.3% within the first year of their employment. In order to accurately measure and monitor the voluntary resignations of new hires the following formula can be used as described in Figure 3-4.

Figure 3-4: Turnover of new employees within the first year



Source: Waldman and Arora (2004:7).

3.2.7.4 Additional organisational turnover measures required

Morrell and Arnold (2007:1686) recommended that a detailed profile of leavers be obtained. The detail of required to be measured and monitored could include:

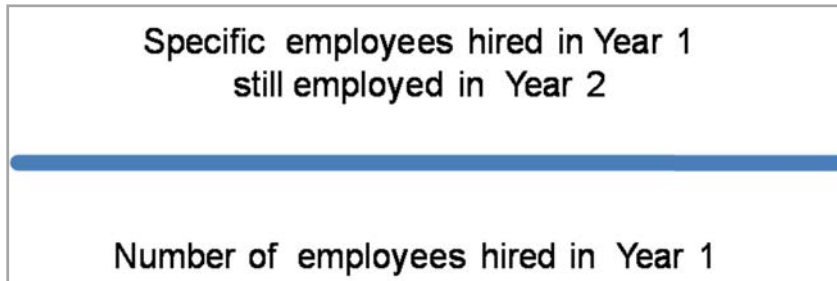
- determining **which** employees are leaving by capturing biographical information; job categories; departmental information (Morrell and Arnold, 2007);
- determining **when** employees are leaving, for example time of year, post-maternity leave, after studies are completed; (Waldman & Arora, 2004:6).
- determining **how long the employees have stayed** by recording the number of years' service prior to resignation, for example, monitoring the number of resignations per year of service grouped into employees with less than or more than one years' service (Naves, 2002:67);
- evaluating **how much knowledge** the employees are taking with them such as scarce skills or organisation specific knowledge (Tanova & Holtom, 2008);
- evaluating the **cost and/or impact of loss** to the organisation (Waldman & Arora, 2004:6).

3.2.7.5 Measurement of retention rates

Retention figures are not simply the inverse of turnover figures. Retention figures reflect specific employees hired in Year 1 that are still employed in Year 2. Retention figures therefore reflect the experience levels of distinct cohorts of employees (Waldman & Arora, 2004:6). In a longitudinal study retention rates will follow specific employees over time. Retention figures can be stable or declining but never greater

than 100% and never less than zero (Waldman & Arora, 2004:8–9). Net retention rates are depicted in Figure 3-5.

Figure 3-5: Net retention rate



Source: Waldman and Arora (2004:8).

3.2.7.6 Measurement of performance

Performance is an indicator of how well employees are helping the organisation meet its business objectives (Allen & Griffeth, 1999:527). A performance appraisal is a method of evaluating and monitoring the value that each employee adds to the organisation (Shaw *et al.*, 1998:514). Standards of performance for individuals can be measured objectively by using traditional productivity measures as indicated in the following examples by Whitt (2006:237):

- number of calls answered in an hour;
- number of contacts handled in a day;
- sales volumes for the day;
- revenue earned per hour;
- number of problems solved per day.

Standards of performance can also include quality or innovation measures (Cascio, 2006:44). Standards of performance can be measured through self-ratings and supervisor ratings (Allen & Griffeth, 1999:528) and/or peer ratings (Kontoghiorghes & Frangou, 2009:31). Performance measures can be linked to in-role behaviours that are recognised by the organisations' formal reward system or extra-role behaviours such as organisational citizenship behaviours (Zhao *et al.*, 2007:652). For the purposes of this study it will be important to determine the standards of performance

used in the organisations in the sample and how exactly top-performing employees are identified. It also remains important to determine whether or not the performance appraisal system is regarded as fair and transparent by employees as this may affect employee retention and turnover (Pienaar & Bester, 2008:32). Whitford and Coetsee (2006:70) proposed that the underlying performance management philosophy of the organisation towards talented individuals needs to be specified before effective performance management criteria can be applied.

3.2.8 Contextual influences on turnover and retention

The environmental and contextual factors at the time when research is conducted may influence the decisions of employees to stay or leave their current position or leave the organisation. Contextual influences on turnover and retention were explored using different perspectives:

- review of existing theory and academic research both international and national;
- influence of the recession and socio-economic downturn;
- industry differences as contextual factors;
- intra-organisational differences;
- unique contextual factors: South African Labour Legislation.

3.2.8.1 Academic research and theory on contextual influences

Attempts to explain voluntary turnover by examining external issues such as labour market factors have been a longstanding tradition in turnover research (Morrell *et al.*, 2001:219). Labour market and external factors have been described as “pull factors” and include the availability of alternative jobs (Lee & Mitchell, 1994:51). The availability of alternative jobs can represent “ease of movement” which can be defined as employees’ perceptions of whether or not it is easy to move or change to another job (Lee *et al.*, 2008:651). Labour market studies have produced “...moderately strong predictive results for aggregates of employee turnover rates explaining up to 50% of the variance ...” at organisational level (O’Reilly, 1991:442). The availability of supply and demand for labour can be viewed as an antecedent to turnover (Lee & Mitchell, 1994:51). Labour market factors are viewed as moderating

employee turnover as high unemployment rates would imply that fewer job alternatives are available and that leaving the job is perceived as costly (O'Reilly, 1991:442). Labour supply and labour demand can potentially be measured using various predictors (Allen & Griffeth, 1999:525):

- national employment or unemployment rates;
- regional employment or unemployment rates;
- industry specific unemployment rates (internationally benchmarked or nationally benchmarked);
- scarce skills required within a specific industry (identified by levels of advertised positions);
- scarce skills required within a specific organisation or department.

Due to the scarcity of local South African benchmarking information, local studies often need to rely on international benchmarking studies in academia from the United Kingdom or Europe (Jongbloed, 2012; Metcalf, Rolfe, Stevens, & Weale, 2005). In the absence of local benchmarking information, South African studies to determine turnover or retention of scarce skills are guided by information from the Department of Labour on which sectors of the market have the highest proportion of vacancies (Netswera *et al.*, 2005).

3.2.8.2 Influence of recession and socio-economic downturn

Current socio-economic realities need to be incorporated into effective contextual management of turnover, as return on investment and cost of retention strategies become increasingly relevant during times of economic recessions (Hinkin & Schriesheim, 2009; Williamson & Zeng, 2009). There are also indications that, when a depressed economy leads to a lack of salary increases, employee attitudes, such as satisfaction and commitment, in addition to intention to leave, are also affected (Taylor *et al.*, 2006). Compensation is a key reason why academics are leaving HEIs, and compensation structures should be customised to retain academics (CHE, 2008; HESA 2011). The salary differentials between the private sector and HEIs are

sizable and growing. Uncompetitive remuneration packages result in academics being poached by the private sector (HESA, 2011).

In 2009 and 2010 the weak economy and global recession affected the workplace practices of organisations including retrenchments, reduction in available working hours, pay or benefits, failure to fill vacancies and an expectation of additional working hours (APA Practice Organization, 2009). In addition there are indications that a loss of trust between employees and employers can develop as a result of operational and business decisions during unstable economic times (Deloitte, 2011:3).

During the period 2008/2009 the South African economy experienced an official recession which is described as two consecutive quarters of negative growth in the Gross Domestic Product (Statistics South Africa, 2010). The effects of the 2008/2009 recession in South Africa resulted in a contraction of available employment by 3% or an estimated 497 000 jobs (Statistics South Africa, 2009). South African unemployment rates increased to about 25% due to the recession in 2008/2009 and have remained similar in the 5 years since, without recovering to pre-recession rates (Statistics South Africa, 2014b:i). The effects of the recession and resultant job losses during the time period of the research indicate a labour market where jobs are scarce and opportunities to leave one's current job are thus limited.

3.2.8.3 Industry differences

All industries in South Africa lost jobs during the 2008/2009 recession. The only industry sectors which did not report job losses during this time were the Finance sector which showed a gain of 3.8% in number of jobs and the Community and Social Services sector which showed a gain of 1% (Statistics South Africa, 2009). In the years between 2008 and 2013, the overall pattern in industry showed gains in Community and Social Services, Finance, Mining, Transport and Utilities and losses in Manufacturing, Trade and Agriculture (Statistics South Africa, 2014b:ii).

In the South African Higher Education context, about half of the academic professoriate will be retiring in less than a decade from now and there is a concern that the academic pipeline is insufficient to fill the retirement gap (HESA, 2011). As a result, there will be a critical shortage in the academic supply, and the growing demand will not be met. In general education in the mid 1990's, numerous experienced educators were offered the opportunity to retire early which in turn led to gaps in expertise as they were replaced with an influx of young inexperienced teachers into the school system that was to the detriment of pupils (Fiske & Ladd, 2006:106).

3.2.8.4 Intra-organisational differences

Within an organisation there can be sub-groups of employees for whom research findings may differ. Bagraim (2003:17) found that commitment focus differed for accountants and information technology professionals. At times, research findings point to pre-existing differences between groups of employees. Habib and Morrow (2007) reported differences between the pay structures of academics and management positions in higher education institutions which in turn influences the retention of academics in the fields of lecturing and research. Thus it is important to control for occupational sub-groups as contextual variables during talent retention research.

Educators with specific academic skills such as science or maths teachers can be regarded as essential in the education sector because of these subjects being perceived as critical to the growth and development of the economy (National Planning Commission, 2012). Age can potentially influence organisational requirements, for example an ageing workforce can necessitate the recruitment of younger employees. This was identified as a concern in general education where two-thirds of teachers nationally are aged 40 years and older (CDE, 2011:4) and the recruitment of young teachers was identified as a strategic goal in the annual performance plan of the Gauteng Department of Education (GDE, 2013). Thus it is important to consider biographical factors such as occupational category and age within the organisations in this research.

3.2.8.5 Unique contextual factor: South African labour legislation

In order to address historical injustice and inequality in South Africa, social institutions, including education have been required to transform since 1994, when the first post-apartheid government came into power (Mapesela & Hay, 2005; Martin & Roodt, 2008). The contextual considerations in research conducted in South Africa needs to include the applicability of uniquely South African issues such as employment equity legislation, affirmative action policies and broad-based black economic empowerment legislation that may influence retention and turnover (Wöcke & Sutherland, 2008).

Section 2(b) of the Employment Equity Act (55/1998) (hereafter referred to as the Employment Equity Act) as amended, specifies that the intention of the legislation is to "... achieve equity in the workplace by ... (b) implementing affirmative action measures to redress the disadvantages in employment experienced by designated groups, in order to ensure their equitable representation in all occupational categories and levels in the workforce". The Employment Equity Act describes designated groups as "black people, women and people with disabilities" and "black people" as a "generic term which means Africans, Coloured and Indians" which in effect are the groups that were previously discriminated against during Apartheid. As part of transformation, employers are required to complete an employment equity report that specifies information about the different population groups (Section 19, Employment Equity Act (55/1998) and this includes specifying if employees are African, Coloured, Indian or White.

The effect of this legislation is that the definition of scarce skills in the South African context becomes influenced by race, especially black employees (Wöcke & Sutherland, 2008). The South African Department of Labour (DoL) distinguishes between scarce skills and critical skills. Their definition of a "scarce skill" refers to "the inability to find suitably qualified and experienced people to fill occupational vacancies either at an absolute level of scarcity (no suitable people available) or at a relative level of scarcity (no suitable equity candidates available)"; while "critical skill"

refers to the “inability of people to perform to the level of occupational competence required due to gaps in their skills profiles” (DoL National Skills Authority, 2007:12). The Department of Labour (DoL) acknowledges significant confusion and debate about the implementation and measurement of scarce skills. Thus despite overall job losses due to the recession it does not appear that this has affected the scarce skill occupations, especially for equity candidates as there are a limited number of skilled (qualified and experienced) people available in the country, but a large number of employers competing to employ and/or retain equity candidates (DoL National Skills Authority, 2007:10). Due to historical treatment of black Africans and past discrimination in terms of education and training, South Africa now has a shortage of skilled equity candidates or “Previously Disadvantaged Individuals or PDIs” (Wöcke & Sutherland, 2008).

In the higher education context there is an apparent difficulty to recruit black academics in higher education in particular “when the pool from which to recruit black academics is virtually empty” (Mapesela & Hay, 2005:126). Although increasingly under pressure to comply with legislative requirements HEIs battle with reforming and transforming staff development towards national imperatives. Conflicts of interest are evident in the focus on staff development in HEIs national imperatives (Botha & Potgieter, 2009). A report by HESA (2011) indicated that the budget allocation and funding by the government are not sufficient to cater for staff and student development. Insufficient career opportunities and inadequate academic staff development have implications for the career motivation, career success, and employability of academics, which can ultimately lead to the devaluation of the professoriate (Bitzer, 2008; Buddeberg-Fischer, Stamm & Buddeberg, 2009). In a research study following a merger at a South African higher education institution, Martin and Roodt (2008) found that turnover intentions may result from a rejection of the job itself (reduced job satisfaction) rather than from reduced organisational commitment. This may be due to an increase in “administrative responsibilities and increasing requirements related to student output” (Martin & Roodt, 2008:28).

Due to the importance of South African legislation influencing recruitment and retention of equity employees (Employment Equity Act, 55/1998) academic research

in the South African context frequently considers and reports on race, employment equity and affirmative action as described subsequently. Birt *et al.* (2004:30) identified that employment equity and affirmative action are an area of concern for talented employees in a research study in a financial services institution in South Africa. Research by Kotzè and Roodt (2005:48) considered the factors affecting the retention of highly paid employees in the financial services sector in South Africa and identified that previously disadvantaged individuals were at higher risk for turnover. Findings on high job satisfaction correlating with intention to quit were found among black managers in South Africa which contradicts prevailing international research on job satisfaction (Vallabh & Donald, 2001). Black managers were also more likely to consider leaving their positions than white managers and this may be due to the high job mobility found among black managers in South Africa (Kotzè and Roodt, 2005; Vallabh & Donald, 2001). Black academics have reported feeling isolated and alienated in a historically white university (Task team of the University of the Free State in Mapesela & Hay, 2005) while “discriminatory practices” such as “favouritism” and “racial intolerance” were found to influence employee turnover (Netswera *et al.*, 2005:38). Previously disadvantaged, black males were the most likely sub-group to engage in actual turnover and 83% of the black male participants were uncertain they would stay in their academic institution, found a research study in higher education conducted by Pienaar and Bester (2008:36).

Transformation of racial profiles in general education has made considerable progress with black African educators being in the majority at 70.2% in the general education sector (DoL, 2008:29). With regards to gender equity, female educators represent 67.2% of total public school educators (DoL, 2008:17) However, this does not imply adequate resources in terms of scarce and critical skills for subjects such as maths, science and technology and availability of educators in rural or township areas (DoL, 2008:52; GDE, 2012:155). Due to the Department of Education’s tendency to report generalised “learner-educator ratio’s” there may be an over-supply of teachers in some geographical areas for some subjects while there may be an under-supply of teachers in certain geographical areas and for certain subjects (Marchant & Lautenbach, 2011:S144). In addition, educators may be teaching

outside of the scope of their qualifications which may affect teacher quality and student output (CDE, 2011).

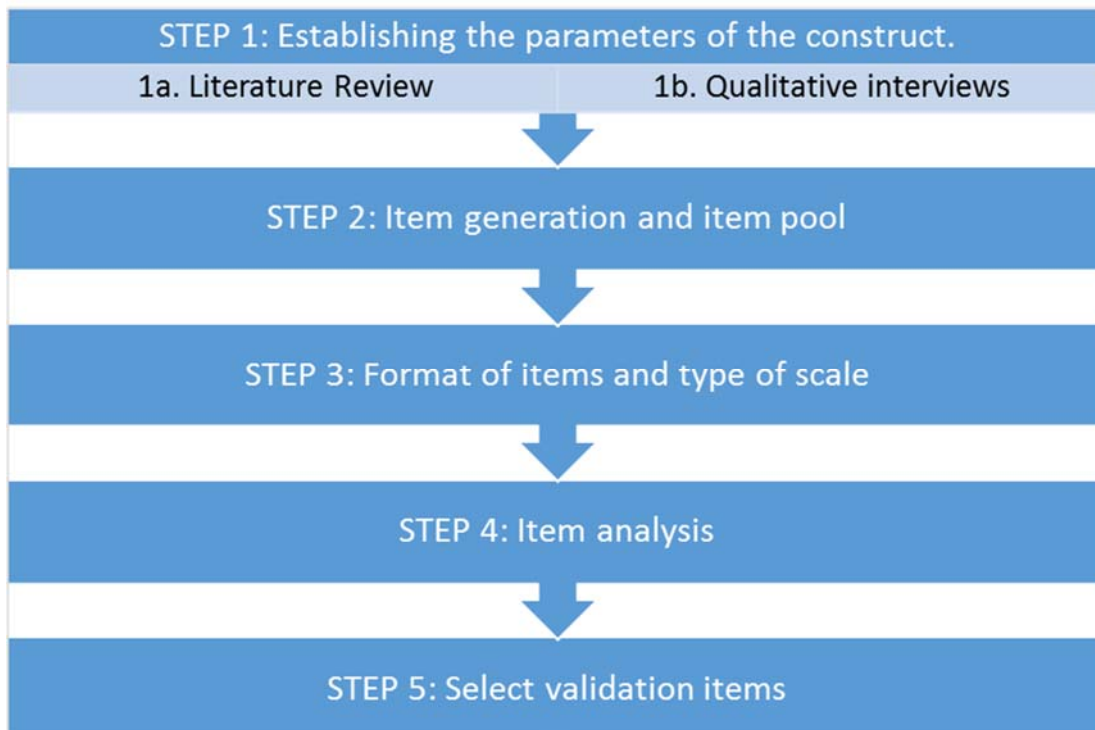
The literature review aimed to provide a theoretical framework for understanding turnover and retention by considering selected theory and research into talent management, turnover and retention, the value of increased employee retention, the causes of employee turnover and the measurement of turnover, retention and performance. In addition, the literature review considered the unique contextual factors that influence organisational research in South Africa in general and in the education arena in particular. In the following chapter Steps 1b to 5 of the scale development process are presented which include the qualitative data collection process, data analysis and findings of the qualitative interviews.

CHAPTER 4: QUALITATIVE DATA COLLECTION, ANALYSIS AND FINDINGS

4.1 INTRODUCTION

In this chapter, the intention is to set out the next steps of the scale development process which helped to identify the scope of turnover and retention in a sample of key participants and develop an initial scale. This part of the study elaborates on the data collection, data analysis and findings of the qualitative interviews as a key input into the scale development process. The qualitative interviews are labelled as Step 1b. Once the data collected from the qualitative interviews have been analysed, the chapter continues with Steps 2–5 which are based on the findings of the qualitative interviews. An extract of the first steps of the scale development process as first shown in Figure 1-1, is included here for convenience and to facilitate understanding.

Extract from Figure 1-1: Scale development process



4.2 STEP 1B OF THE SCALE DEVELOPMENT PROCESS

In contrast with traditional scale development process which frequently limits item development to a theoretical basis only (Hinkin, 1995), this current methodological study added an additional step named **Step 1b: Qualitative Interviews**. In this step of the study, semi-structured interviews with key participants from six distinct South African Industries were conducted to help determine the parameters of turnover and retention data included in the measurement scale. Data was collected and analysed qualitatively. This step was deemed necessary in order to consider the contextual factors relevant to the South African situation which may not have been adequately dealt with if only theoretical analysis was used to establish the content domain. The questions included in the semi-structured interview process were broad constructs identified during the formulation of the research problem and research objectives.

This step in the research process was deemed qualitative as the intention was to obtain diverse views, a rich detailed description and understand the complexity of the domain based on the views of the participants (Brown, 2010; Leedy & Ormrod, 2005).

4.3 SAMPLING PROCESS

The sampling strategy was a non-probability, purposive sampling approach which is suitable for qualitative data collection (Cooper & Schindler, 2006:715). In purposive sampling the participants are chosen based on their personal knowledge, experience or expertise in the fields of employee turnover or talent retention (Silverman, 2011).

The researcher identified a senior HR professional in a variety of organisations and asked them to identify the person who would have most knowledge on talent retention and employee turnover in the organisation they represent. Operational managers who had responsibility for managing critical skills in the organisation and were operationally affected by turnover and skills loss were also approached based on the recommendation of the senior HR person.

A sample size of 15 key participants was proposed. A sample of 11 participants was realised due to the unexpected withdrawal of identified organisations and key participants from the study. This unexpected withdrawal was mostly due to retrenchments of the key participants and the talent retention departments in the organisation they represented. The researcher had faced challenges in obtaining access to organisations due to the perceived confidential nature of the information and the recession. Organisations approached were concerned about talent retention research at a time when they were considering retrenchments or were in the process of retrenching staff. When the data obtained from the 11 participants was analysed a decision was made that, despite the reduced number of participants, a substantial amount of data had been collected. Qualitative research has the potential to gain “useful results from small numbers” (Brown, 2010:240) and a “wealth of detailed data about a much smaller number of people and cases” (Labuschagne, 2003:100).

4.4 DATA COLLECTION PROCESS

Introductory telephone conversations were held with the key participants and individual interviews were scheduled at the employee’s work site. For the 11 key participants who agreed to participate in the study, agreement was reached telephonically and then followed up by an email with an attached consent form and the semi-structured interview schedule. The consent and interview schedule was made available to the individual participants at least a week prior to the interview. One participant completed the semi-structured interview by typing in responses and emailing them back to the researcher. This was followed by a telephonic consultation to clarify their responses and obtain additional detail. The other ten participants completed their interviews in face-to-face sessions with the researcher.

Interviews were conducted using the same semi-structured interview schedule that was made available to the participants via email prior to the interview. Interview durations ranged from 45 minutes to an hour. Notes were openly made by the researcher in response to the questions. These handwritten notes were typed into Word documents and emailed back to the participants as part of respondent

validation and in order to minimise researcher error. The participants were asked to verify that the researcher had the correct understanding of the interview and the participant agreed with the researcher's recollection of the interview. In each instance where the participant made changes to the summary or added information, the revised summary was used in the qualitative analysis.

In this study the researcher used the recommendation of Leedy and Ormrod (2005:100) to use data source triangulation as a potential methodological control that can be applied to control for response bias. The strategy employed was using more than one employee from each organisation and verifying interview information with organisational data (Leedy & Ormrod, 2005:100). The organisational data that was deemed valuable for data source triangulation included hard copies of performance appraisal criteria, existing exit management research, HR policies and strategies and information contained in annual reports, company magazines and the organisations' official website. In one of the organisations, only one key participant was willing to be interviewed as the most senior HR person did not feel that the other executives had knowledge of turnover or retention. In this organisation, data source triangulation depended on organisational data as it was not possible to verify or clarify information with a second HR or operational manager in the organisation. Thus if the key participant stated that the organisation had substantial incentives to reward top performers, the researcher used the organisational data to clarify the types of incentives and the criteria for the incentives used in that organisation.

4.4.1 Unexpected finding during data collection process

One of the unexpected findings of the qualitative process identified a retrenchment risk for talent managers and departments: four of the companies approached for the study retrenched their entire talent management department during 2010 or 2011. Three of the companies approached to participate in the research retrenched their HR specialists retaining only "basic services" such as payroll and employee benefits. The fourth company was part of a large-scale retrenchment process where not only HR specialists were retrenched. Follow-up interviews with six of the HR specialists who were retrenched indicated that these organisations had made decisions based

on 'core business', financial difficulty and regarded talent management as non-essential. As could be expected those who had been retrenched did not regard their organisations view of talent management as positive.

In essence, the effects of the economic recession were still being felt in industries such as the new and used car market, travel and tourism, and banking in 2010 and 2011, when retrenchments continued for any employees that were considered non-core business. It appears that this situation may not be unique to the South African context and that what companies say and do regarding talent management may not be congruent "... at the first sign of trouble, many organizations' initial reaction is to downsize the workforce, thereby risking serious impact on their organization's effectiveness" (Joyce & Slocum, 2012:183). One of the key participants in the present study (Participant 5) commented that *"in an economic downturn people lose their jobs and organisations lose their customers. It is important that there is far-sighted planning in order to prevent the retrenchment of employees. Retrenchment can also unfortunately result in the loss of the wrong employees: those who are competent and talented. Organisations need to consider risk management of skills and talent"*.

One consequence of the retrenchments for the study was that the development study could not be conducted in these organisations as the process drivers and managers who had seen the value of the study had left due to retrenchment.

4.5 BIOGRAPHICAL AND DEMOGRAPHIC INFORMATION FOR KEY PARTICIPANTS

The biographical features of the 11 key participants are presented in the following section. The positions or job titles of the key participants at the time of interview were:

- Head of Human Resources
- Human Resources Director
- Head of Department, Human Resources

- Head of Transformation
- Operations Manager
- Chief Psychologist, Human Resources
- Group HR director
- Group HR Executive
- Head of Corporate Sales (Operations)
- Global Remuneration Practitioner

As can be seen from the above positions the majority of key participants were in the field of Human Resource Management. Two operational managers were recommended by the most senior HR person in the specific company as being key internal clients of the Human Resources department who required scarce-skilled, top-performing employees that were essential to the organisation's success. Additional biographical features are described in Table 4-1:

Table 4-1: Biographical information of key participants

Age range:	35 years to 55 years old
Range of Work experience:	8 years' to 34 years' experience
Race:	Black: 5 Coloured: 1 White: 4 Asian/Indian: 1
Gender:	Male: 4 Female: 7
Qualifications range:	Industry specific (4 year qualification) Honours degree Industrial Psychology Honours degree Human Resources Master's degree Human Resources Master's degree Industrial Psychology PhD Industrial Psychology

Organisations and industries

Organisations and industries where key participants worked were provided with an organisational reference code in order to facilitate understanding and context of the qualitative analysis. The organisational reference code and company/industry type are recorded in Table 4-2:

Table 4-2: Organisational reference code

Organisational reference code:	Company/Industry type
C1	Para-statal utility company
C2	Automotive industry
C3	Multi-national organisation – varied industries (head office)
C4	Higher academic institution
C5	Financial services industry
C6	Travel and tourism industry

One of the reasons for interviewing key participants from diverse organisations was to obtain a variety of views from companies affected differently by socio-economic circumstances and who, by the nature of their industry, may have different pressures and challenges. The concept of industry and environment in which the organisation operates are seldom viewed separately. Industries operate in different external environment contexts which exert a reciprocal influence on structures and strategies. Huber (1984:929) refers to the goal of organisational survival as contingent upon structures, processes and technologies that are well suited to the environment in which the organisation is required to operate.

The potential industry differences in the present study are listed below. References that could reveal the participant or organisation's identity have been omitted but those that refer to the industry in general have been retained.

- **Para-statal utility company** – criticised in media due to executive bonuses and rate increases.
- **Higher Education Institution** – staff perceived to be under tremendous work-load pressure due to higher student numbers and pressure to generate income through academic research. Universities in sub-Saharan Africa continue to operate under conditions that are under-resourced, which pose significant challenges for the scholars concerned (HESA, 2011; Mouton, 2010). Over the

past two decades, state and research funding of public universities have significantly deteriorated (De Villiers & Steyn, 2009; Mouton, 2010). As a result, public university academics have transformed into 'academic capitalists' in order to generate a third stream of income that will benefit the individual, the institution, and the country (Ntshoe, Higgs, Higgs, & Wolhuter, 2008). The work of academics has thus become more emotionally demanding and fragmented, which implies a loss of professional autonomy, scholar identity, and psychological ownership (Bitzer, 2008).

- **Motor vehicle industry** – hard hit by recession with a resulting profit decrease of 31.3% between 2008 and 2009 financial year and an industry-wide loss in revenue ranging from 30% to 60% (Company C2, 2010 Annual Report, p.14).
- **Financial services industry** – the majority of financial services providers were affected negatively by the recession as demonstrated by retrenchments and warnings of low revenue and profit (Mail & Guardian, 2010). The financial services organisation interviewed for this study actually showed a growth during the recession reflected by a 29% growth in equity and an improved cost to income ratio of 52.6% (Company C5, Annual Report, 2011:3).
- **Travel and tourism industry** – traditionally viewed as luxury expenditure. Negatively impacted by recession as indicated by retrenchments of staff and failure to meet targets set prior to the economic downturn. The global economic situation affects international travel adversely especially with corporate clients who are engaging in cost-cutting exercises such as reducing international travel (Guardian, 2009).

Organisational age and size

Age range of organisations was considered as organisations being in different cycles of growth and potential stagnation may have differing approaches to employee retention. The organisational age of the companies that the key participants operated in at the time of the research interviews in 2011 were: 12y, 24y, 59y, 89y, 102y and 104y. This information was sourced by consulting the HR reports and company websites of the various organisations.

Size of the organisation is most frequently measured using the number of employees. The organisational size was determined by identifying the number of employees employed in the organisations that the key participants operated in at the time of the research interviews in 2011 as: 1 058, 2 261, 5 208, 6 942, 39 034 and 105 000 employees. This information was sourced by consulting the HR reports and company websites of the various organisations. Although larger organisations are traditionally perceived as having more resources to reward employees, there are also disadvantages and large organisations are perceived as having lower employee satisfaction, lower motivation and higher turnover (Lawler, 1997). Employee reward systems in large organisations may reward internal measures of performance, such as performance ratings, unlike smaller organisations which may reward external measures of performance such as “external value to customer” (Lawler, 1997:26).

The variety of industries, organisational ages and sizes in the present study would thus be likely to contribute to a variety of views and strategies regarding employee retention in the South African context.

4.6 DATA ANALYSIS OF INTERVIEWS WITH KEY PARTICIPANTS

The data collection process has been specified in section 4.5. The preliminary typed-up responses from each of the semi-structured interviews were sent to the participants for verification and were returned to the researcher via email. If any changes were required, these were typed up and the corrected responses were sent back to the participants for verification. The final typed interview results were used in the analysis.

The responses from each of the semi-structured interviews with key participants were analysed to determine if themes or patterns emerged in the answers to the questions. Following the recommendations by Braun and Clarke (2006), the coding for the thematic analysis took place across the entire data set, however, when collating codes into potential themes, the majority of themes and codes clustered around the initial seven questions which are listed in Addendum A. The questions that were asked may have influenced the participant’s responses in such a way that

even if they didn't answer a specific question when asked, they may have answered it later in the interview.

4.6.1 Talent identification

“How does your organisation identify talented employees that they would like to retain?”

This question was designed to partly answer the research objective to describe how employee talent is defined, identified, measured and monitored in a sample of organisations represented by key participants. Findings of the thematic analysis are recorded in Table 4-3:

Table 4-3: Thematic analysis summary for talent identification

Theme	Company code	Participant quotes
Talent identification starts at the selection stage	C1, C2, C3, C4, C5, C6	<p>“Identify talented, scarce-skills employees from the time of selection by means of psychometric testing” (Participant 1, C4).</p> <p>“Potential is assessed at selection stage using psychometric assessment as this has been found to be the best predictor of future performance” “A comprehensive 9 block talent profile is compiled for middle management and above”. (Participant 6, C1).</p>
		<p>“Organisations rely on recommendations and referrals identified by “head hunters” or “external talent identification organisations” (Participant 2, C6).</p>
		<p>“...potential, competencies, skills and knowledge, academic qualifications and experience at the time of appointment” (Participant 10, C5).</p>
Talent can be identified by engaging in daily monitoring of employees	C2, C5, C6	<p>Talent identification includes financial measures such as the “cost of the employee and his ability to generate revenue” (Participant 10, C5).</p>

Theme	Company code	Participant quotes
		<p>“In addition, there is daily monitoring of individuals who stand out: who go the extra mile for client service ...” and “... the targets are very challenging due to the economic climate and this puts pressure on sales staff” (Participant 9, C5).</p>
		<p>“Additionally we identify employees that have a positive attitude and passion towards their job. These are employees that will go an extra mile for clients and can be called client-centric employees. It is an organisational objective to identify employees of choice: the type of employees we want working in our organisation” (Participant 2, C6).</p>
<p>Formal performance appraisal is an important part of identifying talent</p>	<p>C1, C2, C3, C4, C5, C6</p>	<p>“It is possible to use the formal performance appraisal process to identify employees that are constantly exceeding expectations and then to monitor these exceptional employees” (Participant 3, C3).</p>
		<p>“Performance is measured using a comprehensive performance appraisal process that includes multi-rater assessments” (Participant 6, C1).</p>
		<p>“Monitor the performance of the individuals using a balanced scorecard approach” (Participant 10, C5).</p>
<p>Identification of talent for further development is required</p>	<p>C1, C2, C3, C5, C6</p>	<p>“In reality, identification of talent is not always a conscious exercise or formal process” (Participant 3, C3).</p>
		<p>“Scarce-skilled employees can also include those who are talented and meet the criteria for employment equity” (Participant 4, C6).</p>
		<p>“... assessing potential with a Nine Box matrix ... looking for people with high potential and they</p>

Theme	Company code	Participant quotes
		must be performing at high levels in their current roles ... input includes performance review, 360 review, ability, engagement, aspirations” (Participant 11, C2).

As can be seen from Table 4-3 above, the implied definition of talent based on the qualitative interviews is:

- an **exclusive** one in that a select group of talented employees are identified;
- employees who are seen as having **high potential** for further development;
- employees who meet criteria for **high performance** based on current **outputs**;
- **malleable** in that talent can be developed within the organisation;
- talent can be identified based on **qualifications and experience**
- talent can be identified based on **knowledge**
- talent can be identified based on **scarce skills**
- talent can be identified based on **roles or positions** in the organisation
- **contextual** to the socio-political environment in that employment equity legislation in the South African context partly informs the understanding of scarce-skill employees (see section 3.2.8);
- **contextual** to the organisation and to the type of work performed. Different organisations have different talent needs and within an organisation there are varied types of talent required.

A proposed **definition of talent** based on the interview results is that talent refers to an exclusive group of employees who can be identified in different ways including qualifications and experience, scarce skills, specific knowledge, roles or positions, level of actual performance or potential performance and can be further developed to meet the contextual needs of a specific organisation within the socio-political context of South Africa.

With reference to Table 4-3 above participants from all the organisations in the study report that **talent identification starts at the selection stage** during the recruitment process. Although psychometric assessment is reported as the ideal method of talent identification by two of the organisations (C1, C4), not all used psychometric testing. One of the organisations relies on the recommendations of external organisations such as head hunters to refer talented employees for selection (C6). Selection could also be based on employee skills, knowledge or qualifications (C5).

A subsequent theme is that talent is identified by engaging in **daily monitoring of employees** using a combination of supervisor rating, customer service rating, and hard data as reported by three of the six organisations in the study (C2, C5, C6). The hard data is obtained from sales figures (C2, C6) amount of revenue generated (C5), forex losses or gains (C5) or a daily customer service register (reference C2, C5, C6).

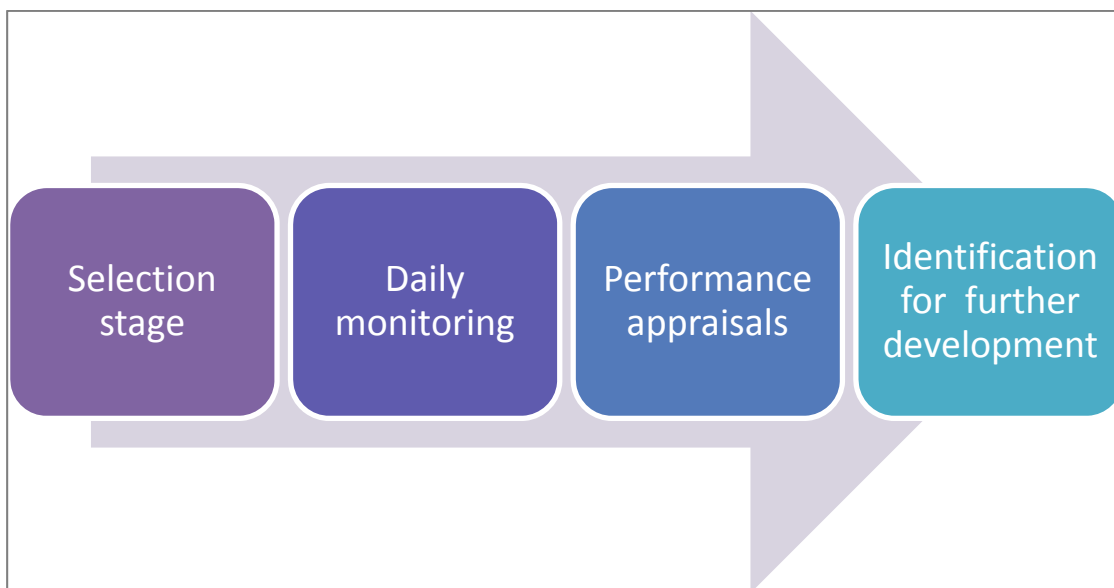
A formal performance appraisal process is deemed important by all participants and organisations in the study in order to identify talent (C1-6) but organisations differ whether performance appraisals are carried out annually (C1, C4); quarterly (C3, C6) or six monthly (C2). The formal performance appraisal process consists of a 360-degree process where peer, supervisor and customer feedback is considered (C1-C6). Organisations in the study use a 5-point scale (C1-C6). Hard data is used when available and applicable namely sales figures, cost of employee and ability to generate revenue (C2, C5, C6). The recession affects the criteria for top-performing employees as it becomes more revenue driven. Employees constantly exceeding expectations are seen as talented (C1-C6).

Identification of talent for further development occurs in the talent management process described by the participants in five out of six organisations. (C1, C2, C3, C5, C6). Two organisations used a comprehensive nine-block talent profile to identify talent for further development where the vertical axis measures performance and the horizontal axis measures potential (C1, C2). One organisation used a balanced scorecard system to identify talent, considering operational requirements, a personal development plan, cost of the employee and ability to generate revenue, customer

satisfaction (external and internal customers) and the results of the performance management system (C5). Three of the organisations use psychometric testing as part of the talent identification process when deciding which employees are suitable for further development (C1, C3, C5). One of the organisations includes an industry specific knowledge test to determine talent (C5). Affirmative action legislation influences which employees are identified for further development and preference is given to scarce-skilled employees (C6).

In summary, the different stages in the employee life cycle where talent is defined, identified, measured and monitored as described in the key participant interviews can be summarised in Figure 4-1.

Figure 4-1: Talent identification at different stages of employee life cycle



Potential items resulting from the themes identified in Table 4-3 that could be used in the item pool for the talent retention measurement scale include:

- Are performances appraisals conducted regularly?
- Are performance appraisals fair?
- Are employees satisfied with adequate career development opportunities?
- Are employees satisfied with the organisations talent management processes?
- Do employees receive adequate feedback from management?

Thus the key participants provided useful information on the way talent is identified in the organisations they represent. The next question asked to the key participants during the semi-structured interviews is discussed in section 4.6.2.

4.6.2 Current retention management strategy

“How would you describe your organisations current retention management strategy? In your opinion, what works well to help keep top-performing employees?”

This question was formulated to address the research objective of exploring the current retention management strategy utilised in the sample of organisations represented by key participants. Findings of the thematic analysis are discussed in Table 4-4.

Table 4-4: Thematic analysis summary for types of retention management strategies

Theme	Company code	Participant quotes
Selection is part of the retention management strategy	C5, C4	<p>“Pre-selection testing already takes place before the person gets the job ... hiring the correct person for the job” (Participant 9, C5).</p> <p>“Choosing the right person from the start” (Participant 10, C5).</p> <p>“Your talent management process already starts at the stage of acquisition of employees” (Participant 5, C4).</p>
Induction is ideally part of the retention management strategy	C5	<p>“There is always room for improvement in an induction process and it would be valuable to know what improvements would benefit the organisation and employees” (Participant 10, C5).</p>
Employee development is a key retention management strategy and is practised in diverse ways	C2, C5, C6	<p>Formal compulsory training: “... the objective being to train people to perform at optimal levels in their current roles” (Participant 11, C2).</p>
	C1, C2, C4	<p>Further studies paid for: “The employee needs to motivate for further studies and if it adds value to the organisation then it will be paid for” (Participant 8, C1).</p> <p>Loans for further studies: “... offer study loans to employees who wish to study further” (Participant 11, C2).</p>
	C1, C5, C3, C2, C6	<p>Training and development paid for by company for scarce-skilled and talented employees.</p>

		<p>“a graduate training programme for talented applicants who have completed their studies” and “enhanced training ... executive development programme” (Participant 9, C5).</p> <p>“... a group training academy which appeals to employees who feel rewarded by additional knowledge, learning, growth and development opportunities” (Participant 4, C6).</p> <p>“Talented employees have to be invited to attend this training ... this training is identified as reward for hard work and is not an open invitation” (Participant 7, C2).</p>
	C1, C3, C5, C6	<p>Formal coaching and mentoring processes are invested in because “talent that isn’t nurtured gets lost”. (Participant 6, C1).</p> <p>“Mentorship is less effective than coaching as employees are moved around in the company” (Participant 3, C3).</p> <p>“Employees receive mentoring and coaching from top-performing peers” (Participant 9, C5).</p>
	C1, C4, C3	<p>Succession planning is difficult: “Labour legislation hampers succession planning as appointments have to consider statistical requirements such as gender and previously disadvantaged individuals” (Participant 5, C4).</p> <p>“The next level is not promised, all we are doing is providing these high-potential employees with the tools and development. If and when a position becomes available, they are then able to apply” (Participant 11, C2).</p> <p>“... a succession plan cannot really be developed as this is a highly unionised organisation which implies that all vacancies must be advertised ...” (Participant 3, C3).</p>
	C6	<p>Innovative development programmes: “2IC development programme for potential leaders who are exposed to practical skills transfer in different environments by shadowing managers for a period of time” (Participant 4, C6).</p>
Compensation, Recognition and Rewards are essential for retention	C1-C6	<p>“People have different needs, desires and are motivated by different things” (Participant 5, C4).</p>

As can be seen from Table 4-4 above, retention management strategies are seen as a necessary part of the talent management strategy by all the participants and emergent themes on the **types of retention strategies** include:

Selection: Selecting the best person for the job who is a good fit for the environment by having the correct skills and expertise, helps retain employees. Although only two organisations expressly identify selection as a retention management strategy, the importance of selection in talent identification was previously stressed by all the participants (see Table 4-3).

Induction: This was only considered as a critical retention management strategy in one organisation in the study which utilised formal induction including knowledge of the company and HR policies. This organisation also included informal or on-the-job induction. (C5, Participant 10). A participant explains the value of induction from personal experience although their current organisation did not provide the ideal induction. “Each new employee needs a clear induction programme with a personal element that helps to establish a relationship with new employees. An on-line induction programme is not good enough, it leaves the employee feeling isolated. New employees need to feel emotionally connected to an organisation in order to build trust in the organisation” (Participant 1, C4).

Employee development: Although employee development is considered as a key retention strategy by all the organisations in the study, the form that employee development takes differs widely between organisations. Some organisations allow self-selected training that the organisation will pay for if it adds value to the organisation (C2, C1, C4). Other employees get formal, compulsory training which is job related (C2, C5, C6). Most organisations have an enhanced training and development programme or leadership programme for talented employees, especially equity employees (C1, C5, C3, C2, C6). Formal coaching and mentoring programmes are made available in order to support employee development (C6, C1, C5). Although succession planning is a potential employee development strategy it is not regarded as feasible in the South African context due to labour legislation and union pressure (C1, C4, C3).

Compensation, recognition and rewards: The majority of organisations in the study realise that employees value different things and that different types of compensation, recognition and rewards encourage employees to stay. One of the participants stated that, “If you want to reward talent always say ‘thank you’ as a first strategy but remember you can’t eat ‘thank you’ ... low salaries are demotivating especially for bread winners ...” (Participant 5, C4). The diversity of approaches in

practice in their organisations identified by the participants in the study are presented in Table 4-5.

Table 4-5: Types of compensation, recognition and rewards identified

Reward type	Description	Reference
Formal remuneration	Linked to market, industry norms or occupation norms	“Highest paying total package in industry” (Participant 7, C2).
	Percentage above market average	“The remuneration strategy is part of the retention strategy and aims to reward employees at 10% above market level (Participant 2, C6).
Standard benefits	Pension, Medical aid, Funeral cover, Group life insurance	C2, C5, C1, C4, C3 (company website, HR report, annual report)
Additional benefits for all employees	Housing benefits	Participant 8, C1
Additional benefits for select employees only	Car allowance, cellphone allowance, laptop	Participant 11, C2
Innovative benefits	Post-retirement medical aid	Participant 7, C2
	Bursary scheme for employees’ children	“bursary scheme where we offer financial assistance to employees’ children who are studying at tertiary institutions” (Participant 11, C2)
	Birthday leave	“Birthday leave is offered to all employees” (Participant 10, C5).
	Crèche for children of employees during the December holiday season	C5 (annual report 2011).
Onsite perks	Canteen	Participant 8, C1
	Gym	Participant 8, C1
	Bus service	Participant 8, C1
	Occupational health/wellness services	C1, HR report. “These healthcare programmes are part of the HR strategy of taking care of the whole person” (Participant 7, C2).
	Flexi-time	“To support a work-life balance a flexi-time programme is available” (Participant 8, C1).

Chapter 4: Qualitative Data

Reward type	Description	Reference
Bonus structure	Annual based on performance appraisal	<p>“Employees are paid well and performance based bonuses are paid (Participant 8, C1).</p> <p>“Monetary awards for top performers include an annual bonus” (Participant 10, C5).</p>
	Standard 13th cheque	C4 (Company website; HR report).
Salary review – six monthly	Based on revenue generated and organisational performance	“... salary adjustment based on half-year results” (Participant 10, C5).
Commission structures	Based on sales and revenue generated	<p>“There is an incentive and commission structure dependent on their actual job description. For example, sales force has clear targets and rewards” (Participant 9, C5).</p> <p>“... higher paying performance incentives and commission structures (Participant 7, C2).</p>
	Linked to job description	
Target based incentives	Financial reward based on achieving a clear target	“Sales formulate their own incentive criteria linked to individual and/or group targets, for example the amount of revenue generated” (Participant 10, C5).
	Linked to job description	
Non-monetary recognition	Caring, supportive management style	“Nurturing managers who care for people are an essential part of managing turnover and retention” (Participant 6, C1).
		“A language of appreciation is encouraged including a culture of saying please and thank you” (Participant 7, C2).
		“Verbal acknowledgement, ‘well done, congratulations, thank you’” (Participant 9, C5).
		“Retention of quality employees is often about the quality of the relationship between the manager and the employee” (Participant 4, C6).
		“... the manager who has an open relationship with his employees....knows what his employees need in order to feel motivated and stimulated” (Participant 3, C3).
		“Employees don’t leave companies they leave managers” (Participant 6, C1).
	Employee of the month or year.	<p>C3, C6 (HR reports and company website)</p> <p>“Monthly recognition – employee of the month” (Participant 8, C1).</p>

Reward type	Description	Reference
	Social events where top performers receive recognition	C3(HR reports and company website) “Social events where public recognition is given to achievers” (Participant 10, C5).
Minor incentives at discretion of manager	Low-cost incentives which are handed out ad-hoc to deserving employees	“Management is encouraged to catch people in the act of doing the right thing and acknowledge this” (Participant 7, C2).
	Time off from work	“... time off from work” (Participant 8,C1). “... small rewards or incentives are also provided at business unit or management discretion, for example time off” (Participant 10, C5). “... employees may value different things such as ... time off as a reward” (Participant 2, C6).
	Dinner for the family, food vouchers	“Managers also have the discretion to provide small incentives such as ... “dinner for family” (Participant 8, C1). “a free lunch” (Participant 10,C5). “... pizza lunches or Woolworths vouchers for team performances or individuals (Participant 2, C6).
	Small cash amounts or gifts such as chocolates, flowers, gift cards, movie tickets	“small cash amounts” (Participant 8, C1). “movie tickets ... small gift: chocolate, flowers, gift card” (Participant 10,C5). “employees may value different things ...some prefer money”(Participant 2,C6).
Major incentives based on performance	Local and overseas holidays	“Employees are rewarded with incentive trips at various levels” (Participant 7, C2). “... incentives at a branch level such as airline tickets, weekends away” (Participant 2, C6).
	Travel opportunities for work such as national and international conferences	“Executives can receive incentives such as overseas trips ... opportunities for overseas assignments and conferences” (Participant 8, C1). “Employees are provided with travel opportunities – work related” (Participant 7, C2).

Reward type	Description	Reference
	Training and development opportunities paid for by the organisation	<p>“The major benefits for individuals are training and development opportunities” (Participant 8, C1).</p> <p>“... use a developmental programme that aims to keep employees stimulated and motivated” (Participant 3, C3).</p> <p>“... there is an extensive training and development strategy” (Participant 2, C6).</p>
Organisational policies	Policies that protect the human rights, and health and safety of employees	“The organisation has many policies and procedures designed to protect individuals such as health and wellness policies, health and safety policies, anti-discrimination policies (Participant 8, C1).

Source: participant interviews; HR reports; company websites

Employees’ needs may change over time thus it is important that compensation, recognition, incentives and rewards have scope for flexibility and that management “engages in forward thinking and planning”. New needs and challenges faced by employees such as “rising petrol prices, e-toll fees and the Gautrain bring opportunities for new types of retention strategies” (Participant 10, C5).

In addition to participants' discussions on the types of talent retention management strategies, participants introduced ideas on **how to effectively implement these strategies** at organisational level. These ideas centred on three themes which are summarised in Table 4-6:

Table 4-6: Effective implementation of retention strategies

Implementation strategy	Sub-theme	Reference
Educate management	Clarify differences between compensation, recognition, incentives and rewards	“Incentives, reward, remuneration and adequate recognition for adequate performance need to be clarified” (Participant 1, C4).
	Educate management in the types of retention strategies available and options for incentives	<p>“Management can also benefit from being kept informed of other retention strategies that they can use ...” (Participant 4, C6).</p> <p>“Management have permission to be creative ... with recognition such as pizza lunches or Woolworths vouchers”</p>

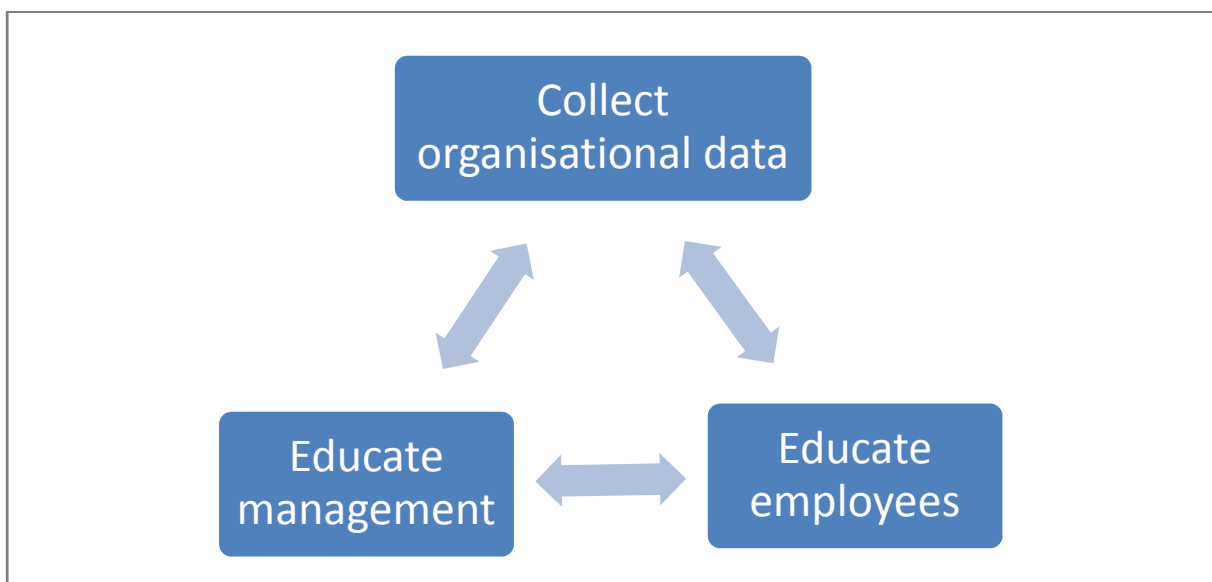
Implementation strategy	Sub-theme	Reference
		(Participant 2, C6).
	Educate management about talent management and the cost/benefit of talent retention	<p>“Management need to understand the cost of employee turnover and loss of talented, scarce-skilled employees (Participant 1, C4).</p> <p>“A culture of appreciating the importance and value of talented employees to the business is necessary in order to retain talented employees (Participant 3, C3).</p>
	Managers need to know about the reasons that employees leave the organisation	“Operational managers want to know if the reasons that employees are leaving are within their control or outside their circle of control” (Participant 4, C6).
	Educate management in the importance of the quality of their relationships with their subordinates for retention	<p>“The relationship with the direct manager is very important: the manager needs to coach you, support you and be willing to do skills transfer ...” (Participant 6, C1).</p> <p>“... close relationship between employee and leader is beneficial to retention” (Participant 9, C5).</p>
	Educate management about the importance of the performance appraisal in retention	<p>“Most important management mechanism of employee turnover and retention is a proper performance discussion (Participant 6, C1).</p> <p>Important to “provide accurate feedback about employee performance” (Participant 9, C5).</p> <p>“... you do not need a separate retention strategy: it should be part of talent management and performance management” (Participant 5, C4).</p>
Educate employees	Educate employees in the value they add to the business	<p>Ensure “the employees understand the business’ vision and mission” (Participant 9, C5) and how they contribute to it.</p> <p>“... they understand that what they do contributes to the organisation” (Participant 5, C4).</p>
	Educate employees in the talent management system and strategy	“This personal development plan ensures that employees know that they are valued and that the organisation is prepared to invest in them” (Participant 6, C10).
	Educate employees in the rewards processes and performance appraisal process	“To prevent turnover the reward process needs to be clarified at recruitment stage... else the employee may be disappointed or frustrated later” (Participant 8, C1).
	Adequate induction can be an important part of	“Employees receive education about the corporate culture and benefits ... and

Implementation strategy	Sub-theme	Reference
	employee education	required HR policies (Participant 10, C5).
	Educate about developmental opportunities available for employees	“Each employee needs to know how they can progress through the organisation” (Participant 1, C4).
Collect organisational data	Organisational data can be used to educate employees and management	“We have to track who is leaving and why they are leaving. If we are to implement the correct measures we have to know the why?” (Participant 11, C2).

Organisational data provides information that management and employees need to be educated in so that they can understand the importance of talent retention. Organisations involved in the study collect different types of organisational data which is then used to educate employees and management and is described in section 4.6.3

The proposed interaction of the identified implementation strategies at organisational level are depicted in Figure 4-2.

Figure 4-2: Effective implementation of retention strategies



In Figure 4-2 it becomes apparent that in order to **effectively implement retention strategies**, organisations need to collect organisational data about turnover and

retention strategies, educate management about the content, meaning and value of this data and then in turn educate employees. Talent retention has the potential to become a synergistic process if employees and management understand that they contribute to the organisational data on retention by providing ideas and feedback about retention strategies and can also benefit from the data because it may contain information on proposed new strategies and existing strategies.

In summary, themes identified relating to **retention management strategies** in the organisations in the study have been used in the development of the following potential items that contribute to the item pool for the retention scale:

- employee satisfaction with communication and information;
- employee satisfaction with recognition and rewards systems;
- employee perception of adequate financial compensation;
- employee satisfaction with employee benefits such as medical aid, pension;
- whether employees feel emotionally acknowledged or valued for their contribution;
- employee satisfaction with incentives and perks;
- factors which may influence employees to stay (open-ended option);
- employees perception of cultural diversity practices;
- importance of the employee-manager relationship in retention;

The participants in the semi-structured interviews provided extensive information on the types of retention strategies and it was possible to identify the process required in order to implement these strategies effectively. The next question asked to the key participants related to the content of the organisational data required.

4.6.3 Organisational data

“What organisational-level data (facts, figures, trends) do you think is needed to measure and manage employee turnover?”

This question was developed to identify and describe the organisational level data required to monitor and manage employee turnover based on interviews with key participants. References to organisational data was found throughout the interviews

and not just in response to the above questions. Analyses of themes are discussed in Table 4-7.

Table 4-7: Organisational data required to measure and manage turnover

Theme	Sub-theme	Reference
Data gathered before resignations	Ask employees questions before they resign	<p>“Once the employee has resigned then it is already too late” (Participant 5, C4).</p> <p>“Need to ask the questions before the employee has resigned” (Participant 10, C5).</p>
	Conduct surveys	<p>“... organisational climate surveys” (Participant 6, C1).</p> <p>“... employee satisfaction surveys” (Participant 11, C2).</p> <p>“... employee engagement assessments”(Participant 11, C2).</p>
	Monitor biographical information of new hires	<p>“Track all engagements ... by race, level of employee and gender ... track reengagements” (Participant 11, C2).</p>
		<p>“Number of applicants recruited into a graduate programme that are successfully retained would be relevant (Respondent 9, C5).</p>
	Conduct workforce planning and skills planning	<p>“The organisation needs to be aware if they need to become competent in a new area?” (Participant 5, C4).</p>
		<p>“The answers to the questions, why are we recruiting so many employees?” (Participant 3, C3).</p>
	Monitor employees perceived as a “flight risk”	<p>These are employees who have been recently employed, are highly mobile and in demand due to qualifications, skills and equity requirements: gender and race. (Participant 2, C6).</p> <p>“Flight risk calculated using climate survey, leadership effectiveness survey and trends from exit interviews” (Participant 6, C1).</p>
Data gathered after resignations	Biographical and demographic information – who is leaving	<p>“Which employees have resigned?” (Participant 2, C6).</p> <p>“You need to track by race, level of employee and gender” (Participant 11, C2).</p> <p>“A personnel stocktake is required</p>

Chapter 4: Qualitative Data

Theme	Sub-theme	Reference
		<p>especially of employees that are hard to find, hard to retain, for example, forex dealers, risk analysts" (Participant 10, C5).</p> <p>"... identify employee losses in areas of the business as well as common denominators such as specific manager ..." (Participant 3, C3).</p> <p>"Look at age spread in organisation. Not enough young people joining and staying" (Participant 1, C4).</p>
	How long did employee stay?	<p>"Job hopping can occur when employees have been in the company for less than 3 months and then are offered a senior position in another company" (Participant 8, C1).</p> <p>"Highest turnover of employees is during the period 1 to 2 years of employment" (Participant 10, C5).</p>
	Link resignation data to performance data	<p>"Are they talented, scarce-skilled employees?" (Participant 4, C6).</p> <p>"Were the employees who left top performing or not" (Participant 1, C4).</p>
	Reasons employees are leaving linked to interventions – why are they leaving and what can we do about it?	<p>"We have to track who is leaving and why they are leaving. If we are to implement the correct measures we have to know the WHY?" (Participant 11, C2).</p> <p>"Exit research could be more valuable if the feedback helps to generate interventions" (Participant 10, C5).</p>
	Any fraud or misconduct?	<p>"The system needs to be able to identify if the employee is leaving due to misconduct or fraud – should flag a warning about high-risk employees and prevent re-hiring" (Participant 8, C1).</p>
	Data about new employer	<p>"Where are employees leaving to? Why have they chosen this employer?" (Participant 2, C6).</p>
	Interview one month after leaving	<p>"If the employee that has left is a key loss or has a critical skill or position, the HR manager may make an appointment with this person one month after they have left the organisation to discuss their experiences at the old company and new company and what the organisation could have done better" (Participant 2, C6).</p>
Cost of turnover to company	Cost/benefit analysis of entire talent management	<p>"A cost/benefit analysis of the talent retention programme needs to be clarified</p>

Theme	Sub-theme	Reference
	strategy	<p>..." (Participant 1, C4).</p> <p>"What would these 'solutions' cost the company and what would the risk be if no solution is proposed – which key personnel are affected?" (Participant 9, C5).</p>
	Calculate cost of turnover to company	<p>"Recruitment is very expensive – person takes two years to get used to the organisation so when the employee resigns cost calculations are also done. This includes how long the employee was employed and the cost of recruitment." (Participant 8, C1).</p> <p>"... actual costs of turnover and replacement of employees including replacement fees" (Participant 3, C3).</p> <p>"cost of the employee and his ability to generate revenue" (Participant 10,C5).</p> <p>"The extent of recruitment, retraining costs" (Participant 4, C6).</p> <p>"... what does it cost you if you lose a scarce skill and what does it cost to replace it?"(Participant 1, C4).</p>
Industry/contextual data on turnover	Developmental stage and size of organisation	<p>"Industry data is less relevant because the sizes of the organisations need to be considered as well as the developmental stage of the organisation: a developing organisation that is still growing can't be compared to an established organisation that is retrenching" (Participant 9, C5).</p>
	Economic climate	<p>"Both the organisation and the employees are affected by the pressure of the economic climate ..." (Participant 9, C5).</p> <p>"In an economic downturn people lose their jobs and organisations lose their customers. ... Retrenchment can also unfortunately result in the loss of the wrong employees, those who are competent and talented" (Participant 5, C4).</p> <p>"The impact of retrenchment on employee motivation needs to be considered especially in an industry that has recently had retrenchments" (Participant 4, C6).</p>

In summary, the findings described in Table 4-7 indicate that the organisational data required to measure and manage turnover include:

Data gathered before resignations. As described in Table 4-7 it can be valuable to ask employees questions. Questions must be asked before it becomes necessary for employees to resign. Questions similar to those asked in exit interviews can be asked but should be asked before employees resign and on a regular basis (Participant 5, C4; Participant 10, C5). It also is valuable to conduct surveys on a regular basis to gauge the perception of current employees. (Participant 6, C1, Participant 11, C2). The employer should monitor the people they are hiring by monitoring biographical information, skills, organisational level and occupations (Participant 11, C2; Respondent 9, C5). It may even be necessary to track re-engagement as a trend where employees quit their jobs to access their pensions and then get hired again (Participant 11, C2).

Data gathered after resignations: Exit research is only valuable if it helps to generate interventions to retain employees (Participant 10, C5). All organisations in the study gather some form of biographical data about who is leaving and the reasons why they are leaving. Biographical data identifies the age of the employees, how long they have been in the company, what their occupations are and whether these employees can be viewed as ‘scarce’ or not. Additionally, organisations consider whether the employee is a top-performer or not by linking the resignation data to performance data (Participant 9, C5; Participant 11, C2; Participant 4, C6). It is recommended to conduct exit interviews but the data gathered needs to be integrated into a pro-active retention management strategy by tracking the reasons why employees leave and monitoring high turnover risk departments or turnover linked to specific managers (Participant 6, C1; Participant 11, C2; Participant 1, C4; Participant 3, C3; Participant 2, C6).

Cost of turnover to company “*The organisation is often not getting the opportunity to recover the costs of recruitment, the training process and the benefit of having the employee operate at full potential before the employee moves to another company*” (Participant 2, C6). Two of the organisations in the study recommended a cost/benefit analysis of the entire talent management or retention management strategy which includes the cost of interventions, incentives and rewards (Participant 1, C4; Participant 9, C5,).

Industry data on turnover – is collected but is not the only factor that is important in understanding how your organisation compares to other, similar organisations

(Respondent 9, C5). One also needs to consider the age of the organisation, the organisation size, if the organisation is developing or retrenching; if the organisation is in a period of growth or decline and the current economic reality as people stay if jobs are scarce (Participant 5, C4; Respondent 9, C5; Participant 4, C6.) “A developing organisation that is still growing can’t be compared to an established organisation that is retrenching” (Participant 9, C5).

Based on the above findings, the results of the type of organisational data required are summarised in Figure 4-3.

Figure 4-3: Types of data required in managing employee turnover



Although the question on organisational data did not contribute to any items in the item pool for the talent retention scale it did help to contextualise a framework for classifying the types of organisational data utilised by the sample of participants. This was one of the secondary research objectives. The other consequence of this framework helped to confirm the importance of gathering data on existing employees before they resign from the organisation.

4.6.4 Resignation process

“What happens when an employee resigns from the organisation?” This interview question was included in order to obtain clarity on the process followed in organisations when an employee resigns from the organisation.

The resignation process is mostly **an administrative process** which involves the ending of benefits such as pension, medical aid, notice to payroll, calculation of leave, withdrawal of perks and company property such as cellphones, company car, laptop (Participant 11, C2). Exit interviews are seen as part of an HR checklist when an employee resigns (Participant 6, C1; Participant 11, C2).

Exit interviews are conducted by all of the organisations in the study. The exit interviews are considered voluntary, not forced or compulsory but employees are encouraged to complete them as indicated by the following quotations: *“A person can refuse the interview”* (Participant 6, C1). *“Exit interviews are not compulsory”* (Participant 5, C4). There is an awareness that there is no control about whether employees tell the truth or don’t want to participate. *“Some people won’t talk about why they are really leaving ...”* (Participant 3, C3). *“The value of the exit research depends on the honesty of the employees. Some people are vague but most people are very honest”* (Participant 1, C6).

Organisations differ as to how to increase the value of exit interviews and whether the interview should be conducted by external organisations (C2) or HR managers (C1, C6) or senior managers in the organisation (C4, C3) or if the employee should have a choice in the matter: *“For the exit interview the employee can choose whether they are comfortable to be interviewed by HR, a senior manager or a manager from another department (one level up from themselves)”* (Participant 10, C5). *“The employee can choose whom they would like to sit with for the exit interview, a peer or manager or an employee representative”* (Participant 2, C6).

Most exit interviews take the form of structured questions completed on a set form. The majority conduct face-to-face interviews but one organisation utilises a form that is part of an HR checklist (Participant 7, C2) while another uses open-ended

questions (Participant 2, C6). One organisation utilises informal questions as their exit interview and it takes the form of a conversation (Participant 9, C5).

The exit interview process can contribute to the retention process in the form of a counter-offer. Although not an openly acknowledged retention practice it appears that in reality it occurs in 5 of the 6 organisations in the study. *“On occasion there is money made available for a counter-offer when an employee resigns but it is perceived as incongruent that employees are told that there is no money available to increase their salary unless they resign first and produce an offer from another organisation. This means that there is money available for a counter-offer but not to reward talent and performance”* (Participant 5, C4). *“This conversation tries to avoid the counter-offer scenario unless the base salary of the employee is wrong to start with”* (Participant 9, C5). Despite this incongruence the majority of organisations concede that in rare cases management will try to compromise with a counter-offer. The types of employees who qualify for counter-offers include those with exceptional talent that generate significant revenue, or a person with scarce skills, key executives or a management level equity candidate (C1, C2, C4, C5, C6). *“The organisation does not encourage counter-offers but there may be exceptional cases”* (Participant 7, C2). *“Sometimes when a talented employee leaves, the organisation can re-negotiate with a counter-offer”* (Participant 6, C1). In addition HR or senior management will try to compromise on other non-monetary issues. *“For example, if the underlying problem is one of work/life balance and the employee is a top performer then the manager will attempt to negotiate a compromise regarding time off or a flexi-time arrangement”* (Participant 9, C5). An understanding of the value of exit interview data and the counter-offer processes are depicted in Figure 4-4.

Figure 4-4: Resignation process contribution to retention



4.6.5 Exit management research

“Is any exit management research conducted? If so, how and what happens to the results? What is your opinion on the value of the exit management research? What is the exit management research used for?”

This group of questions was intended to describe the types of turnover and exit management research strategies or processes utilised in a sample of organisations represented by key participants. The types of exit management research identified by the key participants in the study are:

- **Exit interviews:** conducted by all the organisations in the study and have been discussed in section 4.6.3.
- **Trends analysis:** are conducted by all the organisations in the study and have been discussed in detail section 4.6.3. Biographical turnover is monitored in all organisations in the study and includes department and region, gender, race, seniority of position. Scarce skills and previously disadvantaged individuals (PDIs) leaving the organisation are particularly monitored. *“...who are the key personnel: ... those who have scarce skills or those who meet affirmative action*

criteria? Who is leaving and are they key personnel?” (Participant 10, C5). “Can get qualified employees but not skilled. Emphasis on employment equity means that skills and experience are traded for employment equity statistics” (Participant 1, C4).

- **Turnover measurement and classification:** very basic calculations are done in most of the organisations in the study although this is usually limited to the number of staff leaving. Distinctions are made between avoidable and unavoidable turnover during a manual or qualitative analysis of the reasons why employees are leaving. *“Trends distinguish between what is avoidable (developmental issues) and what is unavoidable (family issues)” (Participant 8, C1). “Analysis is done manually on a case by case review” (Participant 7, C2). “Trends are identified manually. Trends analysis tries to distinguish between an underlying management problem and a personal reason” (Participant 9, C5).*
- **Re-engagement** is monitored in two of the six organisations (C1, C2). Employees leaving and returning within a 3-month to 1-year period are identified and then discussions are held with these employees to try and understand why. *“Job hopping can occur when employees have been in the company for less than 3 months and are then offered a senior position in another company. Sometimes these employees are then recruited back to the organisation a few months later. This does not make business sense” (Participant 8, C1). “We track reengagement and we find that many people who do leave, end up coming back ... we do have a one year reengagement policy which stops people from returning within one year” (Participant 11, C2). “...because in this tough economic climate, we find many people leaving so that they are able to access their pensions” (Participant 11, C2).*

The value of exit management research

In addition to the types of exit management research conducted, the participants were asked to discuss the value of the exit management research.

The value of exit interview data is perceived to be affected by the truthfulness of responses from employees who have resigned. *“The value of the exit research depends on the honesty of the employees. Some people are vague but most people*

are honest” (Participant 6, C1). The perception of the value of exit management research differs based on the levels in the organisation that are involved in feedback and how regular this feedback is. If HR gives feedback monthly to EXCO and to line management the exit management research is perceived of being of a higher value. *“Exit interviews are reported on monthly to the EXCO including which concerns have been identified and which actions have been taken”* (Participant 2, C6). *“The exit interview results are sent through to HR who gives feedback to the manager involved and to EXCO”* (Participant 10, C5). *“Exit research is valuable because it is a mirror that provides a reflection of why they are leaving and how to retain employees. Exit research could be more valuable if the feedback helps to generate interventions”* (Participant 10, C5). However, if exit interview data remains at an administrative level or is contained within HR then there is a perception that the organisation does not care about the data, although it is collected and reported. *“No exit management research is conducted that this employee is aware of. If it is conducted the results are not communicated”* (Participant 5, C4). *“Organisations don’t really look at exit management information anymore. They don’t care about the exit interview data ... often exit management interviews are done by administrative staff and information is not fed back to top management...”* (Participant 1, C4).

For exit management to have value, feedback from the results of interviews, turnover data and trends analysis results should be integrated into the whole talent management system, not just retention strategies. *“The exit management data should provide feedback into a pro-active retention management strategy”* (Participant 6, C1). *“Exit management research is not linked to [the] talent management process, it is not thought about”* (Participant 3, C3). Only one of the six organisations state that they adequately utilise the exit management data in this manner (C1).

Potential items resulting from these ideas proposed by the key participants that were used in the item pool for the talent retention survey include:

- identification of factors that may influence employees to leave the organisation;
- identification of reasons that employees would voluntarily resign from the organisation;

- determining whether employees would leave because of unhappiness within the organisation;
- determining if employees would leave for better circumstances away from the organisation;
- determining if employees leave for avoidable or unavoidable reasons.

4.6.6 Participants' choice of questions

“If you were designing an employee retention tool, which questions would you like to see asked? Which questions do you think would add value to employee retention research?”

Participants had a variety of ideas on how to design the ideal employee retention tool. A list of questions, items or constructs that they proposed are listed below:

- risk of leaving/intention to quit;
- relationship with supervisor/manager;
- employee happiness/satisfaction with various organisational policies and practices;
- employee values differ: reasons employees are leaving or staying should be clarified;
- performance management system – key to retention;
- developmental opportunities – key to retention.

Potential items resulting from these ideas proposed by the key participants that were used in the item pool for the talent retention scale include:

- intention to quit;
- do you trust your supervisor?
- my supervisor has my best interests at heart;
- employee satisfaction and degree of happiness with a range of content;
- reasons employees would stay (open-ended);
- reasons employees would leave (open-ended);
- employee satisfaction with performance management system;

- employee satisfaction with opportunities for development and growth;
- is the environment diverse enough to make different cultural groups feel comfortable?

4.6.7 Additional comments

“Do you have any further comments about employee turnover or employee retention?”

This was the final question in the semi-structured interview to ensure that the emergent content domain of turnover and employee retention was not limited by the interview schedule. The following issues were raised:

Generational differences: younger employees are more likely to leave and this poses a risk in terms of knowledge management, both in terms of information being provided to competitors and the sustainability of knowledge among employees. *“Organisations needs to consider generational needs of employees. Younger employees should be expected to deliver projects without expecting a long-term career from them. Also need to consider the knowledge management ... need to be able to replicate and retain the knowledge even if you can’t retain the employee”* (Participant 8, C1). *“Look at age spread in organisation. Not enough young people joining and staying”* (Participant 1, C4).

Competitive practices: There is an awareness of the highly competitive practices within certain industries. Certain organisations “... build the skill, others buy the skill, others train the skill, others borrow the skill, and others recruit the skill.” When one organisation has invested substantially in the skill levels of employees and another organisation just recruits them with an offer of better pay it can also be viewed as “stealing the skill” (Participant 10, C5, Participant 2, C6).

“Job hopping” is a term used by two of the participants to describe employees who have only been employed for a few months to a year, who then resign and leave to another company. This occurs especially among senior equity employees. Some are even re-hired within one year of leaving (Participant 8, C1, Participant 2, C6).

Possible culture differences between manufacturing and retail cultures. Retail cultures are competitive and employees leave due to sales/target pressures. Manufacturing cultures require skilled employees that are in demand but sometimes are limited in terms of alternative job opportunities which makes them more likely to stay (Participant 7, C2).

Affirmative action and diversity influence retention and turnover

“High flight risk” employees could be considered as marketable. *“High flight risk”* employees are often described as skilled, qualified and equity employees such as black male or black female employees. (Participant 6, C1, Participant 8, C1). In addition, technical and specialised skills make affirmative action targets difficult to attain. *“This organisation is highly specialised and it is very difficult to reach diversity transformation goals. It is difficult to retain diversity candidates and to attract females and other diversity groups”* (Participant 7, C2).

The responses to this question indicated that biographical factors such as age of employees and intention to quit should be considered in the retention scale. Biographical features such as duration of employment may influence intention to quit. Highly qualified, equity employees may be at greater flight risk and biographical analysis may be able to determine this. In addition, the competitive nature of some industries may result in different types of retention strategies.

4.7 SECONDARY DATA ANALYSIS - ORGANISATIONAL DATA

As discussed above, a wide range of organisational data was reviewed in order to determine if the information provided by the key participants could be validated or expanded upon. In order to protect the confidentiality and anonymity of the participants and the organisations they represent, the organisational data will not be referenced in any manner that could compromise the research ethics.

4.7.1 Types of exit interview questions asked by organisations

The review of the secondary data provided the following additional insights into the domain of retention and turnover using existing exit interview research or data. Branham (2005) regards exit interviews as providing both the reasons for leaving and the motivational and emotional impact of leaving on the employee. Exit interviews reviewed in the present study were limited to organisations represented by the 11 key participants and the six different organisations they represented. In general, exit interviews tend to ask **where** the employee is going and **why they are leaving** and **how they feel** about the organisation. In addition the following exit interview questions from the organisations involved in the study were regarded by the researcher as providing data validation for the key participant interviews:

- Exit interview questions ask about the employee's relationships with his colleagues and direct line manager and about the extent of manager support.
- Exit interview questions ask about employee satisfaction with personal training and development opportunities.
- Exit interview questions ask about satisfaction with benefits, salary and other perks.
- Exit interview questions ask employees to list the reasons for leaving the job and include personal factors such as family responsibility, pull factors in another organisation or industry such as better benefits and salary, push factors such as job stress or job dissatisfaction, neutral reasons such as retirement.
- One of the organisations in the sample asked a simple question which they regard as having significant self-report value, namely "*would you recommend this organisation to a friend looking for a job?*" (C6).
- One unique set of questions which emerged in South African context interview questions related to employees' perception of safety at work both in terms of safety from violence at work and feelings of safety from sexual harassment (C4).

4.7.2 Results of selected exit interview data

Only two of the six organisations in the study provided data on the results of their exit interview research. Organisation codes were not used in order to further protect the

confidential nature of these results. As indicated in section 4.6.5 the organisations in the study had varied approaches to exit management research and a lack of consistency in the ways in which data was captured within the organisations themselves makes comparison difficult. None of the organisations were willing for the researcher to make contact with employees who had already resigned from the organisation as they regarded the names of these employees as confidential.

The primary reason given for leaving by top talent during the course of a single year at the first organisation included:

- Further career development (25% of leavers)
- Family reasons (20%)
- Work/life balance – personal needs (15%)
- Dissatisfaction with management / leadership styles (10%)
- Inadequate remuneration (10%)
- Dissatisfaction with organisation climate (5%)
- Starting own business (5%)
- Lack of job satisfaction (5%)

The findings of the two organisations differ due to the exit interviews or exit research asking different questions in different ways. When employees who had resigned from the second organisation were asked to rate the degree of satisfaction or dissatisfaction with the following areas the findings were:

- remuneration and rewards (52% of leavers are dissatisfied with this area)
- personal safety (29% dissatisfied)
- organisational culture and leadership (23% dissatisfied)
- work (27% dissatisfied)
- management (27% dissatisfied)
- morale (20% dissatisfied)
- work environment (20% dissatisfied)
- overall experience at the company (only 7% of leavers are dissatisfied with this area.)

The second organisation captured retention information and noted that 47% of those employees voluntarily resigning did so within the first 2 years and on a cumulative basis 80% of resignations occurred within the first 5 years.

4.7.3 Additional secondary data used for data validation for key participants

The majority of key participants indicated that their organisations use employee training and development opportunities as a key employee retention strategy. This was validated by examining the training and development spend as reported in company publications. This was presented as spend per employee in the annual company report or HR report (C2) or alternatively as investment in training and development by stating a single value expressed in units of millions of rand in the annual report (Organisation codes: C5, C3, C1).

The majority of key participants indicated that their organisations use creative and innovative reward and incentive schemes. This was validated by examining the HR reports, company magazines and newsletters which showed pictures and lists of employees with the various incentives and rewards they had received, ranging from formal recognition such as certificates, company functions that honour talented employees, direct financial compensation, travel incentive rewards, tickets to entertainment events, direct gifts or gift cards and the opportunity to donate money to a charity of their choice (Organisation codes C3, C5, C2, C4, C6).

Community involvement and corporate social responsibility was reported on by all organisations in the study and was often mentioned as a factor encouraging pride in the company. Annual reports refer to the number of beneficiaries or amounts spent on projects such as total investment in bursaries or corporate social responsibility projects (Organisation codes C3, C5, C1). Newsletters and magazines reported on individual projects and the people in the company responsible for these initiatives (Organisation codes C4, C5, C6, C2). Annual reports also indicate the required legislative spend on broad-based black economic empowerment, for example, 65.8% of attributable spend (Organisation code C1).

This secondary data was used as corroboration and validation of the majority of items for the talent retention scale being developed from the qualitative analysis of the interviews with key participants.

4.8 SCALE DEVELOPMENT PROCESS-STEP 2: ITEM GENERATION

With reference to the scale development process of DeVellis (1991) and Hinkin (1995) the next requirement in the process is Step 2: Item generation. In this step the researcher is required to design individual items which are questions or statements to measure the constructs. The items should reflect the scale's purpose (DeVellis, 1991:54).

The number of items in the initial "item pool" can be 3 to 4 times as many as intended for the final scale (DeVellis, 1991:57). In this specific study, item generation was based on theoretical relationships between constructs and the qualitative analysis of the key participant interviews. A combination of statements and questions were generated.

4.8.1 Item generation based on qualitative data analysis

In section 4.6 the list of themes and associated concepts identified as worthwhile exploring in the domain of turnover and retention research in a variety of South African organisations were generated and discussed. The link between key participant interviews and items generated for the scale development process are summarised in Table 4-8.

Table 4-8: Item generation based on qualitative analysis

Themes identified in qualitative analysis	Scale development items generated
Organisations have different talent management processes	Are employees satisfied with the organisation's talent management processes?

Themes identified in qualitative analysis	Scale development items generated
Performance appraisals are an important part of talent identification	Are performance appraisals conducted regularly? Are performance appraisals fair?
Talented employees are given opportunities for career development	Are employees satisfied with adequate career development opportunities?
Talented employees are given mentorship opportunities	Are employees satisfied with adequate mentorship opportunities?
Feedback and communication help to retain talented employees	Do employees receive adequate feedback from management? Is the feedback constructive? Is the communication clear? Do employees receive sufficient information in order to do their jobs? Are they satisfied with communication from first-line leadership? Are they satisfied with communication from organisational/institutional leadership?
Recognition and reward systems are central to retention management strategies	Employee satisfaction with recognition and rewards systems Employee satisfaction with employee benefits such as medical aid, pension Employees feel emotionally acknowledged or valued for their contribution Employees are praised and thanked for the work they do Employee satisfaction with incentives and perks Employee perception of adequate financial compensation Employee perception of the fairness of the bonus structure Employee perception of whether the bonus structure reflects their contribution to the organisation
Employees may leave due to transformation factors including affirmative action, lack of cultural diversity or respect for their culture	To what extent are you satisfied with the following factors in your organisation? <i>Affirmative action</i> <i>Sufficient cultural diversity in the organisation</i> <i>Sufficient respect for my culture in the organisation</i> <i>Changes and restructuring in the organisation</i>
Community service projects, community involvement and corporate social responsibility are potential retention factors	To what extent are you satisfied with ... <i>Opportunity to engage in community service projects</i>

Themes identified in qualitative analysis	Scale development items generated
Employees may leave due to dissatisfaction with a variety of organisational policies and practices	<p>To what extent are you satisfied with the following factors in your organisation?</p> <p><i>Organisational leadership</i></p> <p><i>Organisational values</i></p> <p><i>Organisational strategy</i></p> <p><i>Support from the HR department</i></p> <p><i>Funding to attend conferences</i></p> <p>Open-ended question:</p> <p><i>Does the institution need to make any changes in order to keep talented employees? If yes, please specify what needs to be done</i></p>
Exit management research may identify reasons why employees would leave the organisation	<p>If you have ever thought of leaving your institution what would be the most likely reasons?</p> <p>Please choose your top 5 reasons by marking your choices with an X.</p> <p>Open-ended question:</p> <p><i>Have you ever looked for another job? If you have answered yes to any of the above options please specify why</i></p>
The relationship between the employee and their direct line manager may be a key retention factor	<p>How do you rate your relationship with your supervisor/manager or direct line manager?</p> <p>Do you trust your supervisor?</p> <p>Does your supervisor have your best interests at heart?</p> <p>Does your line manager support your individual career development?</p>
Employee retention research should identify if employees are engaged in active job search	<p>Have you ever looked for another job?</p> <p>Have you applied for a promotion?</p> <p>Are you applying to other organisations?</p> <p>Have you put your CV on the internet?</p> <p>Have you been headhunted?</p>
Specific biographical factors may influence retention	<p>Age</p> <p>Gender</p> <p>Duration of employment</p> <p>Level of education</p> <p>Race</p>

4.8.2 Item generation based on theoretical relationships between constructs

As recommended by the scale development process of DeVellis (1991), a literature review was conducted in order to understand the scope and constructs of the domain of interest, namely employee turnover and retention. This literature review has been described in section 3.2. Following the thematic analysis of the key participant interviews the constructs were revisited to determine if theoretical relationships could assist in item generation. Due to the research design of this particular study the qualitative analysis of key participant interviews would provide the framework and the greater part of the content for the item generation. However, the theoretical relationship between constructs provided additional clarity on items and the wording of items to be included in the scale.

Pelled and Xin (1999:888–890) reported that the evaluation of mood (positive and negative affect) could be linked to subsequent employee withdrawal behaviour including employee turnover. In the present study the word “unhappy” was chosen to depict negative mood states that may influence a decision to leave the organisation.

When considering turnover intentions and actual turnover in the same study, Vandenberghe and Bentein (2009) found a link between affective commitment to supervisors and turnover intentions in two samples while in the third sample affective commitment to supervisors was the only significant predictor of actual turnover. The relationship between the employee and his supervisor/line manager from the perspective of the employee was considered in item development in the present study.

Attempts to establish a relationship between job performance and voluntary resignations have produced “elusive” results (Allen & Griffeth, 1999:526-527). However, it appears that performance measures can also be used as a retention measure. Performance measures are indicators of the extent to which employees are helping the organisation meet its business objectives (Malik & Ghafoor, 2011). Performance measures can be linked to in-role behaviours that are recognised by the organisation's formal reward system, or extra-role behaviours such as

organisational citizenship behaviour (Zhao *et al.*, 2007). For the purposes of this study, it was important to determine whether or not the performance appraisal system was regarded as fair by employees, as this may affect employee retention and turnover (Pienaar & Bester, 2008). They also found, for example, that early career academics are likely to leave their institutions when performance appraisals are unfair, discriminative, and not applied consistently. Whitford and Coetsee (2006) propose that the underlying performance management philosophy of the organisation towards talented individuals needs to be specified before effective performance management criteria can be applied.

The stated intention of employees that they will leave their current organisation has regularly been used in cross-sectional studies where intention to quit is the dependent variable (Morrell *et al.*, 2001). Cohen (1993) developed a scale measuring “withdrawal intentions” that has since been named “intention to quit” in subsequent studies (Du Plessis *et al.*, 2010; Veldtman, 2011). The 3-item scale developed by Cohen (1993:79) consists of the following questions:

“I think a lot about leaving the organisation.”

“I am actively searching for an alternative to the organisation.”

“When I can I will leave the organisation.”

Intention to quit has been studied in the South African context in cross-sectional studies to investigate a potential relationship between an independent variable, such as satisfaction with performance appraisals, and intention to quit as the dependent variable (Du Plessis *et al.*, 2010; Veldtman, 2011). Measurement of intention to quit in contrast with actual turnover has been discussed previously in section 3.2.5.

A summary of the items generated from theoretical relationships among constructs is presented in Table 4-9.

Table 4-9: Items generated from theoretical relationships among constructs

Theoretical construct	Scale development items generated or adopted from literature
<p>The reasons employees leave and the reasons employees stay may not be the same (Harman <i>et al.</i>, 2007:53; Tanova & Holtom, 2008:1554).</p>	<p>Open-ended question: <i>What motivates you to stay at your current organisation?</i></p> <p>Scale item: <i>If you ever think of leaving your institution what would be the most likely reasons?</i></p>
<p>Intention to quit is used in numerous, cross-sectional turnover and retention studies to examine a potential relationship between an independent variable such as “satisfaction with performance appraisals” and intention to quit as the dependent variable (Kuvaas, 2006:516).</p>	<p>Listed below are statements that reflect your intention to leave the organisation in the near future:</p> <p><i>I think a lot about leaving the organisation.</i></p> <p><i>I am currently searching for employment outside this organisation.</i></p> <p><i>When possible, I will leave the organisation.</i> (Adapted from Cohen, 1993).</p>
<p>Perceived fairness of the performance appraisal system can influence retention (Pienaar & Bester, 2008).</p>	<p><i>My line manager conducts fair performance appraisals.</i></p>
<p>Affective commitment of employee towards supervisor may influence retention (Vandenberghe & Bentein, 2009).</p>	<p><i>My line manager has my best interests at heart.</i></p> <p><i>Any additional comments regarding your current relationship with the line manager at your institution?</i></p>
<p>Employees leave due to dissatisfaction or unhappiness with the current organisation and work circumstances. Constructs internal to the employee have been described as “push” factors (Lee & Mitchell, 1994:51).</p>	<p><i>Unhappy about financial compensation.</i></p>
<p>Employees leave due to greater opportunities in the new organisation. Job alternative research factors have been described as “pull” factors (Lee & Mitchell, 1994:51).</p>	<p><i>Would leave for more pay in another company.</i></p>
<p>Employees leave because they have no choice. Involuntary turnover is controlled by the organisation (Shaw <i>et al.</i>, 1998).</p>	<p><i>Would only leave if I was retrenched.</i></p>
<p>Unavoidable turnover would be voluntary resignations due to reasons over which the organisation has no control which are usually non-work-related (Morrell <i>et al.</i>, 2001).</p>	<p><i>Would leave if my spouse was transferred.</i></p>

The items generated from theoretical constructs that have been listed in Table 4-9 were used in the development study, with some items used in the measurement scale and others included as open-ended questions.

4.8.3 Item generation based on review of organisational data

The key participants who participated in the research study provided access to organisational data including exit management research, employee turnover data, and exit interview results. The organisational data analysis and exit interview analysis is discussed in sections 4.6.3 and 4.7 respectively.

Exit management research including interview data and turnover data provide additional detail as to the types of questions asked in exit interviews and the reasons employees provide for leaving the organisation. Branham (2005) uses retrospective research on exit interviews conducted by the Saratoga institute as the method for determining the reasons that employees leave the organisation and distinguishes between attraction factors or pull factors towards a new job and dissatisfaction or push factors which are factors that influence employees' decision to leave. Considering both "push and pull" factors would be more likely to produce valuable insights into voluntary turnover (Lee & Mitchell, 1994:52).

Exit interview research has as limitation the fact that employees may in the exit interview not be honest about their reasons for leaving. In the present study, exit interview research contributed to the content items for the section "*most likely reasons for employees to leave the current organisation*" and the stand-alone item "*Would you recommend your organisation to a friend looking for a job?*"

Table 4-10 summarises the 18 items generated for the "*most likely reasons to leave the current organisation*" ranking scale. These items were a combination of the exit management research, key participant interviews and theoretical constructs. Attraction factors are those that 'pull' the employee towards another job while dissatisfaction factors are those that 'push' the employee away from their current job

(Harman *et al.*, 2007). The distinction between voluntary/involuntary turnover and avoidable/unavoidable turnover has been discussed in section 3.2.2.

Table 4-10: Most likely reasons to leave - item generation

Most likely reasons to leave	Attraction/ dissatisfaction	Individual control: voluntary /involuntary	Organisational control: avoidable /unavoidable
Unhappy about financial compensation	Push	Voluntary turnover	Avoidable
Would leave for more pay in another company	Pull	Voluntary turnover	Avoidable
Would leave for a promotion	Pull	Voluntary turnover	Avoidable
Retirement	n/a	Involuntary turnover	Unavoidable
Would leave for a career change	Pull	Voluntary turnover	Unavoidable
Would leave to start my own business	Pull	Voluntary turnover	Unavoidable
Would leave for ill health/disability	n/a	Involuntary turnover	Unavoidable
Would leave for a job closer to home	Pull	Voluntary turnover	Avoidable
Unhappy about career development opportunities	Push	Voluntary turnover	Avoidable
Unhappy about the job itself	Push	Voluntary turnover	Unavoidable
Unhappy about company policies	Push	Voluntary turnover	Avoidable
Unhappy about the number of hours I am required to work	Push	Voluntary turnover	Avoidable
Would leave for personal reasons such as family responsibility	Pull	Voluntary turnover	Unavoidable
Would leave if my spouse was transferred	Pull	Voluntary turnover	Unavoidable
Unhappy about the people I have to work with	Push	Voluntary turnover	Avoidable
Unhappy about training opportunities	Push	Voluntary turnover	Avoidable
Would leave to study further	Push	Voluntary turnover	Avoidable
Would only leave if I was retrenched	n/a	Involuntary turnover	Avoidable

4.9 SCALE DEVELOPMENT PROCESS – STEP 3: DETERMINE SCALE AND MEASUREMENT FORMAT

In Step 3 decisions are made on the type of scale, format of items, number of response categories, odd or even numbers of responses and response format (DeVellis, 1991:61-74). The scale and measurement formats developed for this particular study are described in the following section.

4.9.1 Likert statements (6-point)

A sector of items was developed using statements in a 6-point Likert-style response format. Likert style rating questions allow the participants to indicate their opinion both by expressing a direction of agreement and a strength of agreement (DeVellis, 1991:68; Saunders *et al.*, 2007:372). Rating scales that follow this methodology were first developed by Rensis Likert in the 1930's and are still frequently utilised in present day research (Leedy & Ormrod, 2005:185). The 6-point scale eliminates a mid-point or neutral response as would be the case if using a 5-point scale. These sections deal with the employee's attitude towards compensation and recognition and elements of the supervisor relationship that are very personalised and individual. The 6-point scale would enable a more refined distinction of attitude than a four or five point scale as it permits for slight to strong agreement or disagreement. In this employees were asked to what extent they agree or disagree with specific statements as demonstrated in the following example:

Statement	Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
<i>My basic salary is adequate</i>	1	2	3	4	5	6

4.9.2 Likert statements (4-point)

Similar to the example above, the 4-point Likert statement was used to elicit an opinion from the participants between satisfaction and dissatisfaction with a variety of institutional factors. The 4-point scale avoids using a neutral mid-point and the coding used more extreme wording in order to determine a positive or negative opinion on the statement. The 4-point scale was utilised in the Retention section in an attempt to elicit a distinct expression of either satisfaction or dissatisfaction toward external institutional factors that are beyond the employee's control. For example, to what extent are you satisfied with the following factors in your institution?

Statement	Extremely dissatisfied	Dissatisfied	Satisfied	Extremely Satisfied
<i>Affirmative action</i>	1	2	3	4

4.9.3 Open-ended questions

Open-ended questions intended to elicit qualitative data were included as part of the measuring instrument. The literature review of the content domain revealed extensive research and a wide variety of factors that influence turnover and retention. In addition, the key participant interviews indicated diverse retention strategies and talent management practices in different organisations. It was thus surmised that the scale items could not possibly cover all the dimensions relevant to turnover and retention and thus opportunity should be provided for participants to raise additional issues pertinent to the content domain. Open-ended questions are included in an attempt to obtain an "authentic understanding of people's experiences" (Silverman, 2011:44). Qualitative responses enable diverse views and complexity of the construct to be appreciated (Brown, 2010). With this hypothesis in mind open-ended questions of two major types were included in the measurement instrument:

- Employees were provided with prompting questions or given space to comment on the scale items. The qualitative responses provided are intended to enhance,

validate or expand on the scale items. The open-ended questions of this type that were included in the scale are:

“Any additional comments regarding your current compensation and recognition at your institution?”

“Any additional comments regarding your current relationship with your line manager at your institution?”

“If you have answered yes to any of the above options (active job search) please specify why?”

“Where applicable please elaborate on the issues above that you are extremely dissatisfied with?”

- Employees were provided with open-ended questions that are stand-alone questions. The purpose of these questions was to provide opportunities for qualitative responses that contribute to the content domain of turnover and retention. This is to ensure that responses are not limited to scale items developed from theory or from the interviews but provide an opportunity for new or diverse responses that contribute to our understanding of turnover and retention. The open-ended questions of this type include:

“Any additional comments regarding what your institution needs to do to keep you as an employee?”

Does the institution need to make any changes in order to keep talented employees? If yes, please specify what needs to be done”.

“What motivates you to stay at your current organisation?”

Open-ended questions need to be coded and analysed qualitatively and in this study this was done by means of thematic analysis using recommendations by Braun and Clarke (2006) as described previously in section 2.5.1

4.9.4 Agreement with statements – checklist method

Employees were asked a question such as *“have you ever looked for another job?”* and then provided with an instruction to choose the appropriate answer by ticking the box next to their selection. Participants were required to express their opinion; Yes or

No; agree or disagree, simply by checking or not checking the box reflecting the pre-defined list of options (Leedy & Ormrod, 2005:185). The results were analysed based on whether the participant selected the response or declined to select the response.

4.9.5 Ranking method – selection of top 5 reasons

Employees were provided with a list of choices that would influence their reason to leave the institution. They were asked to provide their top five reasons from a list of 18 reasons that were provided as options. The 18 reasons were generated as a combination of the qualitative findings of the present study, the review of exit management research and existing theoretical findings on turnover research such as push or pull factors, avoidable or unavoidable turnover and are presented in Table 4-10.

4.10 SCALE DEVELOPMENT PROCESS - STEP 4: CONDUCT ITEM ANALYSIS

In Step 4 of the scale development process it was recommended to conduct an item analysis to eliminate inadequate items. Evaluation by an expert sample can help determine content validity (DeVellis, 1991:43). In the development of this scale an expert panel was involved in the content validation of the first draft of the scale. The expert panel consisted of two persons with knowledge in the field of turnover and retention research, both practitioners and academics, and were provided with information about the research objective of the study and asked to rate items in terms of adequacy. In this study the researcher followed the recommendations of DeVellis (1991:7576) to ask the expert panel specific questions:

- “How relevant do you think each item is?”
- “Please evaluate each item's clarity and conciseness.”
- ”Please point out confusing items and suggest alternative wording.”
- “Please indicate any other items or methods that would help to diagnose employee retention.”

A total of 18 participants were given copies of the questionnaire and asked to evaluate the items in terms of the above instructions. The panel of experts included the 11 key participants who had participated in the interviews as well as seven additional academics and human resources professionals. Revisions were made to item content as well as to the measurement format of the items. At the time of the item analysis a sample suitable for a developmental study had been identified in academia. For the purpose of the developmental study, the following content domain items relevant to higher education institutions and the retention of academics were added:

- mentorship opportunities for academic staff;
- funding from the institution to attend conferences;
- funding from the institution for research publications;
- research funding from the institution for professional registrations.

In addition the word “organisation” was replaced with the word “institution” which was deemed more suitable for the higher education domain.

As a result of the item analysis the pool of items was grouped into a survey questionnaire consisting of the following five sections:

Section A: Biographical information: included name of university, gender, age, home language, ethnicity, education, years of service, and number of years in current job.

Section B: Factors that would encourage employees to stay in the organisation. The two most dominant retention themes identified in the key participant interviews were included in this section. First, the respondents were requested to indicate how they felt about compensation and recognition for the work that they do. This part of the questionnaire measured nine compensation-related items on a six-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (6). Second, the respondents were requested to indicate how they rated their relationship with their immediate supervisor/manager or direct line manager. Nine items referring to trust, communication, feedback, career development, communication and performance appraisals were presented using the six-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (6).

Section C: Factors that would encourage respondents to leave the organisation. First, the respondents were required to indicate whether they had been searching for alternative employment. Respondents were required to respond to eight job search-related questions including whether or not they had applied for jobs outside of academia. Second, the respondents were requested to indicate the five *most likely reasons* out of 18 options provided, of why they would leave their institutions. The 18 options were identified from the literature and the qualitative analysis of the key participant interviews and included “push factors”; “pull factors”; avoidable and unavoidable turnover options (Lee & Mitchell, 1994:51; Morrell & Arnold, 2007). Examples of these 18 options include “unhappy about career development opportunities”, “would leave for a promotion”; “would leave to study further”; “would leave if my spouse was transferred”. All 18 options have been described previously in Table 4-10.

Section D: Satisfaction with Institutional Practices. This section focused on the respondent's satisfaction with 17 items related to human resources and HEI practices. Responses were measured on a 4-point Likert scale ranging from *Extremely dissatisfied* (1) to *Extremely satisfied* (4). An open-ended question was included to allow respondents to elaborate on the practices with which they were dissatisfied. The content of the items were generated from the results of the interviews and academic reviewers. The reason for including satisfaction items was based on the literature review including the recommendation by Smither (2003:20) to include “routine diagnostic checks” on the level of employee satisfaction. Examples of these items include satisfaction with “sufficient access to information in order to do my job”; “institutional leadership” and “talent management policies in the institution”.

Section E: Intention to quit. This, the final section, focused on the respondent's intention to leave the organisation, and consisted of three items, with responses measured on a 6-point Likert scale ranging from *Strongly disagree* (1) to *Strongly agree* (6). Acceptable internal consistencies of 0.883 (using Cronbach's alpha) were found when utilising Cohen's (1993) withdrawal intentions measurement formulated in a previous South African study (Du Plessis *et al.*, 2010). The 'Intention to Quit' measure was similar to the 3-item withdrawal intentions scale developed by Cohen (1993) with slight variations:

- Item 1 remained identical: “*I think a lot about leaving the organisation*” (Cohen, 1993).
- In Item 2 more direct wording was used, “*I am currently searching for employment outside the organisation*” as opposed to, “I am actively searching for an alternative to the organisation”. The decision to change the wording was to ensure that the “alternative” in the Cohen (1993) study actually referred to employment and not perhaps to other factors such as retirement or starting a business.
- Item 3 used very similar wording to the Cohen (1993) study “When I can” was replaced with “*When possible I will leave the organisation*”.

A final item that did not form part of the intention to leave scale was included “*would you recommend your current institution to a friend looking for a job?*” This item was included based on a recommendation from the key participant interviews and originated from exit interview data reviewed in section 4.6.3.

4.11 SCALE DEVELOPMENT PROCESS - STEP 5: SELECT VALIDATION ITEMS

In Step 5 it is recommend to include validation items that can be administered to a developmental sample and provide clarity on the extent of convergent validity or divergent validity by means of social desirability scales or other response tendencies (Tharenou *et al.*, 2007:165). However, it is a limitation of this research that direct validation items were not included. The research only used repetition of items that measure the same construct to determine if similar or different responses were provided. Diverse responses to the same construct may indicate inaccuracy or a random response pattern, either of which would question the validity of including that employee’s responses in the dataset.

Items that measure the same construct and that were included in different parts of the scale are compared in Table 4-11.

Table 4-11: Items measuring the same constructs

Theoretical construct	Items that measure the same construct
Financial compensation	<i>Likely reason to leave Unhappy about financial compensation</i>
	<i>Would leave for more pay in another company</i>
	<i>My basic salary is adequate</i>
Emotional recognition	<i>I am praised and thanked for the work that I do</i>
	<i>I get adequate emotional recognition for the work that I do</i>
Career development opportunities	<i>My line manager supports my individual career development</i>
	<i>Unhappy about career development opportunities</i>
Training opportunities	<i>Unhappy about training opportunities</i>
	<i>Satisfaction with funding from the institution to attend conferences</i>

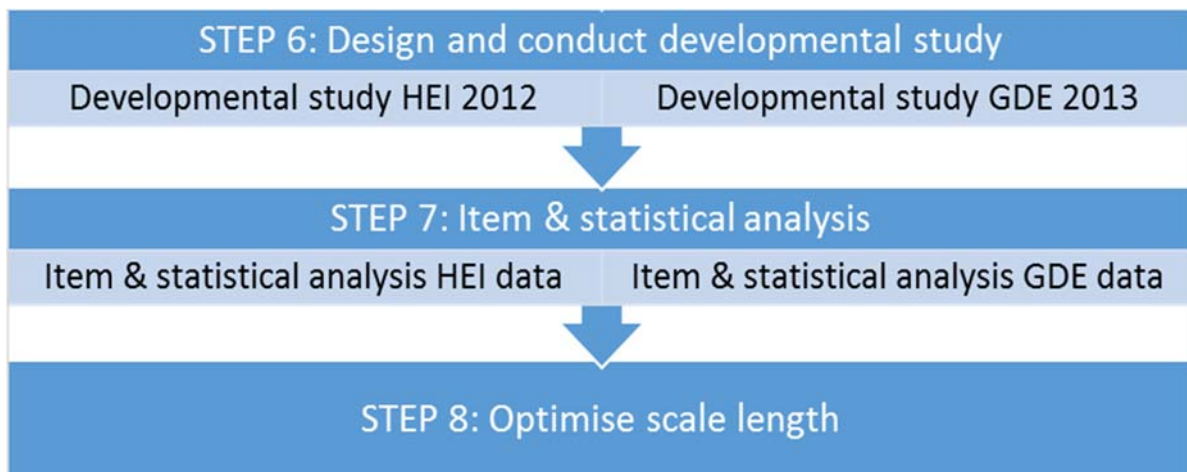
The above items were included in the measurement scale utilised in the developmental study in the HEI sample (discussed in Chapter 5) and the general education sample (discussed in Chapters 6 to 8).

CHAPTER 5: DEVELOPMENTAL STUDY IN HIGHER EDUCATION INSTITUTIONS

5.1 INTRODUCTION

The next step in the scale development process was to design and conduct a developmental study. This is Step 6 in the process recommended by (DeVellis, 1991) and Hinkin (1995; 1998). The developmental study in the present research consisted of two distinct research studies which were part of the process recommended by Hinkin (1998) for effective scale development. In order to prevent confusion the research studies were named HEI study and GDE study. The initial phase of the developmental study will be described in this chapter using a sample from higher education institutions (HEI study). The phase of the developmental study using a larger sample from general education will be described in Chapters 6 to 8 (GDE study). A reminder of the steps in the scale development process is included in an extract from Figure 1-1.

Extract from Figure 1-1: Scale development process



In this chapter the following findings are discussed:

- the data collection approach followed in the HEI study (Step 6);
- the demographic and biographical results of the HEI study (Step 6);

- the item evaluations and statistics for each component of the measurement scale (Step 7);
- the discussion of results of the HEI study (Step 7);
- summary of results of the HEI study (Step 8)

5.2 DATA COLLECTION APPROACH IN HEI STUDY

Permission for the project was obtained from the Head of Skills and Development of Higher Education in South Africa. As part of the developmental study the employee retention diagnostic items were distributed to a sample of 360 academics from multiple tertiary institutions for higher education in South Africa. Hinkin (1995) recommended administering the scale items and validation items to a minimum sample of 150 respondents while other authors suggested 300 or more (Nunnally in DeVellis, 1991:78). Hard copies of the questionnaires were distributed through the skills development facilitators at a variety of universities. This is a purposive convenience sampling method that ensures voluntary participation as participants select themselves. Purposive sampling also implies that surveys were only distributed to participants with distinct characteristics in terms of the roles or positions they held, namely academic employees from 13 different tertiary academic institutions in South Africa. Administrative, financial, security and facilities staff at the academic institutions were excluded from the sample. The survey was one of six surveys included in the SANPAD project which had an overall objective of identifying the factors and practices that attract, develop and retain academic staff members in South African higher education institutions.

The survey was sent out in hard copy format. One of the advantages of hard copy questionnaires is that the survey respondents often feel more confident about remaining anonymous as they can see from the nature of the booklet that the information cannot be traced back to them. However, a potential disadvantage is the relatively low response rate of pen and paper questionnaires and the difficulty with correcting or querying missing data once the questionnaire has been received (Leedy & Ormrod, 2005:185).

In the interest of full disclosure regarding the nature and funding of the research, respondents were informed in writing on the front cover of each questionnaire booklet that “The Department of Human Resource Management, University of Pretoria is conducting a research project on the Attraction, Development and Retention of Academic Talent for Sustainability in South African Higher Education Institutions in collaboration with the Vrije University, Amsterdam, The Netherlands. The project is funded by The South Africa-Netherlands Research Programme on Alternatives in Development (SANPAD).”

Questionnaires were treated anonymously to protect the confidentiality and identity of respondents. For the purposes of this research the confidentiality and anonymity made it impossible to identify which respondents were top-performing employees as there was no way of accurately validating this information. Respondents were asked to complete the questionnaire within a two-week period.

5.3 DEMOGRAPHIC RESULTS OF HEI STUDY

Although the questionnaire was distributed to 360 academics only a total of 169 responses were received which represented a response rate of 46.9%. Of the total of 169 responses received, 153 questionnaires were screened as usable for data analysis. The tertiary institutions that participated in the HEI study are listed in Table 5-1.

Table 5-1: List of institutions in HEI study

No.	University	City /Province	n
1	University of Limpopo	Polokwane	14
2	University of Pretoria	Pretoria	39
3	Mangosutho University of Technology	Durban	12
4	Central University of Technology	Bloemfontein	8
5	CPUT	Cape Town	13
6	UNISA	Pretoria	4
7	Fort Hare	Eastern Cape	15
8	UFS	Bloemfontein	19
9	Nelson Mandela	Port Elizabeth	12
10	University of Johannesburg	Johannesburg	6

Chapter 5: Developmental study in HEIs

11	Durban University of Technology	Durban	10
12	Walter Sisulu University	Mthatha	12
13	University of Zululand	Empangeni	5

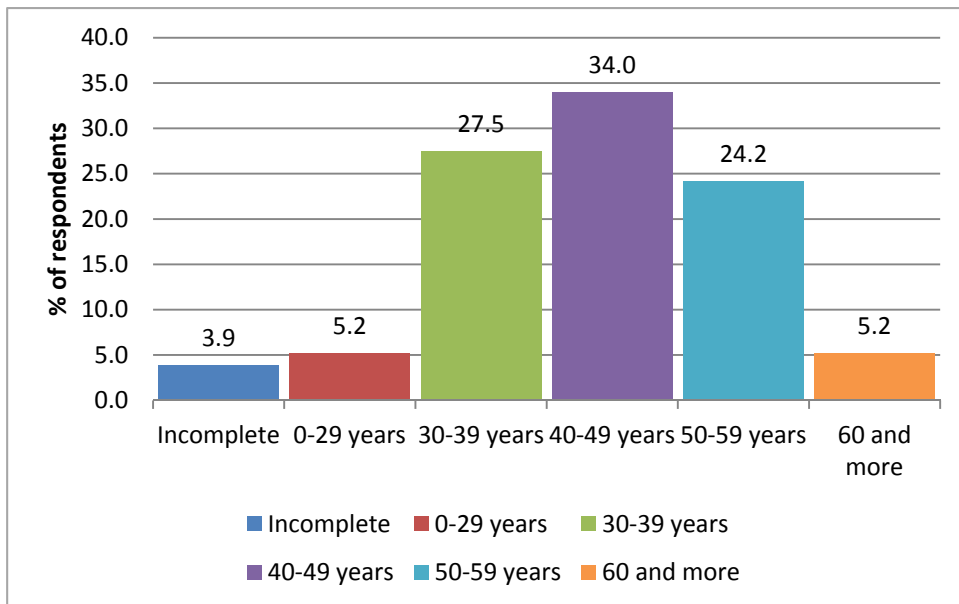
The distribution of respondents provided a range of geographical factors and institutional differences. Numbers in the HEI study were too small for additional analysis of institutional differences or comparisons. Where secondary data was made available, such as the exit management research data, the confidentiality of the institution was protected. The origin of the data, which would have indicated which institution the respondent was from, was not included in any further data analysis. All respondents were given numeric codes and the data capture and coding were conducted by an independent third party. Responses were captured in Excel and imported into SPSS 20, 2012. All responses were stored and archived in a confidential and ethically responsible manner. Qualitative analyses of open-ended questions were linked to the numeric code of the respondent and no names were recorded at any stage of the coding process.

Biographical results of the HEI study (n=153) are provided in the following section to assist in understanding the participants in the study and to provide context for the research findings. Non-responses or incomplete responses are reported on in order to understand if an unusually high non-response rate is linked to a specific question. All biographical and demographic data has been treated as non-metric data and the frequency of the data is reported (Hair *et al.*, 2010:7). Frequency data is reflected as a percentage of the HEI study respondents. Frequency refers to the number of occurrences of categories of values, usually reported so that the lowest and highest values of the variables are clear (Saunders *et al.*, 2007:422).

The age category of respondents in the HEI study, reflected as a percentage of the total number of respondents, is displayed in Figure 5-1. The majority of respondents were in the age category of 40 to 49 years old. On a cumulative basis, 63% of respondents were older than 40 years of age.

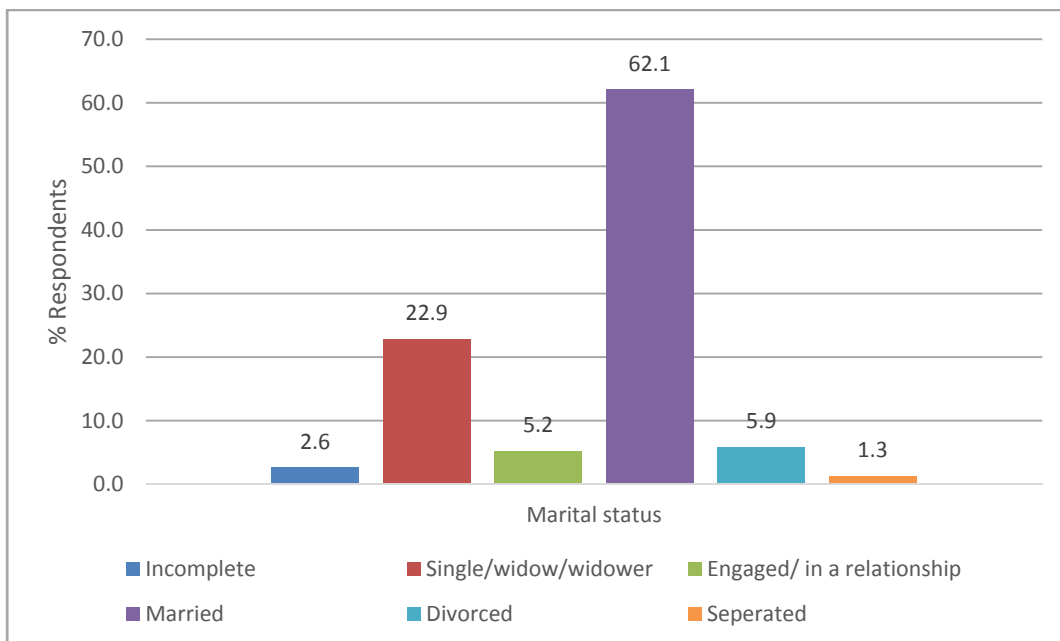
Chapter 5: Developmental study in HEIs

Figure 5-1: Age category of respondents in HEI study reflected as percentage



In Figure 5-2 the marital status of the respondents in the HEI study is shown as a percentage and indicates that the vast majority of respondents in the HEI study were married (62.1%).

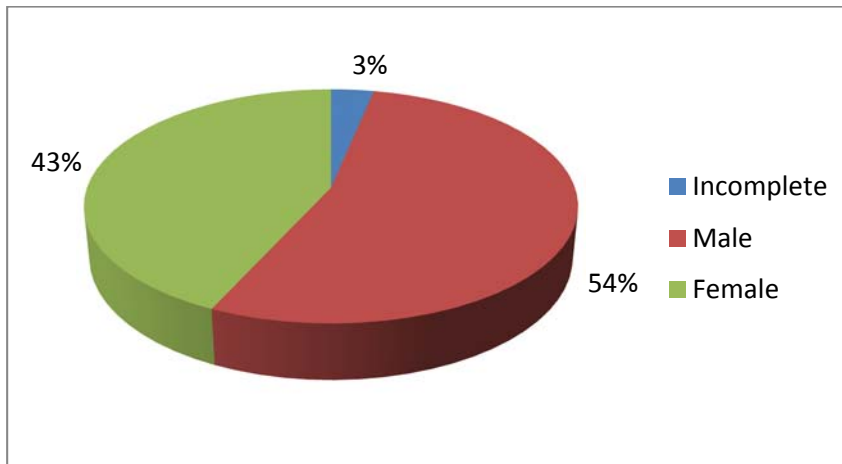
Figure 5-2: Marital status of respondents in HEI study reflected as percentage



Chapter 5: Developmental study in HEIs

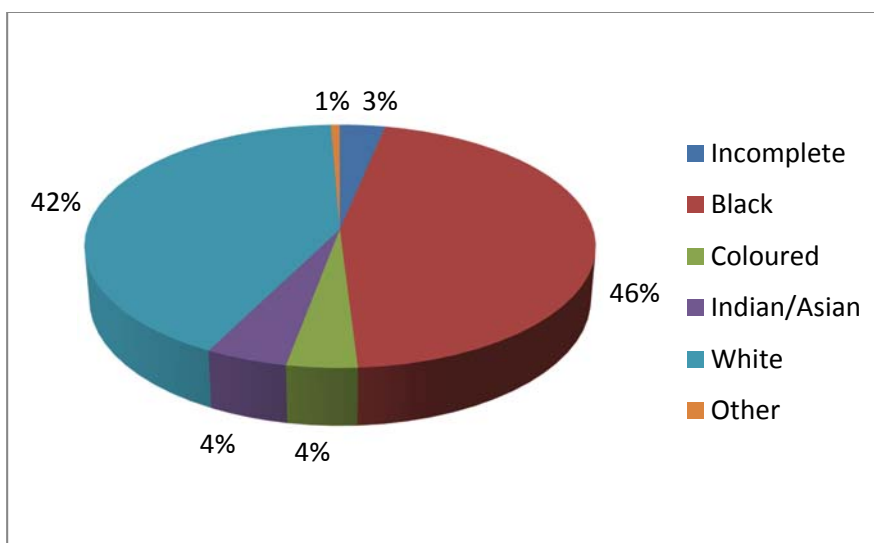
Figure 5-3 shows that slightly more males (54%) than females (43%) completed the HEI survey. Incomplete gender data is similar to incomplete age data (4%) so no additional inferences need to be made on that account.

Figure 5-3: Gender reflected as percentage of sample in HEI study



From Figure 5-4 it emerges that the majority of the respondents in the HEI study were black (46%); the second largest category was white (42%); Indian and coloured employees each made up 4% of the sample while 1% of the sample regarded themselves as being of “other” ethnic origin and 3% declined to choose an ethnic response.

Figure 5-4: Ethnicity of respondents in HEI study reflected as percentage



Chapter 5: Developmental study in HEIs

In Table 5-2 the home language selected by the respondents in the HEI study is expressed as a frequency and a percentage of the sample.

Table 5-2: Home language selections of respondents in HEI study

Home Language	Frequency	Percent
Incomplete	7	4.6
Afrikaans	42	27.5
English	46	30.1
Indigenous	50	32.7
Other	8	5.2
Total	153	100.0

Indigenous home languages made up the highest percentage of respondents in the HEI study with a total of 32.7% selecting an official indigenous home language, English was the next most spoken language at 30.1% and Afrikaans followed with 27.5%. A total of 5.2% of respondents selected “other” which implied that their home language was not a South African official language. In addition to English and Afrikaans, the following language options were provided: TshiVenda, IsiZulu, Sepedi, IsiNdebele, Sesotho, IsiXhosa, Setswana, Xitsonga, and SiSwati. Due to the small number of participants in the HEI study the breakdown of indigenous language groups caused concerns about possible identification of participants and they were thus reported on as a cumulative group.

In Table 5-3, the highest educational qualification of the individual respondents in the HEI study are grouped into five qualification categories. The majority of respondents in the study (40.5%) had master’s degrees and 39.2% of respondents had doctorates. On a cumulative percentage 79.7% of respondents had either a master’s degree or a doctorate.

Chapter 5: Developmental study in HEIs

Table 5-3: Highest educational qualification of respondents in HEI study

Educational Qualification	Frequency	Percent
Incomplete	3	2.0
Bachelor's degree	4	2.6
4-year degree or honours	24	15.7
Master's degree	62	40.5
Doctorate	60	39.2
Total	153	100.0

In Table 5-4, the number of years' experience of the respondents is presented per age category. The majority of respondents had less than 10 years' experience (66.7%) with the next highest category of experience being 11 to 20 years' (22.9%).

Table 5-4: Number of years' experience per age category

Years' Experience	Frequency	Percent
0–10	102	66.7
11–20	35	22.9
21–30	12	7.8
30 and more	4	2.6
Total	153	100.0

In Table 5-5, the employment type of the respondents is presented. The majority of respondents in the HEI study were permanent employees (78.4%) which meant that they received all the benefits that the organisation had to offer, namely medical aid, pension and leave.

Table 5-5: Employment type of respondents in HEI study

Employment Type	Frequency	Percent
Incomplete	3	2.0
Permanent	120	78.4
Temporary	12	7.8
Fixed term	17	11.1
Hourly paid	1	0.7
Total	153	100.0

5.4 ITEM EVALUATIONS AND VALIDATION ANALYSIS

A basic items analysis will help identify and remove ambiguous items, and items that do not discriminate between the respondents (Tharenou *et al.*, 2007:167). At this stage, basic descriptive statistics such as measures of central tendency and measures of variability are helpful in determining the value of the items in the scale (Leedy & Ormrod, 2005:256). This research study followed the advice of DeVellis (1991:82–85) to include item-scale correlations; item variance; item means and coefficient alpha when appropriate. The data analysis was conducted using the SPSS 20 statistical analysis programme (SPSS, 2012). The HEI study data utilised interdependence techniques where all the variables were analysed at the same time in an attempt to find the underlying structure of the relationships among the items in the scale (Hair *et al.*, 2010:14).

Due to the different format of the questions the results were linked to the nature and measurement of items as they appeared in the measurement instrument either as scaled items, ranked items or open-ended questions. For the scaled items both descriptive statistics and exploratory factor analysis were used. Findings for the scale items are reported in the following order:

- statistics for satisfaction with compensation and recognition;
- statistics for employee/manager relationship;
- statistics for satisfaction with institutional practices
- statistics for Intention to Quit scale;

- statistics for *job search* and *most likely reasons to leave*.

5.4.1 Statistics for Compensation and Recognition

The Compensation and Recognition section of the survey utilised a 6-point Likert scale with a direct instruction to employees that they were responding to factors that would encourage employees to stay in the organisation and aimed at determining how “*you feel about your compensation and recognition for the work you do*”. Statements were coded as follows:

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

5.4.1.1 Descriptive statistics for Compensation and Recognition items

The frequencies, means, standard deviations, skewness and kurtosis results for the Compensation and Recognition items are summarised in Table 5-6. Minimum response was a score of 1 (strongly disagree) and maximum response was a score of 6 (strongly agree). No items were worded in an inverse direction. In understanding the basic statistics any mean score less than 3 would indicate that the average respondent disagreed with the statement. With regards to the statement “My basic salary is adequate” there was disagreement from 56% of respondents. The statement that emerged as having the lowest mean was “my bonus structure reflects my contribution to the institution”. Recognition items in the scale included adequate emotional recognition and an agreement that the employee was praised and thanked for the work they did. Although the majority of employees in the present study perceived adequate emotional recognition (57% of sample), this still implied that 43% of the employees did not perceive the emotional recognition they received as adequate. In contrast, there was a 67% agreement amongst respondents that they were being praised and thanked for the work they did.

Chapter 5: Developmental study in HEIs

Table 5-6: Descriptive statistics Compensation and Recognition items

Scale and items	Strongly disagree			Strongly agree			Mean	SD	Skew.	Kurt.
	1	2	3	4	5	6				
Compensation and Recognition scale	7	30	40	48	18	3	3.35	1.083	-0.045	-0.690
items										
1. Basic salary is adequate	28	38	20	35	26	6	3.07	1.500	0.136	-1.180
2. Medical aid benefits are adequate	14	22	16	36	53	12	3.84	1.467	-0.55	-0.805
3. Pension benefits are adequate	17	20	27	35	40	13	3.66	1.488	-0.312	-0.914
4. Praised and thanked	20	16	13	48	43	12	3.75	1.497	-0.571	-0.715
5. Fairly compensated	21	32	20	44	29	5	3.28	1.435	-0.129	-1.106
6. Bonus structure is fair	31	25	23	29	32	10	3.24	1.612	0.002	-1.266
7. Incentives and perks	29	29	22	41	24	8	3.17	1.517	0.017	-1.120
8. Bonus structure reflects contribution	39	34	19	36	19	5	2.85	1.508	0.261	-1.148
9. Adequate emotional recognition	18	27	21	46	29	12	3.5	1.474	-0.181	-0.942

The standard deviations approximated 1.5 measurement points above or below the mean with the highest standard deviation being 1.612 and the lowest being 1.474. This pointed to a range of responses that agreed or disagreed with the statement with limited outliers (strongly agree or strongly disagree). Evaluation of the skewness revealed that two of the items reflected a positively skewed distribution (0.136 and 0.261) which meant that the majority of the responses were bunched to the left of the mean — towards disagreement with the statements, “*My basic salary is adequate*” and “*My bonus structure reflects my contribution to the institution*”. An additional two items reflected an almost neutral distribution (0.002 and 0.017) and pertained to the fairness of the *bonus structure* and *incentives and perks*. Five of the above items produced a negatively skewed distribution ranging from -0.129 to -0.571 and these negative values indicated that the majority of the responses bunched to the right of the mean towards agreement with the statements.

Chapter 5: Developmental study in HEIs

The kurtosis analysis of the Compensation and Recognition items all reflected a negative value and thus a flat distribution in contrast to a normal distribution. The two items with the strongest negative kurtosis were “*my bonus structure is fair*” and “*my bonus structure reflects my contribution to the institution*”.

5.4.1.2 Validation analysis for Compensation and Recognition items

Results for sampling adequacy and sphericity

The KMO result of 0.801 obtained is above the minimum requirement of 0.50 recommended by Hair *et al.*, (2010:92) as an acceptable measure of sampling adequacy. Bartlett’s test of sphericity produced results at 0.000 which implies that the correlations within the correlation matrix are significant and several of the correlations coefficients are larger than 0.3 (Hair *et al.*, 2010:92; Field, 2009:782). Adequate findings on both measures of sampling adequacy and sphericity implied that an exploratory factor analysis could be conducted.

EFA for Compensation and Recognition items

An exploratory factor analysis using principal component analysis was conducted on the nine Compensation and Recognition items. The communalities for the Compensation and Recognition items are reported in Table 5-7.

Table 5-7: Communalities for Compensation and Recognition items

	Initial	Extraction
1. My basic salary is adequate	1.000	0.612
2. My medical aid benefits are adequate	1.000	0.396
3. My pension benefits are adequate	1.000	0.524
4. I am praised and thanked for the work that I do	1.000	0.436
5. I am fairly compensated for the work that I do	1.000	0.615
6. The bonus structure is fair	1.000	0.400
7. The incentives and perks make my job worthwhile	1.000	0.598
8. The bonus structure reflects my contribution to the institution	1.000	0.611
9. I get adequate emotional recognition for the work that I do	1.000	0.478
Extraction method: principal component analysis.		

Chapter 5: Developmental study in HEIs

Communalities refer to “the total amount of variance an original variable shares with all other variables” (Hair *et al.*, 2010:92) and the communalities should be above 0.40 or ideally 0.50 in order for the item to be kept in the scale (Hair *et al.*, 2010:121–122). Items with low communalities can possibly be removed from the scale but only if the variable is of minor significance in the study (Hair *et al.*, 2010:120). The item with lowest communality was “*my medical aid benefits are adequate*” (0.396). Medical aid benefits form a key part of the compensation package in education and a decision was made to retain it for conceptual reasons.

The eigenvalues and total variance explained are reported in Table 5-8. The single factor extracted explained 51.887% of the variance.

Table 5-8: Total variance explained for Compensation and Recognition items

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.	4.670	51.887	51.887	4.670	51.887	51.887
2.	1.149	12.770	64.657			
3.	1.095	12.161	76.818			
4.	0.756	8.395	85.213			
5.	0.398	4.423	89.636			
6.	0.292	3.241	92.877			
7.	0.252	2.801	95.678			
8.	0.224	2.485	98.162			
9.	0.165	1.838	100.000			

Extraction method: principal component analysis.

The EFA component matrix for the Compensation and Recognition items is displayed in Table 5-9. The item loadings were acceptable, ranging from 0.629 to 0.782 and all the items were above the cut-off point of 0.32 and the items were all thus retained as part of the scale (Tabachnick & Fidell, 2001). Inspection of the pattern matrix showed that items loaded onto one single factor. The single component extracted was labelled *Compensation and Recognition*.

Chapter 5: Developmental study in HEIs

Table 5-9: Factor analysis - component matrix for Compensation and Recognition

Items	Component
	1
1. My basic salary is adequate	0.782
2. My medical aid benefits are adequate	0.629
3. My pension benefits are adequate	0.724
4. I am praised and thanked for the work that I do	0.660
5. I am fairly compensated for the work that I do	0.784
6. The bonus structure is fair	0.633
7. The incentives and perks make my job worthwhile	0.773
8. The bonus structure reflects my contribution to the institution	0.781
9. I get adequate emotional recognition for the work that I do	0.691
Extraction method: principal component analysis.	

5.4.1.3 Reliability analysis for Compensation and Recognition items

The overall reliability finding for the 9-items scale is 0.881 which can be regarded as good reliability (Hinkin, 1995). The item total statistics for all 9 items are reported in Table 5-10.

Table 5-10: Item total statistics – reliability for Compensation and Recognition items

Item	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
1. My basic salary is adequate	27.12	74.738	0.692	0.864
2. My medical aid benefits are adequate	26.36	78.826	0.535	0.877
3. My pension benefits are adequate	26.54	76.333	0.639	0.868
4. I am praised and thanked for the work that I do	26.48	77.893	0.563	0.875
5. I am fairly compensated for the work that I do	26.90	75.370	0.700	0.863
6. The bonus structure is fair	26.99	77.448	0.533	0.878
7. The incentives and perks make my job worthwhile	27.04	74.509	0.691	0.864

Chapter 5: Developmental study in HEIs

Item	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
8. The bonus structure reflects my contribution to the institution	27.34	74.006	0.713	0.862
9. I get adequate emotional recognition for the work that I do	26.71	77.244	0.599	0.872

Reliability findings for internal consistency reliability met the required criteria and indicated that all items from the factor labelled *Compensation and Recognition* could be retained in the scale as no single item had a significant effect on Cronbach's alpha score for reliability.

5.4.2 Statistics for Management Support

As discussed in section 4.8, it became clear during the item development process that items relating to the relationship between the employees and their direct line managers were required in order to adequately explore the domain of talent retention and employee turnover. A total of nine items were included that asked the employee to “rate their relationship with their supervisor/manager or direct line manager.” Respondents were asked to select the extent of their agreement or disagreement with ten different statements using a 6-point Likert scale that was labelled as follows:

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

5.4.2.1 Descriptive statistics for Management Support

In Table 5-11 the frequency, means, standard deviation, skewness and kurtosis are presented for the nine items relating to the employee/line manager relationship:

Chapter 5: Developmental study in HEIs

Table 5-11: Descriptive statistics Management Support items

Scale and items	Strongly disagree			Strongly agree			Mean	SD	Skew.	Kurt.
	1	2	3	4	5	6				
Management Support	2	6	20	37	66	18	4.44	1.067	-0.967	-0.641
Items										
1. I trust my direct line manager	8	4	12	17	69	42	4.72	1.309	-1.399	1.556
2. I can communicate easily with my line manager	3	4	7	17	73	48	4.95	1.082	-1.594	3.037
3. My line manager has my best interests at heart	7	9	14	35	54	34	4.45	1.337	-0.922	0.323
4. Other people in our team work well with this line manager	2	5	13	38	72	23	4.58	1.036	-0.994	1.286
5. My line manager supports my individual career development	6	7	11	36	54	39	4.58	1.286	-1.040	0.775
6. My line manager conducts regular performance appraisals	16	17	19	37	49	15	3.86	1.489	-0.550	-0.722
7. My line manager conducts fair performance appraisals	16	11	21	29	56	18	4.01	1.499	-0.698	-0.523
8. My supervisor communicates clearly	8	9	17	24	63	32	4.44	1.371	-0.984	0.262
9. My Supervisor gives constructive feedback	10	14	20	32	48	29	4.18	1.462	-0.643	-0.482

Arithmetic means are mostly between 4 and 5 which implied that the respondents chose 'slightly agree' to 'agree' with these scale items. The highest mean of 4.95 was obtained for agreement with the statement "*I can communicate easily with my line manager*". The standard deviation for this item was 1.082 which still implied that the average respondent agreed with the statement. The largest standard deviations occurred for the items "*my line manager conducts fair performance appraisals*" and "*my line manager conducts regular performance appraisals*" which implied a wide range of responses from the mean with respondents both agreeing and disagreeing with these statements.

The item statistics for skewness showed a negatively skewed distribution for all nine items ranging from -0.643 to -1.399 which indicated that the distribution shifted to the right, contained relatively few small values and tailed off to the left of the normal distribution (Hair *et al.*, 2010:36). Due to the fact that there were no reverse scored items in this section, we could assume that the majority of respondents agreed positively with the statements. The analysis of kurtosis or height of the distribution indicated a varied pattern. The highest peak occurred around the item “*I can communicate easily with my line manager*” at a kurtosis of 3.037 and the item that produced the flattest distribution (-0.722) was “*my line manager conducts regular performance appraisals*”.

5.4.2.2 Validation analysis for Management Support items

Results for sampling adequacy and sphericity for Management Support items

Tests conducted to determine if the sample was suitable for factor analysis were the KMO and Bartlett’s test of sphericity. The KMO result was 0.891 which is above the minimum requirement of 0.50 recommended by Hair *et al.* (2010:92) as an adequate measure of sampling adequacy. Bartlett’s test of sphericity yielded a significance of 0.000 which implied that there were significant correlations among some of the variables in the correlation matrix and the data was suitable for factor analysis (Field, 2009:782).

EFA for Management Support items

An exploratory factor analysis using the principal component method was conducted on the nine items of the Management Support scale. The results showed one underlying factor for the scale that explained 66.566% of the variance.

The communalities for the Management Support items are reported in Table 5-12 and are all above a value of 0.4-0.5 which could be considered adequate (Hair *et al.*, 2010:121–122).

Chapter 5: Developmental study in HEIs

Table 5-12: Communalities for Management Support items

Communalities		
Items	Initial	Extraction
1. I trust my direct line manager	1.000	0.673
2. I can communicate easily with my line manager	1.000	0.629
3. My line manager has my best interests at heart	1.000	0.776
4. Other people in our team work well with my line manager	1.000	0.562
5. My line manager supports my individual career development	1.000	0.776
6. My line manager conducts regular performance appraisals	1.000	0.487
7. My line manager conducts fair performance appraisals	1.000	0.529
8. My line manager communicates regularly and clearly	1.000	0.778
9. My line manager gives timely and constructive feedback	1.000	0.781

Extraction method: principal component analysis.

The eigenvalues and total variance explained are reported in Table 5-13. The single factor extracted explains 66.56% of the variance.

Table 5-13: Eigenvalues and total variance explained for Management Support items

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.991	66.566	66.566	5.991	66.566	66.566
2	1.205	13.389	79.956			
3	0.497	5.527	85.483			
4	0.361	4.014	89.497			
5	0.307	3.408	92.904			
6	0.208	2.306	95.210			
7	0.196	2.176	97.387			
8	0.133	1.479	98.865			
9	0.102	1.135	100.000			

Extraction Method: principal component analysis.

The component matrix is reported in Table 5-14. The item loadings were acceptable, ranging from 0.727 to 0.884. The factor was labelled Management Support.

Table 5-14: Results for factor analysis – component matrix Management Support

Items for Management Support	Component
	1
1. I trust my direct line manager	0.821
2. I can communicate easily with my line manager	0.793
3. My line manager has my best interests at heart	0.881
4. Other people in our team work well with my line manager	0.750
5. My line manager supports my individual career development	0.881
6. My line manager conducts regular performance appraisals	0.698
7. My line manager conducts fair performance appraisals	0.727
8. My line manager communicates regularly and clearly	0.882
9. My line manager gives timely and constructive feedback	0.884

5.4.2.3 Reliability findings for Management Support

An overall Cronbach's alpha score of 0.934 was obtained for the 9 scale items labelled *Management Support* which is well above the "very high" rating which Hinkin (1995:979) gives to reliabilities above 0.8. The item reliability analysis is presented in Table 5-15. The results for internal consistency reliability showed that all items from the factor labelled *Management Support* could be retained in the scale as no single item had a significant effect on Cronbach's alpha score for reliability.

Table 5-15: Reliability – item total statistics Management Support

Component	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
1. I trust my direct line manager	35.19	74.046	0.746	0.926
2. I can communicate easily with my line manager	34.95	77.937	0.715	0.929
3. My line manager has my best interests at heart	35.45	72.060	0.822	0.922
4. Other people in our team work well with my line manager	35.32	79.152	0.672	0.931

Chapter 5: Developmental study in HEIs

Component	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
5. My line manager supports my individual career development	35.35	72.134	0.831	0.921
6. My line manager conducts regular performance appraisals	36.06	73.287	0.654	0.933
7. My line manager conducts fair performance appraisals	35.92	72.453	0.686	0.931
8. My line manager communicates regularly and clearly	35.47	70.845	0.845	0.920
9. My line manager gives timely and constructive feedback	35.75	69.066	0.854	0.919

5.4.3 Statistics for Institutional Practices

Employees were asked to express an opinion based on the question “*to what extent are you satisfied with the following factors in your institution?*”

Seventeen statements were presented as 4-point Likert style items using the following scale to encourage a stronger opinion from the respondents between satisfaction and dissatisfaction. Coding used more extreme wording in order to elicit a positive or negative response to the statement.

Statement example	Extremely dissatisfied	Dissatisfied	Satisfied	Extremely Satisfied
Affirmative action	1	2	3	4

5.4.3.1 Descriptive statistics for Institutional Practices

In Table 5-16 the range, mean, standard deviation, skewness and kurtosis for the Institutional Practices items are described.

Chapter 5: Developmental study in HEIs

Table 5-16: Descriptive statistics of Institutional Practices

Items	Extremely dissatisfied		Extremely satisfied		Mean	SD	Skew.	Kurt.
	1	2	3	4				
1. Sufficient access to information to do job	2	20	91	39	3.10	0.659	-0.388	0.368
2. Support from the HR department	17	41	71	23	2.66	0.870	-0.313	-0.510
3. Changes and restructuring in the institution	19	45	74	11	2.52	0.810	-0.364	-0.435
4. Opportunity to engage in community service projects	10	29	93	21	2.82	0.747	-0.646	0.521
5. Affirmative action	18	41	79	13	2.58	0.812	-0.439	-0.321
6. Sufficient cultural diversity in the institution	14	32	82	22	2.75	0.821	-0.532	-0.061
7. Sufficient respect for my culture in the institution	11	24	97	21	2.84	0.747	-0.778	0.787
8. Institutional leadership	12	38	83	20	2.73	0.788	-0.449	-0.046
9. Institutional values	11	28	85	26	2.84	0.795	-0.598	0.213
10. Institutional strategy	10	41	80	20	2.73	0.774	-0.361	-0.093
11. Communication from leadership	13	46	71	22	2.67	0.828	-0.241	-0.421
12. Talent management policies in the institution	16	60	64	10	2.45	0.774	-0.107	-0.392
13. Mentorship opportunities for academic staff	21	49	68	14	2.49	0.846	-0.212	-0.582
14. Funding to attend conferences from the institution	21	34	78	20	2.63	0.879	-0.446	-0.469
15. Funding for research publications from the institution	15	33	88	17	2.70	0.795	-0.597	0.057

Chapter 5: Developmental study in HEIs

Items	Extremely dissatisfied		Extremely satisfied		Mean	SD	Skew.	Kurt.
	1	2	3	4				
16. Research funding from external bodies such as the National Research Foundation	14	31	85	20	2.74	0.806	-0.582	0.054
17. Funding from the Institution for Professional Registrations	14	40	71	14	2.61	0.803	-0.370	-0.272

The results needed to be interpreted considering the 4-point Likert scale used in this scale that was chosen to encourage a stronger opinion from the respondents between satisfaction and dissatisfaction. The results for the scales showed that the respondents were mostly satisfied with sufficient access to information in order to do their jobs (85.5% of respondents). Respondents were somewhat dissatisfied with the talent management practices of the institution (51%), and mentorship opportunities for academic staff (53%). Diversity items included sufficient respect for my culture (77% of respondents indicated satisfaction); sufficient cultural diversity in the institution (67.9% of respondents indicated satisfaction) and satisfaction with affirmative action (60% of respondents). The results across the 17 items in the sample were slightly negatively skewed which implied that the majority of responses bunched to the right of the mean (Leedy & Ormrod, 2005) in the direction of satisfaction with institutional practices. The item with the highest kurtosis and the most peaked distribution was found for item 7, *sufficient respect for my culture in the institution*. The flattest distribution (negative kurtosis) was found for item 13, *mentorship opportunities for academic staff*.

5.4.3.2 Validation analysis for Institutional Practices

Results for sampling adequacy and sphericity

The 17-item satisfaction with Institutional Practices measure obtained an acceptable KMO of 0.882 while Bartlett's test of sphericity indicated a significance of 0.000 which implied that the data was suitable for factor analysis (Field, 2009:782).

EFA for Institutional Practices

Exploratory factor analyses using the principal component method was conducted on the 17-item measure. Communalities were identified using the extraction method of principal component analysis. Communalities should be above 0.40 or 0.50 in order for the item to be kept in the scale (Hair *et al.*, 2010:121–122). Communalities are reported in Table 5-17.

Table 5-17: Results for principal component analysis for communalities

Items	Initial	Extraction
1. Sufficient access to information in order to do my job	1.000	0.440
2. Support from the HR department	1.000	0.617
3. Changes and restructuring in the institution	1.000	0.642
4. Opportunity to engage in community service projects	1.000	0.462
5. Affirmative action	1.000	0.635
6. Sufficient cultural diversity in the institution	1.000	0.634
7. Sufficient respect for my culture in the institution	1.000	0.686
8. Institutional leadership	1.000	0.824
9. Institutional values	1.000	0.698
10. Institutional strategy	1.000	0.724
11. Communication from leadership	1.000	0.769
12. Talent management policies in the institution	1.000	0.632
13. Mentorship opportunities for academic staff	1.000	0.510
14. Funding from the institution to attend conferences	1.000	0.686
15. Funding from the institution for research publications	1.000	0.771
16. Research funding from external bodies such as the National Research Foundation (NRF)	1.000	0.672
17. Funding from the institution for professional registrations	1.000	0.585

The results for total variance explained and eigenvalues using the extraction method of principal component analysis are presented in Table 5-18. The results showed three underlying factors that explained 64.627% of the variance.

Chapter 5: Developmental study in HEIs

Table 5-18: Total variance explained for Institutional Practices

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.324	43.083	43.083	7.324	43.083	43.083	6.669
2	2.155	12.678	55.762	2.155	12.678	55.762	3.836
3	1.507	8.866	64.627	1.507	8.866	64.627	3.717
4	0.860	5.059	69.687				
5	0.768	4.520	74.207				
6	0.675	3.973	78.180				
7	0.613	3.603	81.783				
8	0.528	3.104	84.887				
9	0.520	3.062	87.949				
10	0.456	2.684	90.633				
11	0.343	2.020	92.653				
12	0.304	1.790	94.442				
13	0.240	1.410	95.853				
14	0.210	1.235	97.088				
15	0.190	1.119	98.206				
16	0.160	0.938	99.145				
17	0.145	0.855	100.000				

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The pattern matrix reported in Table 5-19 was obtained using an Oblimin Rotation method with Kaiser Normalisation.

Chapter 5: Developmental study in HEIs

Table 5-19: Pattern matrix for Institutional Practices scale

Items	General Institutional Practices	Institutional Funding Opportunities	Diversity and Community Service
1. Sufficient access to information to do job	0.656	0.106	-0.103
2. Support from the HR department	0.817	-0.002	-0.084
3. Changes and restructuring in the institution	0.744	-0.071	0.164
4. Opportunity to engage in community service projects	-0.028	0.356	0.516
5. Affirmative action	0.037	0.045	0.769
6. Sufficient cultural diversity in the institution	-0.005	0.030	0.791
7. Sufficient respect for my culture in the institution	0.228	-0.111	0.736
8. Institutional leadership	0.879	-0.175	0.160
9. Institutional values	0.726	0.048	0.181
10. Institutional strategy	0.835	-0.098	0.101
11. Communication from leadership	0.858	0.034	0.016
12. Talent management policies in the institution	0.788	0.085	-0.070
13. Mentorship opportunities for academic staff	0.622	0.233	-0.059
14. Funding to attend conferences from the Institution	0.097	0.813	-0.115
15. Funding for research publications from the institution	0.073	0.861	-0.045
16. Research funding from external bodies such as the National Research Foundation	-0.001	0.778	0.134
17. Funding from the institution for professional registrations	-0.010	0.723	0.143

The factor correlation matrix for Institutional Practices is reported in Table 5-20 and shows low correlations among constructs which lends support for discriminant validity (Byrne, 2010; Garson, 2011).

Table 5-20: Factor correlation matrix

Component	1	2	3
1	1.000	0.349	0.408
2	0.349	1.000	0.235
3	0.408	0.235	1.000

The three factors were labelled as follows: *Satisfaction with General Institutional Practices* (Factor 1), *Satisfaction with Institutional Funding Opportunities* (Factor 2), and *Satisfaction with Diversity and Community Service* (Factor 3). The three factors explained adequate variance for the measurement. All items showed acceptable loadings, ranging from 0.516 to 0.879 (Hair *et al.*, 2010:121) and no items were deleted.

5.4.3.3 Reliability findings for Institutional Practices

The reliability statistics for each of the three factors identified for *Institutional Practices* range from acceptable to good and are reported in Table 5-21 while the item total statistics for each of the three factors in the *Institutional Practices* scale are reported in Table 5-22.

Table 5-21: Reliability statistics for Institutional Practices

Factor	No of items	Cronbach's alpha
1. Satisfaction with General Institutional Practices	9	0.923
2. Satisfaction with Institutional Funding Opportunities	4	0.836
3. Satisfaction with Diversity and Community Service	4	0.783

Chapter 5: Developmental study in HEIs

Table 5-22: Item total statistics for Institutional Practices

Item total statistics for Factor 1	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
Sufficient access to information in order to do my job	21.38	26.034	0.571	0.922
Support from the HR department	21.81	23.337	0.732	0.913
Changes and restructuring in the institution	21.96	24.123	0.685	0.916
Institutional leadership	21.75	23.300	0.831	0.906
Institutional values	21.61	23.904	0.753	0.912
Institutional strategy	21.72	23.559	0.790	0.909
Communication from leadership	21.78	22.974	0.821	0.907
Talent management policies in the institution	22.01	24.146	0.734	0.913
Mentorship opportunities for academic staff	21.96	24.678	0.589	0.923
Item total statistics for Factor 2	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
Funding to attend conferences from the Institution	8.08	3.957	0.669	0.794
Funding from the institution for research publications	8.00	4.118	0.745	0.759
Research funding from external bodies such as the NRF	7.91	4.351	0.641	0.804
Funding from the institution for professional registrations	8.07	4.421	0.621	0.812
Item total statistics for Factor 3	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
Opportunity to engage in community service projects	8.11	3.925	0.484	0.779
Affirmative action	8.38	3.366	0.634	0.705
Sufficient cultural diversity in the institution	8.20	3.346	0.630	0.707
Sufficient respect for my culture in the institution	8.12	3.618	0.609	0.720

Chapter 5: Developmental study in HEIs

Reliability findings for internal consistency reliability meet the required criteria of Cronbach's alpha above 0.7 while two of the factors obtained results above 0.8 which can be regarded as good reliability (Hair *et al.*, 2010:92; Hinkin, 1995). These results indicated that all items from the three factors comprising *Satisfaction with Institutional Practices* can be retained in the scale as deletion of any of the single items did not result in a considerably lower Cronbach's alpha score for reliability.

5.4.4 Statistics for the Intention to Quit scale

During the scale development process discussed in section 4.8.2, the wording in two of the three items in Cohen's (1993) withdrawal intentions scale was changed. This scale is referred to as Intention to Quit in this study. A decision was made to conduct a validation analysis on the scale to ensure that the change in wording did not affect the factor analysis. Both descriptive statistics and a validation analysis for the Intention to Quit scale are reported. Respondents were asked to indicate the extent of their agreement or disagreement with each of the three statements that "*reflect your intention to leave the organisation in the near future*". The 3-item Intention to Quit scale used a Likert scale and the items were coded as follows:

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

5.4.4.1 Descriptive statistics Intention to Quit

The frequency distribution, mean, standard deviation, skewness and kurtosis for the overall Intention to Quit scale is presented in Table 5-23.

Table 5-23: Descriptive statistics of Intention to Quit scale

Items	Strongly disagree			Strongly agree			M	SD	Skew	Kurt.
	1	2	3	4	5	6				
I think a lot about leaving the organisation	34	41	20	21	20	16	2.99	1.674	0.439	-1.096
I am currently searching for employment outside this organisation	47	42	19	15	13	16	2.68	1.681	0.762	-0.694
When possible, I will leave the organisation	36	29	14	21	26	25	3.30	1.844	0.127	-1.470

On average, scores less than 3 would indicate disagreement with the statement and scores greater than 3 would indicate agreement with the statement. When examining the individual items, the intention to quit scale produced varying results. The item with the lowest mean score (2.68) using the 6-point scale, related to respondents looking for a job at the time. Considering the frequency distribution of the scale, this indicated that 59% of the respondents were not searching for employment outside the institution in contrast to 29% who were. The majority of respondents were not thinking about leaving the organisation (63%) with 37% indicating that they were thinking about leaving the organisation. Just under half of the respondents (48%) indicated slight to strong agreement with the statement '*when possible, I will leave this organisation*'. This item had the highest mean at 3.30. Analysis of the skewness indicated positively skewed distributions which implied that most of the data was bunched to the left of the mean (Leedy & Ormrod, 2005) which in this scale implied disagreement with the statements. Analysis of the kurtosis of the items revealed negative values and thus a flatter distribution when compared to a normal distribution.

5.4.4.2 Validation analysis

During the scale development process, the wording in two of the three items in Cohen's (1993) withdrawal scale was changed. Cohen (1993) described withdrawal intentions as a multi-dimensional construct and he reported different outcomes depending on whether the wording was "intention to leave the job"; "intention to

Chapter 5: Developmental study in HEIs

leave the organisation” or “intention to leave the occupation”. A decision was made to conduct a validation analysis on the scale to ensure that the change in wording applied in this study had not affected the factor analysis. The wording used is as follows:

- I think a lot about leaving the organisation.
- I am currently searching for employment outside this organisation.
- When possible, I will leave the organisation.

Results for sampling adequacy and sphericity

An acceptable KMO of 0.752 and a significance of 0.000 on Bartlett’s test of sphericity indicated the scale’s suitability for factor analysis (Field, 2009).

EFA for Intention to Quit items

Exploratory factor analyses were conducted using the principal component method and these showed one underlying factor that explained 85.649% of the variance. The total variance explained is reported in Table 5-24 and the component matrix is shown in Table 5-25.

Table 5-24: Total variance explained for Intention to Quit items

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
I think a lot about leaving the organisation	2.569	85.649	85.649	2.569	85.649	85.649
I am currently searching for employment outside this organisation.	0.258	8.617	94.266			
When possible, I will leave the organisation	0.172	5.734	100.00			
Extraction method: principal component analysis.						

Table 5-25: Component matrix – Intention to Quit items

Items	Component
	1
I think a lot about leaving the organisation	0.938
I am currently searching for employment outside this organisation.	0.930
When possible, I will leave the organisation	0.909

The items showed acceptable loadings ranging from 0.909 to 0.938. The factor was labelled Intention to Quit.

5.4.4.3 Reliability findings for Intention to Quit scale.

Reliability statistics for the three items in the Intention to Quit scale (with revised wording) showed a Cronbach's alpha of 0.914 that was very high using the Field (2009) rating. The item total statistics are shown in Table 5-26.

Table 5-26: Item total statistics – Intention to Quit scale items

Items	Scale Mean if Item Deleted	Scale variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
I think a lot about leaving the organisation	5.97	10.926	0.854	0.857
I am currently searching for employment outside this organisation.	6.26	10.910	0.836	0.870
When possible, I will leave the organisation	5.64	10.231	0.799	0.905

Reliability findings for internal consistency reliability met the required criteria and indicated that all items from the factor labelled Intention to Quit can be retained in the scale as no single item had a significant effect on Cronbach's alpha score for reliability.

5.4.5 Statistics for job search and potential reasons for leaving

For purposes of this research, the respondents were firstly asked, to indicate whether they had been seeking alternative employment by choosing one or more responses out of the eight options provided, and secondly, to choose their top five reasons out of 18 options provided, to say why they would consider leaving their HEIs. The results of the *job search* items are reported in Table 5-27.

Table 5-27: Results for job search items

Have you ever looked for another job?	Frequency	Percent
Yes, in the same institution in a different section	26	17.0
Yes, applied for a promotion in the same institution	43	28.1
Yes, at another academic institution	48	31.4
Yes, in another organisation (not in academia)	37	24.2
Yes, but I only placed my CV on the web	10	6.5
No, but I have been headhunted by another organisation	37	24.2
No, but I have been approached by a recruiting agency	17	11.1
No	39	25.5

The results in Table 5-27 show that the most frequently selected job-search choice was that of 31.4% of respondents who had applied for a job at another academic institution, followed by 28.1% who had applied for a promotion at the same institution and 24.2% who had looked for a job in organisations other than academia. Only 25.5% of respondents had not sought any another position. Respondents could choose more than one response thus the percentages reflected the number of respondents who selected a particular option. Next, the respondents were asked to indicate the top five reasons why they would leave the institution. The results are reported in Table 5-28.

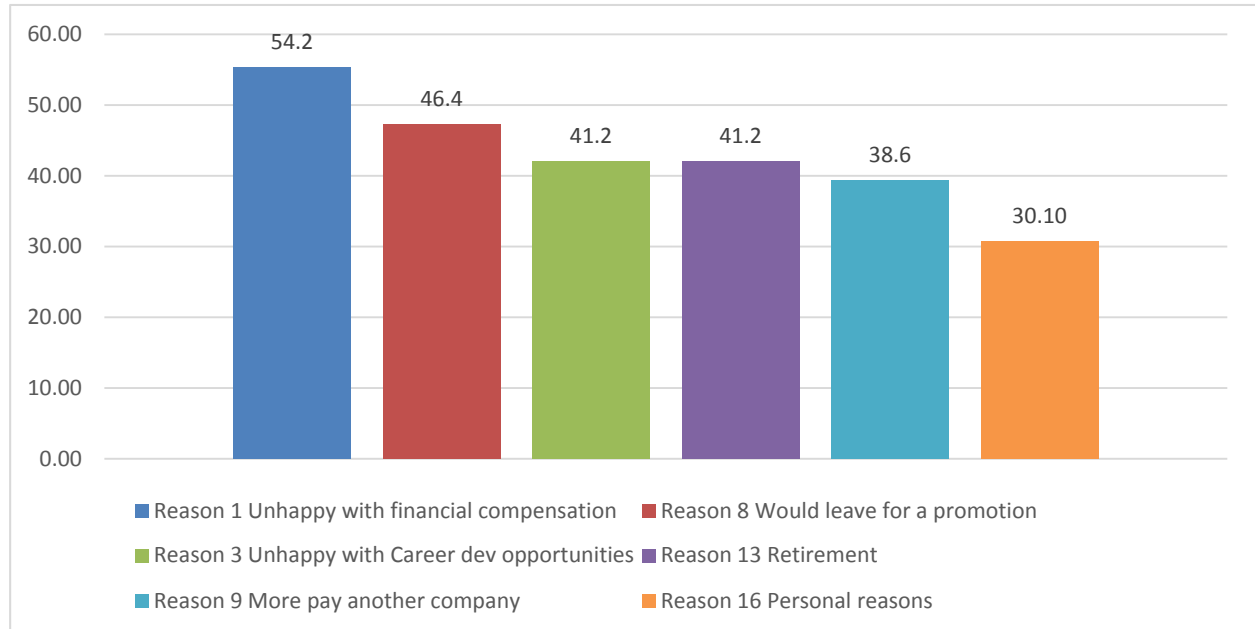
Table 5-28: Potential reasons for leaving the Institution

Reason	Frequency	Percent
Unhappy about financial compensation	83	54.2
Would leave for a promotion	71	46.4
Unhappy about career development opportunities	63	41.2
Retirement	63	41.2
Would leave for more pay in another company	59	38.6
Would leave for personal reasons such as family responsibilities	46	30.1
Unhappy about company policies	40	26.1
Would leave for ill health/disability	37	24.2
Would leave to study further	33	21.6
Would leave if my spouse was transferred	30	19.6
Would leave for a career change	30	19.6
Would only leave if I was retrenched	28	18.3
Would leave to start my own business	27	17.6
Unhappy about the job itself	25	16.3
Would leave for a job closer to home	25	16.3
Unhappy about the number of hours I am required to work	24	15.7
Unhappy about the people I have to work with	19	12.4
Unhappy about training opportunities	15	9.8

The results in Table 5-28 show that academics in the sample are most likely to leave the institution for the following reasons: dissatisfaction with financial compensation (54.2%), would leave for a promotion (46.4%), unhappy about career development opportunities (41.2%), retirement (41.2%) and would leave for more pay in another company (38.6%). Only retirement is not a voluntary or avoidable form of turnover. Respondents could choose more than one response thus the percentages reflect the number of respondents who selected a particular option.

In Figure 5-5, the six potential reasons most frequently selected by academics for leaving the institution are depicted graphically.

Figure 5-5: Potential reasons for leaving



5.5 DISCUSSION OF RESULTS OF HEI STUDY

Compensation and Recognition

The exploratory factor analysis for the Compensation and Recognition scale resulted in one factor, which was labelled *Compensation and Recognition*. The factor explained adequate variance for the measurement. The items showed acceptable loading, and no items were deleted. The scale was determined as being of optimal length based on the statistical analyses. The reliability analyses showed high reliabilities (0.881) for the overall Compensation and Recognition scale and its items. It could therefore be concluded that the Compensation and Recognition scale was a valid and reliable measure and it was included in the Talent Retention Scale.

Compensation practices as identified by the scale were found to be less than satisfactory for 52.7% of the sample. The most problematic compensation practice for the current sample was that the bonus structure did not adequately reflect the employee's contribution to the organisation. These results were not surprising, and

again echoed previous reports that there was a lack of properly applied bonus structures designed for the academic context (CHE, 2008; HESA, 2011; Ngobeni & Bezuidenhout, 2011). Compensation items were cross-referenced at other points in the Talent Retention Scale. Thus, being unhappy about financial compensation was identified as the most likely reason that employees in the sample would consider leaving their institution (see Table 5-28) and leaving for more pay in another company as the 4th most likely reason. Compensation emerged as a potential turnover factor and less so as a potential retention factor for the current sample.

Although the majority of employees in the present study perceived adequate emotional recognition (57% of sample) this still meant that 43% of the employees did not perceive the emotional recognition they received as adequate. Ngobeni and Bezuidenhout (2011) reported that inadequate employee recognition was linked to lower employee engagement and higher turnover intentions in a single HEI in South Africa. Emotional recognition as described in the Talent Retention Scale in the present study seemed to align theoretically with *work psychodynamic theory* where employees need a symbolic reward in the form of “appreciation”, a sense of “acknowledgement” or “gratitude” for their dedication or contributions (Brun & Dugas, 2008:721). Inadequate recognition can potentially be addressed by leadership development programmes that educate supervisors on a variety of suitable recognition practices to address various forms of employee recognition (Brun & Dugas, 2008; Hinkin & Schriesheim, 2009). Historically, appointments in HEIs have not been made based on leadership and people management skills but rather based on academic skills such as teaching and research (HESA, 2009). Emotional recognition is considered a potential employee retention factor in the present study.

Support from Manager/Supervisor/Direct Line Manager

The exploratory factor analysis for the Management Support scale resulted in one factor, which was labelled *Management Support*. The factor explained adequate variance for the measurement. The items showed acceptable loading and no item was deleted. The scale was determined as being of optimal length based on the statistical analyses. The reliability analyses showed very high reliabilities (0.934) for the overall Management Support scale and its items. It was therefore concluded that

the scale was a valid and reliable measure, and it was included in the Talent Retention Scale.

Regarding Management Support, the results, on average, showed that the respondents *agreed* that the direct line management support they received was adequate. From this finding, it could be deduced that direct line managers in HEIs managed their employees adequately, which is in line with Salopek (in Netswera *et al.*, 2005). The adequacy of perceived line management support was identified as a potential retention factor for the respondents in the present sample. Although correlations were not conducted in the present study there are indications from the literature that the perceived supervisor support relationship contributes distinctly and independently to employee outcomes such as turnover intentions (Kuvaas & Dysvik, 2010). In addition there are indications that the commitment of employees to supervisors is related to both turnover intentions and actual turnover (Vandenberghe & Bentein, 2009). Thus, the decision to measure the adequacy of direct line management/supervisory support should be included in future measures of retention of academics.

The finding of adequacy of direct line management support applied to most of the items, except where performance appraisals were considered. The respondents only *slightly agreed* that their line managers conducted regular and fair performance appraisals, or gave constructive feedback. These findings showed scope for improvement of performance appraisal and feedback practices, as previous research showed that poor and unfair application of performance management practices could result in academics leaving an institution (Pienaar & Bester, 2006; 2008). Ngobeni and Bezuidenhout (2011) found feedback practices to be inadequate within a single HEI and recommended that supervisors provide feedback throughout the year in order to improve employee engagement.

Institutional Practices

The exploratory factor analysis for the Institutional Practices scale resulted in three factors, which were labelled *Satisfaction with General Institutional Practices*, *Satisfaction with Institutional Funding Opportunities*, and *Satisfaction with Diversity*

Chapter 5: Developmental study in HEIs

and Community Service. The three factors explained adequate variance for the measure. The items showed acceptable loadings, and no items were deleted. The reliability analyses showed acceptable to very high reliabilities for the overall Institutional Practices scale and its items. The scale was determined as being of optimal length based on the statistical analyses. It could therefore be concluded that the scale was a valid and reliable measure, and it was included in the Talent Retention Scale.

The results showed that the respondents were mostly satisfied with *General Institutional Practices*, *Institutional Funding Opportunities*, and *Diversity and Community Service*. For the present research, human resource practices were included in *General Institutional Practices*. It is important to consider findings in literature that employees' perception of HR practices and policies influenced employee outcomes such as commitment to their work, retention and commitment to their organisation (Purcell & Hutchinson, 2007). In addition, performance and behaviour could be due to employees' perception of how their direct line managers implemented HR practices and policies (Purcell & Hutchinson, 2007). For example, employees might perceive (rightly or wrongly) that their direct line manager failed to initiate mentorship opportunities or training and development opportunities.

Satisfaction with opportunities to engage in community service practices was of special interest as philanthropic outreach activities are regarded as one of the key goals of HEIs together with academic research and teaching (HESA, 2009). In the present sample, 74.5% of respondents expressed satisfaction with this item. The remaining diversity items in the scale indicated sufficient respect for my culture (77% satisfaction), sufficient cultural diversity (67.9% satisfaction) and satisfaction with affirmative action (60%). These results were encouraging although further improvements would be desirable as managing diversity remains a central objective for developing the next generation of academics (HESA, 2011).

On item level, the respondents indicated the most dissatisfaction with the talent management practices of their institutions and mentorship opportunities for academic staff. The results were in line with those of researchers who suggested

that talent management practices seemed to be neither an operational nor a strategic priority in South African HEIs (Hazelkorn & Moynihan, 2010; Robyn, 2012).

Intention to Quit scale

Exploratory factor analysis for the Intention to Quit scale with revised wording, resulted in one factor, which was labelled *Intention to Quit*. The factor explained adequate variance for the measure. The items showed acceptable loading, and no items were deleted. The reliability analyses showed very high reliabilities (0.914) for the Intention to Quit scale and its items. The results are in line with previous research that also found the Intention to Quit scale to be a reliable measure in the South Africa context (Du Plessis *et al.*, 2010; Veldtman, 2011). It can therefore be concluded that the Intention to Quit scale using the modified wording is a valid and reliable measure, and may be included in the overall Talent Retention Scale.

The results of the Intention to Quit scale items show that 48% of respondents indicate slight to strong agreement with the statement '*when possible I will leave this organisation*'; while 37% indicate that they are thinking about leaving the organisation and 29% are currently searching for employment outside of the organisation. The results thus support previous research highlighting the turnover propensity of academics in South African HEIs (CHE, 2008; HESA, 2011; Pienaar & Bester, 2008; Robyn, 2012). Although this finding only indicates an *intention* to quit, it is important to note that intentions can eventually lead to actual turnover (Zhao *et al.*, 2007).

Factors that could Encourage Employees to Leave

Most respondents (31.4%) who had applied for another job, had applied at another academic institution, followed by 28.1% who had applied for a promotion at the same institution and 24.2% who had looked for a job in organisations outside of academia. The results clearly showed that the respondents were looking for opportunities to advance their careers within or outside of academia. Only 25.5% of respondents had **not** sought any other position with the converse finding that 74.5% of respondents had looked for other job opportunities.

The top five reasons given by respondents for considering leaving their institutions were dissatisfaction with financial compensation (54.2%), hoping for a promotion (46.4%), unhappiness about career development opportunities (41.2%), retirement (41.2%) and *would leave for more pay in another company* (38.6%). Only retirement is not a voluntary or avoidable form of turnover and respondents reported a mix of push and pull factors. Labour market and external factors are described as “pull factors” (Lee & Mitchell, 1994:51) and in the present research would include leaving for a promotion and higher pay in another company.

The results again showed that compensation of academics remained a recurrent theme and a factor that might cause them to leave an institution. Another significant finding was the lack of promotional opportunities, which was in line with the findings of Bitzer (2008), who indicated that the inconsistent application of promotion policies in higher education institutions could lead to the deterioration of the professoriate. The present study also found a lack of career development opportunities for academics, which confirmed the findings of the report by HESA (2011), highlighting the inadequate developmental opportunities available to academic staff.

5.6 SUMMARY

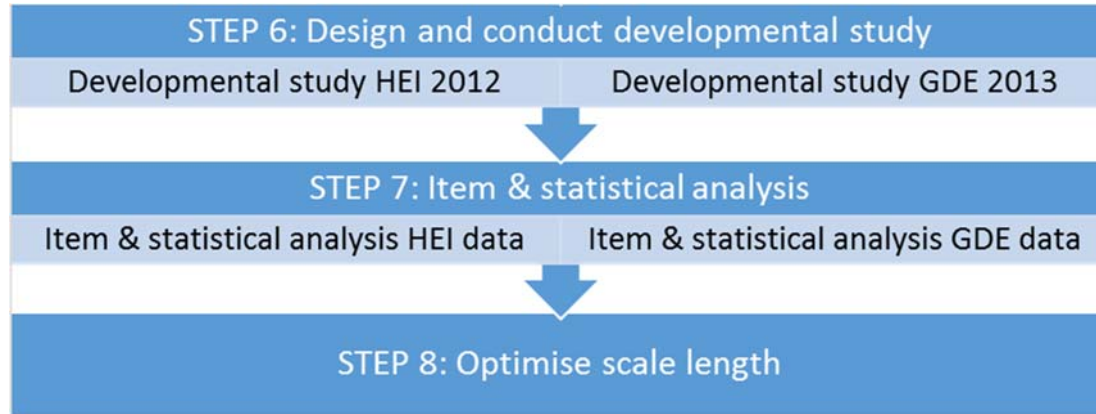
In summary, the results of the developmental study in HEIs provided support for the validity and reliability of the Talent Retention Scale. The results pertaining to the HEI study have been published in an academic journal (Theron, Barkhuizen & du Plessis, 2014). However, this study alone cannot adequately meet all the criteria for determining the validity and reliability of a measurement scale and repetition of Steps 6–8 of the scale development process is recommended as best practice (Hinkin, 1998). Furthermore, in order to facilitate additional psychometric and statistical analyses such as CFA and SEM larger sample sizes are required than for EFA (Worthington & Whittaker, 2006). In the following chapter, as part of the developmental study, the retention scale is thus tested in a larger sample of employees in general education.

CHAPTER 6: DEVELOPMENTAL STUDY IN GENERAL EDUCATION

6.1 INTRODUCTION

The developmental study that is required as part of the scale development process recommended by (DeVellis, 1991) and Hinkin (1995) has additionally been conducted on a distinct and larger sample of employees. This phase of the developmental study among a sample of employees in general education has been labelled as the GDE study, as the sample originated from the GDE. Steps 6–8 of the scale development study are thus repeated on a different sample. Hinkin (1998) considers replication of these steps as a requirement for good scale development. An extract of the scale development process from Figure 1-1, as it applies to the current chapter, is shown below.

Extract from Figure 1-1: Scale development process



In this chapter the following findings are discussed:

- the data collection approach followed in the GDE study (Step 6);
- the demographic and biographical results of the GDE study (Step 6);
- the item evaluations and analysis of non-psychometric components of the measurement scale – *job search* and *most likely reasons to leave* (Step 7);
- data analysis of qualitative responses to open-ended questions (Step 7).

Due to the complexity and length of the required data analysis the psychometric analysis will be presented in Chapters 7 and 8.

General education and further education and training in the South African Qualifications Authority (SAQA) framework includes, but is not limited to, all compulsory education up to NQF level 1 (Grade 9) and the National Senior Certificate (SAQA, 2013). The SAQA description of general education encompasses a broader scope than the Department of Education description of basic education. The latter specifies that all learners up to and including Grade 12 fall under the scope of the Department of Basic Education (DBE, 2014). For the purposes of this research general education and basic education will be used interchangeably but always intending to refer to education in schools up to Grade 12.

General education was deemed a suitable context for the second sample in the developmental study due to the importance that education has in the sustainable development of South Africa. Education, together with training and innovation, are viewed as central to solving the national challenges of poverty and inequality (National Planning Commission, 2012:261). The mission of the GDE centres on providing quality learning and teaching on a daily basis at all schools (GDE, 2012:17). However, a capacity constraint acknowledged by the GDE related to the attraction and retention of critical skills in educators teaching “mathematics, science and technology ... in rural and township locations” (GDE, 2012:155).

The research findings include both basic descriptive statistics and inferential statistical results. Outcomes from the descriptive statistical analyses aim to provide a description of the educators that participated in the study. The descriptive statistics include frequencies and percentages, cross-tabulations between gender; employment equity grouping, and contextual variables such as number of years at the school, number of years in current job, educational qualifications, job title, basis of employment, marital status and number of hours required to work. Cross-tabulations between intention to quit and the contextual variables are also reported. In addition, confirmatory factor analysis was used to assess the psychometric

properties of the measurement scale in the study, and to define the measurement models.

6.2 DATA COLLECTION APPROACH IN GDE STUDY

Permission for the research project was obtained from the GDE following the submission of a research proposal to the Director: Education Research and Knowledge Management. Permission was requested to conduct the research in a single district which is one of 15 districts in the GDE. Following discussions with the GDE, Gauteng East District, a decision was made to utilise hard copies of the research instruments as there were schools without adequate numbers of laptops or computers to do an online version of the survey. This was confirmed by statistical information from the Census of Schools that reveals that only 53% of schools in South Africa have access to a computer and only 14.5% have access to the internet (Statistics South Africa, 2009). One of the advantages of hard copy questionnaires is that the survey respondents often feel more confident about remaining anonymous as they can see from the nature of the booklet that the information cannot be traced back to them (Leedy & Ormrod, 2005). However, maintaining anonymity of respondents resulted in a trade-off where respondents could not be traced for questions or follow-ups.

Copies were distributed through the internal mail distribution system and each school received an introductory letter, copy of the consent letter from the GDE, self-sealing envelopes, with a printed return address and individual copies of the questionnaire. Data was collected during the period July and August 2013. Sealed questionnaires were collected by the researcher from the Education Development Centre and the district office. Respondents were asked to complete the questionnaire within a two-week period, however, the July school vacation necessitated an extension till the end of August which resulted in a two-month window for data collection. Data capture was done using manual data entry into Survey Monkey and the results were exported to Excel. From Excel the data was exported to SPSS 22 (2014) or SPSS AMOS 22 (2014).

6.2.1 Sample size and response rate

The employee retention measurement scale items were distributed to a purposive convenience sample of 3 300 educators in a single district within the GDE. The sample is described as “purposive” in that it reflects a school district that would be contextually relevant and representative of public urban schooling in Gauteng, South Africa. The participants were purposively selected educators, heads of department, deputy principals and principals who by virtue of their roles, experience or qualifications are the key to fulfilling the organisational objectives of delivering quality education. Administrative employees, security or facilities staff were not included in the sample. The sample can be described as “convenience” because of proximity to the researcher in terms of logistics and accessibility in terms of a co-operative and supportive GDE research directorate. Although purposive sampling is most often used in qualitative research, Barbour (2001:1116), refers to the use of sampling forms which are “hybrids” and retain elements of purposive and convenience sampling.

Gauteng has the highest population of all provinces in South Africa and 24% of the total South African population reside in Gauteng (Statistics South Africa, 2013). The school district falls within Ekurhuleni Metropolitan Municipality which is the 4th largest municipality in South Africa with a population of 3.2 million persons. The majority of the general population (99.4%) live in urban settlements and 78.7% of the population are black Africans while 28.8% of the persons living in Ekurhuleni are unemployed (Statistics South Africa, 2014a). The racial demographic of Ekurhuleni in terms of black Africans is similar to the total South African population which stands at 79.8% with 25.2% total unemployment (Statistics South Africa, 2013; Statistics South Africa, 2014a). This similarity is useful in terms of understanding the demographic and socio-economic realities of the context in which this research occurs.

Hard copies were distributed to a total of 3 300 educators, Heads of Departments and Principals from 173 schools in Gauteng East, which is one of 15 districts in the GDE. No private schools were included in the survey although public schools with

teachers whose salaries were paid by the school governing board were included. Schools in the survey included public primary schools, secondary schools, LSEN (Learners with Special Education Needs) and comprehensive schools. A total of 1 148 usable questionnaires were received which implies a response rate of 35%.

6.2.2 Ethical considerations

In the interest of full disclosure regarding the nature of the research, respondents were informed in writing on the front cover of each questionnaire booklet that “the Department of Human Resource Management, University of Pretoria is conducting “an academic research study on Talent Retention”. On each hard copy there was space for the employee to indicate their consent.

Questionnaires were treated anonymously to protect the confidentiality and identity of respondents. The sealed, addressed envelopes assisted employees to feel confident that their results would be treated confidentially. For the purposes of this research the confidentiality and anonymity made it impossible to identify which respondents were top-performing employees as there was no way of accurately validating this information. No educators or principals were forced to participate but the researcher did encourage participation by calling the principals of the 173 schools personally or emailing them a reminder when results were slow to come in.

6.3 DEMOGRAPHIC RESULTS OF GDE STUDY

The data analysis approach including the handling of missing data is described, followed by the descriptive demographic results. The biographical and demographical data provided contextual variables for the study and help to describe the sample of respondents. The contextual variables were compared with employment equity groupings and gender.

6.3.1 Data analysis approach

Data analysis included descriptive statistics, cross-tabulations of contextual variables and assessment of sample representativeness. All biographical and demographic data was treated as non-metric data and the frequency of the data was reported (Hair *et al.*, 2010:7). In addition, frequency data is reflected as a percentage of the GDE study respondents. Frequency referred to the number of occurrences of categories of values, usually reported so that the lowest and highest values of the variables were clear (Saunders *et al.*, 2007:422).

Missing data was managed according to the process suggested by Hair *et al.* (2010:45). Non-responses or incomplete responses were analysed in order to understand if an unusually high non-response rate was linked to a specific question. Analysis of questions about academic area of specialisation, professional registration and teaching-administration load had high numbers of missing data and this limited the analyses. The reasons for this might relate to participant fears of being identified by stating their academic area of specialisation which is unfortunate as this resulted in limited analyses of scarce skills. The question on teaching/administration load appeared to have created confusion due to the layout of the tick-boxes. The professional registration question might not have been clearly stated or alternatively not all educators were aware of South African Council of Educators (SACE) or similar registrations. Future research could make use of specified registrations instead of leaving it as an open question.

Missing data for contextual variables that were reported on and were used in further analyses, ranged from 14 missing responses for home language to 77 missing responses for age. There were fluctuations in the number of respondents who completed different questions in the scale items and where this number was less than 1 148 (the usable number of questionnaires received back from the sampling process) it was reported. During SPSS calculations for the descriptive statistics, missing data was treated as incomplete and only complete cases were used (Field, 2009: 177). Missing values had a random pattern and were generally less than 10%.

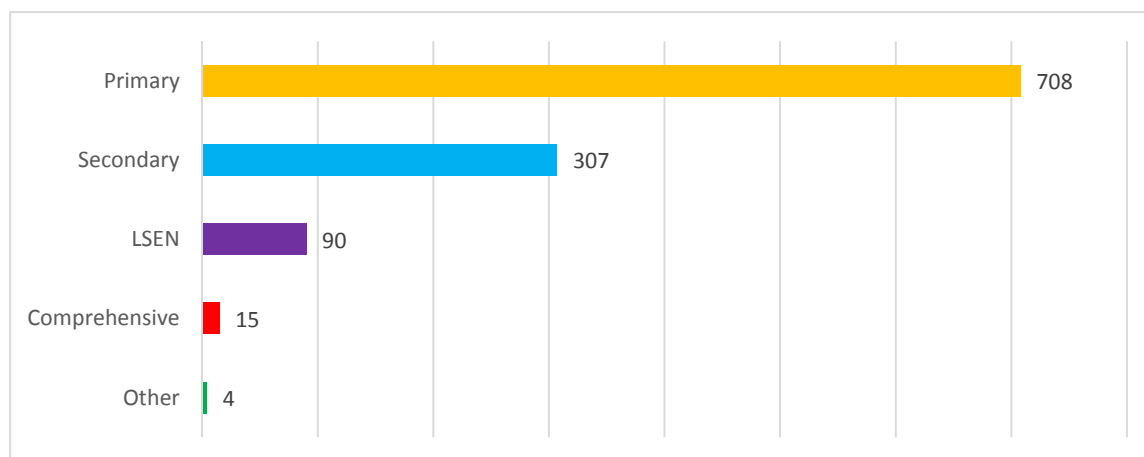
In EFA analysis, listwise deletion was used while in CFA analysis using the AMOS SPSS calculations, the maximum likelihood (ML) algorithm was used which is a direct, theory-based statistical approach to missing data (Byrne, 2010:358). The major advantage of using ML estimates is that the goodness-of-fit statistics during structural equation modelling (SEM) are very similar across samples with missing data compared to complete samples (Byrne, 2010: 358). ML estimates are frequently used “fitting functions” in SEM (Schermeleeh-Engel *et al.*, 2003:25).

6.3.2 Descriptive results of demographic variables

Descriptive statistics are provided in the following section to assist in understanding the participants in the study and to provide context for the research findings. Univariate results are provided for type of school, age, marital status, ethnicity, home language, highest level of education/qualification, number of years working at current school, number of years employed in current job and employment type. Bivariate statistics are provided for gender and employment equity grouping.

Respondents were asked to indicate their type of school and results in Figure 6-1 indicate that the majority of respondents are from primary schools (63%), with 27.3% from secondary schools and 8% of the sample are from LSEN schools.

Figure 6-1: Frequency distribution of number of respondents per type of school



(n=1124)

Chapter 6: Development study in GDE

The majority of respondents are educators (809 or 73.3%); Heads of Department make up 17.5% of the sample (201 respondents); while 93 Deputy Principals or Principals participated (8.4% of sample) and 43 respondents declined to provide an educational job title.

Respondents were asked to indicate their area of academic specialisation. This resulted in a high number of missing data (147) and additional calculations were not done. Some respondents selected more than one area of specialisation and it was not clear if this was the area they trained in or the area they taught in at the time. Further research would need to clarify this issue. The academic area of the respondents is reported in Table 6-1.

Table 6-1: Area of academic specialisation of respondent

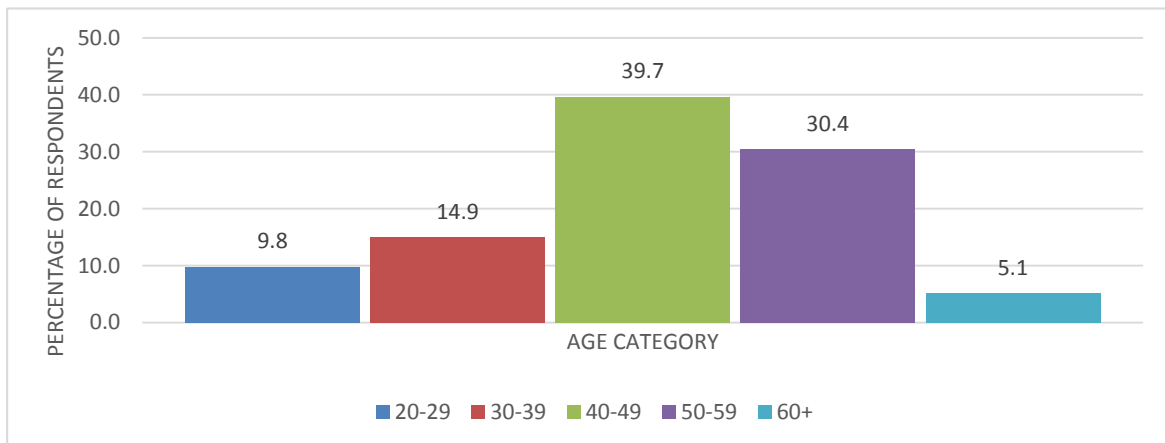
Academic Area	Frequency	Percent
1. English	118	10.3
2. Afrikaans	50	4.4
3. Mathematics	201	17.5
4. First additional Language	27	2.4
5. Life Orientation	26	2.3
6. Life Science	27	2.4
7. Physical Science	41	3.6
8. Geography	24	2.1
9. History	30	2.6
10. Grade R	22	1.9
11. Foundation phase	134	11.7
12. Intermediate phase	17	1.5
13. Special Needs	62	5.4
14. Administration	1	0.1
15. Other	221	19.3
Total	1001	87.2
Missing	147	12.8
<u>Total</u>	1148	100.0

The single largest group is 20.1% of respondents who reported mathematics as their area of specialisation, followed by foundation phase (13.4%) and English (11.8%). Only one person reported being part of administration. The miscellaneous or 'other'

group comprised a diverse set of academic areas including commerce, business economics, accounting, hospitality studies, technology, consumer studies, visual arts and computer skills.

As can be seen in Figure 6-2, the majority of respondents (39.7%) were in the age category 40–49. In total, 75.2% of respondents were older than 40 years of age. This raises some concerns about an aging workforce and the ability of the district to attract and retain young employees. This appears to be similar in other districts in Gauteng where the largest attrition rates for educators are in the in age group 20–29 years (31.3% of attrition) and secondly among educators older than 60 years, where the attrition rate is 29.2% (GDE, 2012:29) which may be due to early retirements.

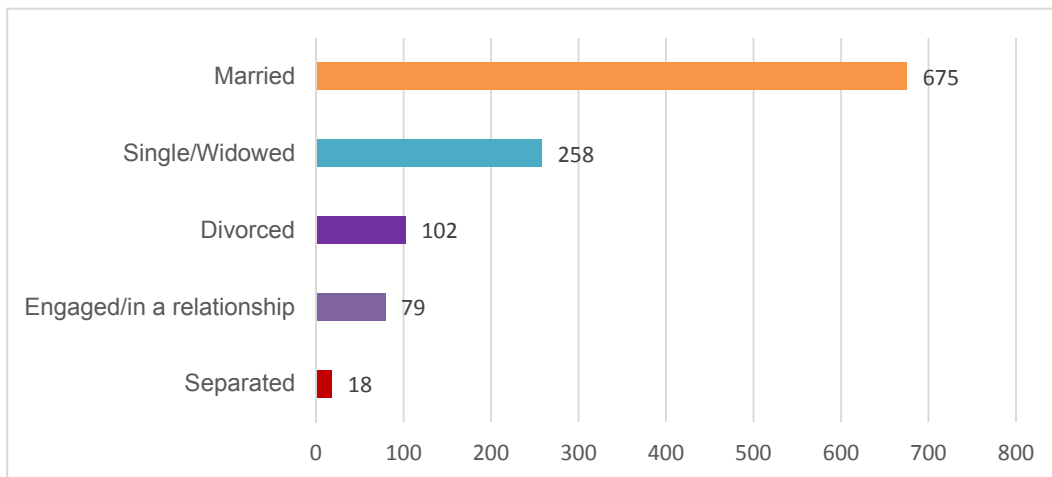
Figure 6-2: Percentage distribution of age category of respondents in GDE study



(n = 1071)

In Figure 6-3 the marital status of the respondents in the GDE study are presented as frequencies of the total sample.

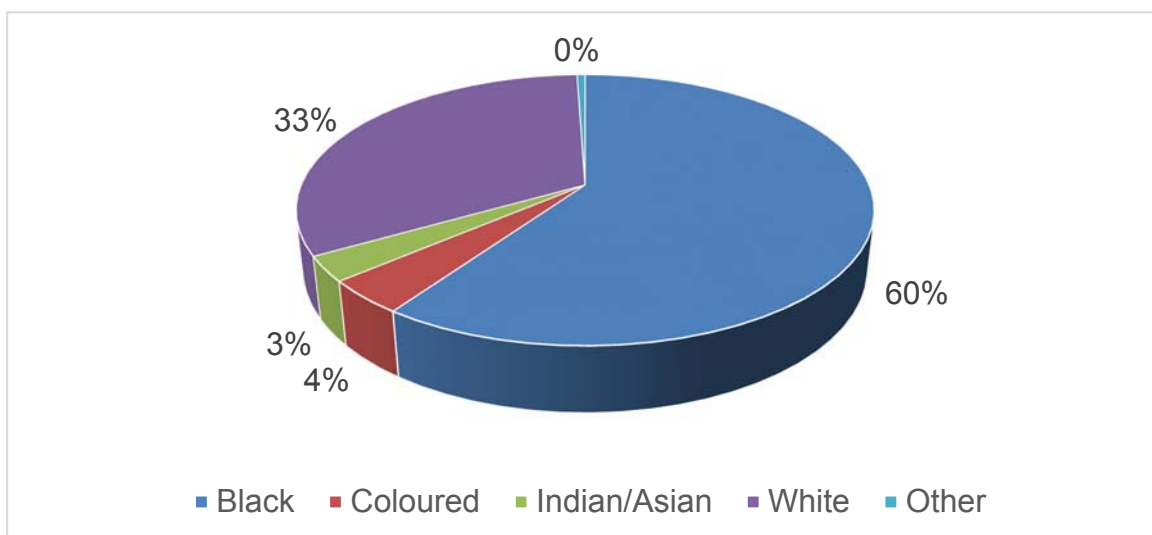
Figure 6-3: Frequency distribution of marital status in GDE study



(n=1132)

The majority of the respondents in the GDE study were black (60%); while white respondents made up the second largest category (33%). Indian/Asian employees made up 3% of the sample and coloured employees made up 4% of the sample. Missing data was recorded for 3.1% of the initial sample who declined to give a response. Univariate ethnicity of the GDE sample is illustrated in Figure 6-4.

Figure 6-4: Ethnicity of GDE sample respondents



(n=1112)

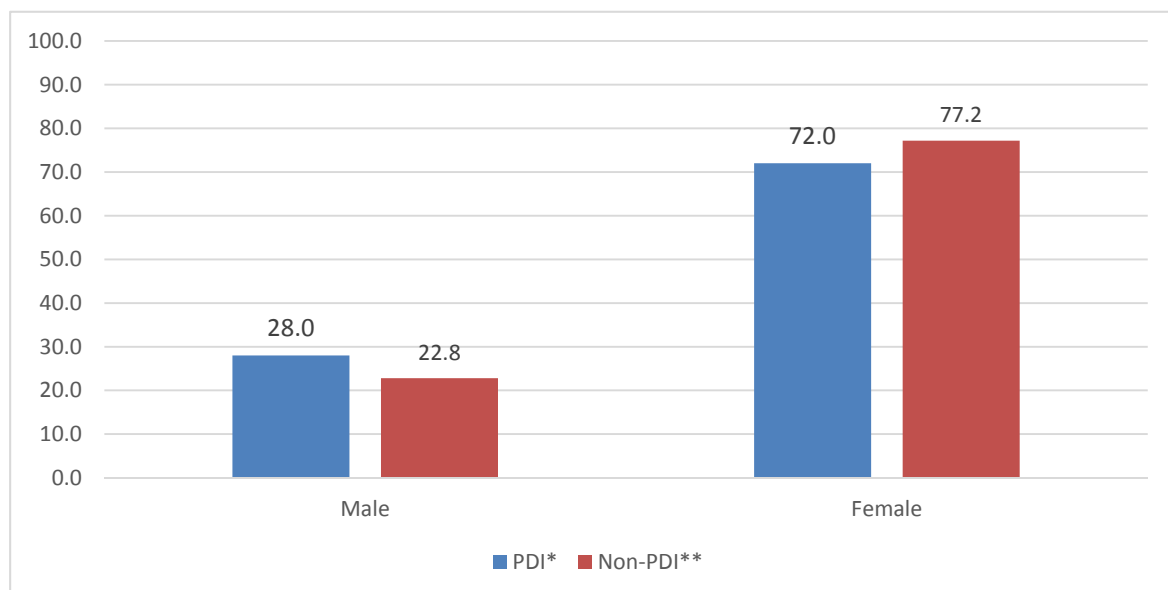
Chapter 6: Development study in GDE

For the purpose of further data analysis and due to the small numbers of respondents in the coloured and Indian/Asian groups, the ethnicity data was grouped into two clusters representing employment equity groups:

- PDI group: previously disadvantaged individuals which included Black, Coloured, Indian/Asian respondents in the GDE sample. This refers to ethnic groupings which were discriminated against during the apartheid years and for whom affirmative action policies have been applicable in the course of the last 20 years in an attempt to redress the past inequalities. It is a requirement of the law that racial information be recorded by organisations to be able to implement affirmative action (Employment Equity Act, General Administrative Regulations, 2009:11). The PDI group was comprised of 763 respondents or 68% of the sample.
- non-PDI group: This refers to non-previously disadvantaged individuals or white employees in the GDE sample; 355 respondents or 32% of the sample was white.

The proportion of males to females in the PDI group and non-PDI group is displayed in Figure 6-5. Females from the non-PDI group are the most represented group.

Figure 6-5: Proportion of males to females in PDI group and non-PDI group



Chapter 6: Development study in GDE

The most frequently spoken home language among respondents was Afrikaans which was spoken by 32% of the sample. The second most frequently reported home language was IsiZulu which was spoken by 29.7% of the sample. English as home language was only chosen by 7.7% of the respondents. On a cumulative basis indigenous African languages were spoken by 58.7% of the respondents. Due to the low frequencies of seven of the eleven official languages no cross-tabulations were done with home language and other contextual or outcome variables.

Table 6-2: Home languages of respondents

Home Language	Frequency	Percent
Afrikaans	363	31.6
English	87	7.6
Sepedi	111	9.7
Sesotho	62	5.4
Setswana	50	4.4
SiSwati	21	1.8
TshiVenda	13	1.1
IsiZulu	307	26.7
IsiNdebele	33	2.9
IsiXhosa	36	3.1
Xitsonga	32	2.8
Other	19	1.7
Total	1134	98.8
Missing	14	1.2
<u>Total</u>	1148	100.0

Respondents were asked to report their highest level of education and/or qualification. The results are reported in Table 6-3.

Table 6-3: Highest level of education/qualification

Qualification	Frequency	Percent
Diploma	496	43.2
Bachelor's Degree	275	24.0
4 year Degree or Honours	286	24.9
Master's Degree	28	2.4

Qualification	Frequency	Percent
Doctoral Degree	9	0.8
Other	32	2.8
Total	1126	98.1
Missing	22	1.9
Total	1148	100.0

The majority of employees in the sample had a diploma (44%). For the purpose of further data analysis, the smaller categories were combined to form the following grouping:

- diploma or other qualification (46.8% of respondents);
- bachelor's degree (24.4% of respondents);
- 4-year degree/honours/master's/doctoral degrees (28.7% of respondents);

Table 6-4: Number of years working at current school

Years at current school	Frequency	Percent
1 year or less	126	11.0
2–5 years	271	23.6
6–10 years	206	17.9
11–20 years	240	20.9
21–30 years	189	16.5
31+ years	74	6.4
Total	1106	96.3
System	42	3.7
Total	1148	100.0

On a cumulative basis 35.9% of the sample had been at their current school less than five years while 45.5% had been at their current school more than 10 years. For the purpose of further data analysis these age categories were further regrouped as follows:

- 1 year or less (11.4% of sample)
- 2–5 years (24.5% of sample)
- 6–20 years (40.3% of sample)

- 21+ years (23.80% of the sample).

In Table 6-5, the number of years that respondents had been employed in their current job is reported. On a cumulative basis 26.7% of the sample had been at their current job less than five years while 55.8% had been in their current job more than 10 years. For the purpose of further data analysis these age categories were regrouped as follows:

- 1 year or less (7.9% of sample)
- 2–5 years (18.8% of sample)
- 6–20 years (42.8% of sample)
- 21+ years (30.5% of the sample).

Table 6-5: Years employed in current job

Years employed	Frequency	Percent
1 year or less	86	7.5
2–5 years	206	17.9
6–10 years	191	16.6
11–20 years	277	24.1
21–30 years	218	19.0
31+ years	116	10.1
Total	1094	95.3
System	54	4.7
Total	1148	100.0

Employees were asked to indicate their employment type and the majority of respondents (90%) were permanent employees with 10% being temporary. Fixed term contracts only made up 0.4% of the sample and they were combined with temporary employees for future data analysis.

6.3.3 Cross-tabulations of contextual variables

Demographic and other contextual variables were cross-tabulated with gender and the PDI and non-PDI groups. The chi-square test of independence was conducted to

assess representativeness of the sample across demographic and contextual variables and to determine significant differences. Cross-tabulations for PDI/non-PDI groups and the associated chi-square tests are reported in Tables 6-6 and 6-7.

Table 6-6: Cross tabulations for contextual variables and PDI/non-PDI groups

Variables	Categories	Frequencies		Total	Percentages		Total
		PDI	non-PDI	Frequency	PDI	non-PDI	Percentage
Gender	Male	214	81	295	28.0	22.8	26.4
	Female	549	274	828	72.0	77.2	73.6
	TOTAL	763	355	1118	100.0	100.0	100.0
Age	20–29	40	65	105	5.6	18.4	9.8
	30–39	112	48	160	15.6	13.6	14.9
	40–49	344	81	425	48.0	22.9	39.7
	50+	221	160	381	30.8	45.2	35.6
	TOTAL	717	354	1071	100.0	100.0	10.0
Marital status	Single	279	99	378	36.2	27.4	33.4
	Relationship	492	262	754	63.8	72.6	66.6
	TOTAL	771	361	1132	100.0	100.0	100.0
Qualification	Diploma	352	144	496	47.6	40.6	45.3
	Bachelors	176	99	275	23.8	27.9	25.1
	Post-graduate	211	112	323	28.6	31.5	29.5
	TOTAL	739	355	1094	100.0	100.0	100.0
Years at school	1 year or less	85	41	126	11.4	11.4	11.5
	2–5 years	185	86	271	24.8	23.9	24.5
	6–20 years	309	137	446	41.4	38.1	40.3
	21+ years	167	96	263	22.4	26.7	23.8
	TOTAL	746	360	1106	100.0	100.0	100.0
Years in current job	1 year or less	54	32	86	7.4	8.9	7.9
	2–5 years	122	84	206	16.6	23.3	18.8
	6–20 years	351	117	468	47.8	32.5	42.8
	21+ years	207	127	334	28.2	35.3	30.4
	TOTAL	734	360	1094	100.0	100.0	100.0
Basis of employment	Permanent	695	317	1012	90.7	88.5	90.7
	Temporary	71	41	112	9.3	11.5	9.3
	TOTAL	766	358	1124	100.0	100.0	100.0
Typical working hours per week	Up to 30 hours	104	16	120	14.4	4.5	11.1
	31–40	414	113	527	57.3	31.6	48.8
	41–50	136	125	261	18.8	34.9	24.1
	51 or more	69	104	173	9.5	29.1	16.0
	TOTAL	723	358	1081	100.0	100.0	100.0

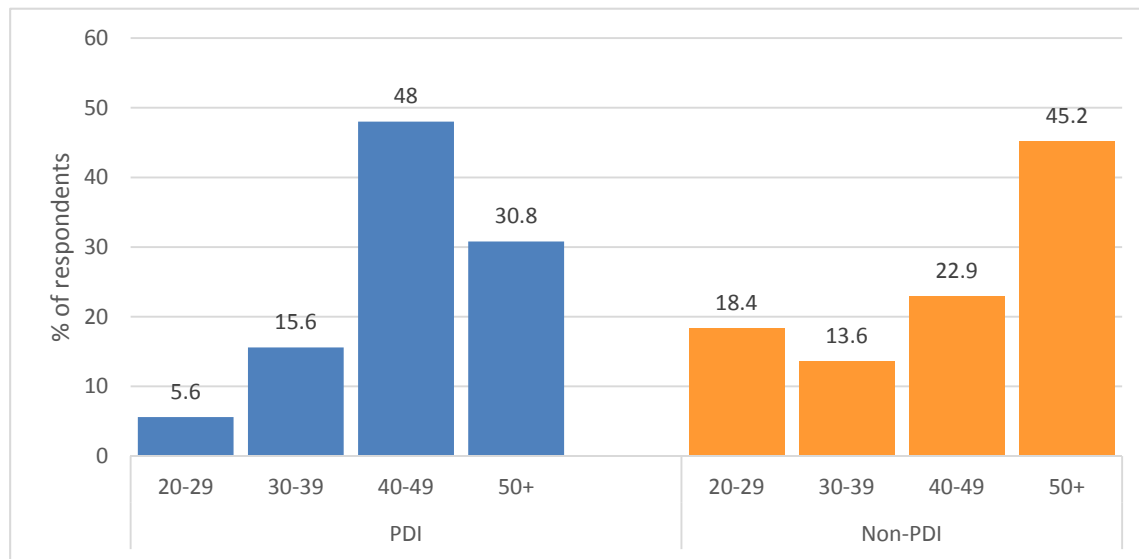
Considering both Table 6-6 and 6-7 it became easier to understand the composition of the sample of employees in the study. The single largest group of respondents was the female PDI group (549 respondents) while the smallest group of respondents was the non-PDI males (81 respondents). The majority of PDI respondents were permanent staff (90.7%) and had been at their current school for more than 6 years (63.8%) which implied a stable, experienced workforce who received medical aid, pension and leave benefits. Non-PDI respondents were mostly permanent employees (88.5%) and had been at their current school for more than 6 years (64.8%) which also implied a stable, experienced workforce.

Table 6-7: A comparison of characteristics of the sample across PDI/non-PDI groups

Variable	PDI/non-PDI		
	Chi-Square	df	Significance
Gender	3.412	1	0.065
Age	91.553	3	0.000
Marital Status	8.489	1	0.004
Qualification	4.954	2	0.840
Years at School	2.635	3	0.451
Years in current job	23.713	3	0.000
Basis of employment	1.294	1	0.255
Red values significant at $\alpha=0.01$			
Orange values significant at $\alpha=0.05$			
Green values significant at $\alpha=0.10$			
All other values not significant			

The proportion of PDI/non-PDI respondents across gender is reported in Figure 6-5 and this is a significant difference at the 0.10 level as can be seen in Table 6-7. There was a statistically significant difference ($p=0.004$) between the proportion of the sample that was in a relationship when comparing the PDI group (63.8%) and the non-PDI group (72.6%). In addition, highly significant statistical differences ($p=0.000$) were found across the PDI/non-PDI age categories. This description is illustrated in Figure 6-6.

Figure 6-6: Percentage distribution of age by PDI/non-PDI respondents



(n=1054)

Statistically significant findings were reported across the 20–29 age group (5.6% PDI’s compared to 18.4% of non-PDI group). These differences also occurred in the 40–49 age category (48% of PDI group compared to 22.9% of non-PDI group) and in the 50+ age group which comprised 30.8% of the PDI group in contrast to 45.2% of the non-PDI group. Thus the PDI group had fewer young respondents, more in the 40–49 year category and fewer in the 50+ age category when compared to the non-PDI group.

Cross-tabulations by gender and the associated chi-square tests are reported in Tables 6-8 and 6-9 respectively.

Table 6-8: Descriptive results – contextual variables by gender

Variable	Categories	Frequencies		Total Frequencies	Percentages		Total Percentages
		Male	Female		Male	Female	
Age	20–29	26	79	105	9.4	10.2	10.0
	30–39	41	118	159	14.7	15.2	15.1
	40–49	116	300	416	41.7	38.7	39.5
	50+	95	279	374	34.2	36.0	35.5
	TOTAL	278	776	1054	100.0	100.0	100.0
Marital status	Single	69	301	370	23.4	36.8	33.3
	Relationship	226	516	742	76.6	63.2	66.7
	TOTAL	295	817	1112	100.0	100.0	100.0
Qualif.	Diploma	119	371	490	42.0	46.9	45.6

Variable	Categories	Frequencies		Total Frequencies	Percentages		Total Percentages
		Male	Female		Male	Female	
	Bachelors	69	201	270	24.4	25.4	25.1
	Post-graduate	95	219	314	33.6	27.7	29.2
	TOTAL	283	791	1074	100.0	100.0	100.0
Years at school	1 year or less	35	91	126	12.4	11.3	11.6
	2–5 years	80	185	265	28.3	23.1	24.4
	6–20 years	120	314	434	42.4	39.2	40.0
	21+ years	48	212	260	17.0	26.4	24.0
	TOTAL	283	802	1085	100.0	100.0	100.0
Years in current job	1 year or less	25	60	85	8.8	7.6	7.9
	2–5 years	66	139	205	23.2	17.6	19.1
	6–20 years	121	336	457	42.5	42.5	42.5
	21+ years	73	255	328	25.6	32.3	30.5
	TOTAL	285	790	1075	100.0	100.0	100.0
Basis of employment	Permanent	259	733	992	89.0	90.3	89.9
	Temporary	32	79	111	11.0	9.7	10.1
	TOTAL	291	812	1103	100.0	100.0	100.0
Typical working hours per week	Up to 30 hours	28	91	119	9.7	11.8	11.2
	31–40	146	377	523	50.5	48.8	49.2
	41–50	73	180	253	25.3	23.3	23.8
	51 or more	42	125	167	14.5	16.2	15.7
	TOTAL	289	773	1062	100.0	100.0	100.0
Employment equity	PDI	214	549	763	72.5	66.7	26.4
	non- PDI	81	274	355	27.5	33.3	73.6
	TOTAL	295	823	1118	100.0	100.0	100.0

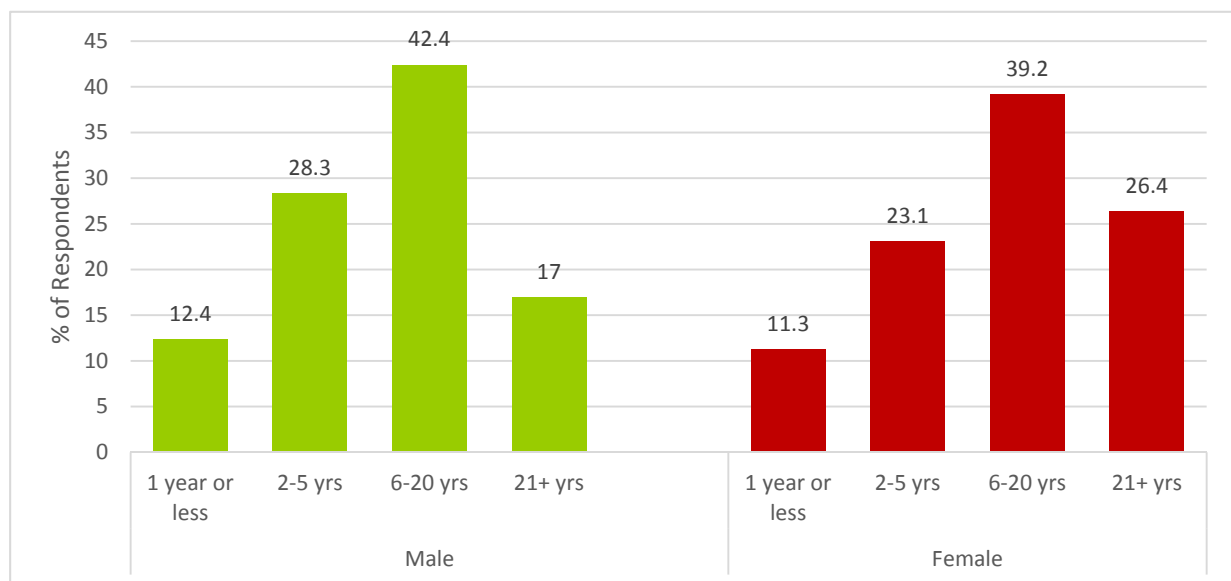
A comparative analysis across demographic and other contextual variables was also conducted for the male/female group. We already knew that the majority of the respondents were female (73.6%). The percentage of respondents for each age range was similar for males and females in the sample. Slightly more males had post-graduate qualifications (33.6%) than female respondents (27.7%) although this was not a significant difference. Males and females reported similar working hours. Significant differences across gender are summarised in Table 6-9.

Table 6-9: A comparison of characteristics of the sample across gender

Variable	Gender		
	Chi-Square	df	Significance
Gender			
Age	0.840	3	0.840
Marital status	17.666	1	0.000
Qualification	3.631	2	0.163
Years at school	10.891	3	0.012
Years in current job	6.815	3	0.75
Basis of employment	0.380	1	0.537
Typical working hours per week	1.648	3	0.648
Red values significant at $\alpha=0.01$			
Orange values significant at $\alpha=0.05$			
Green values significant at $\alpha=0.10$			
All other values not significant			

Significantly more female respondents were single (36.8%) than male respondents (23.4%) and marital status was significant at $p=0.000$ ($\alpha=0.01$ level). Considering the variable, “years at current school”, cross-tabulated with gender, a difference emerged in the category 2–5 years, where males were better represented than females (28.1% males to 23.1% females) which might imply that males change schools more often than females. Additionally females were more likely to be at the same school for 21 years or more (26.4%) when compared to the proportion of males in the same category (17%). These statistically significant differences are depicted in Figure 6-7.

Figure 6-7: Comparison of years employed at current school by gender



Linked to the finding in the present research that the age proportions of males and females were similar, and that more females than males were single it might be that females are less inclined to take chances and change jobs or change schools than their male counterparts.

6.4 ANALYSES FOR JOB SEARCH AND MOST LIKELY REASONS TO LEAVE

Sections D and E in the questionnaire used different response formats and thus were not suitable for psychometric analysis including EFA, CFA or invariance testing. Analyses for *job search* (Section D) and *most likely reasons to leave* (Section E) are discussed in the following sections.

6.4.1 Job search

Respondents were asked the following question “*Have you ever looked for another job?*” and were given 7 job-search items to which they could select either a *yes* or a *no* response. Items D1–D4 refer to active job search or actual application for jobs, while D5 refers to the use of technology in job search. Items D6 and D7 refer to external factors influencing job search such as recruitment agencies and head-hunters. The format of the *yes/no* responses changed from the HEI study in an attempt to improve clarity. In Table 6-10 the job-search results are presented.

The most frequently selected response was that employees had applied for jobs at another academic institution (40.2%) while only 28.5% of responses indicated active job search outside of academia. The responses to D1, D2 and D3 indicated that between 27 and 40% of employees aimed for career growth within education by engaging in active job search. D6 and D7 refer to passive job search where employees considered leaving through the instigation of others. Head-hunting of employees by other organisations was reported by 23.1% of respondents although it was not clear if these are other schools or organisations outside of education.

Table 6-10: Have you ever looked for another job?

Job search items (Multiple response questions)	Frequency selected YES	Percentage selected YES
D1: In the same institution in a different section	293	27.4
D2: Applied for a promotion in the same institution	360	33.5
D3: Applied for a job at another academic institution	430	40.2
D4: Applied for a job at another organisation (not in academia/education)	304	28.5
D5: I have only placed my CV on the web	124	11.7
D6: I have been headhunted by another organisation	245	23.1
D7: I have been approached by a recruiting agency	153	14.5

Note: percentages do not add up to 100 as respondents could select more than one answer.

6.4.1.1 Job search and cross-tabulations with contextual variables

It is of interest to investigate the extent to which the *job search* items differ across demographic and other contextual variables such as gender, PDI/non-PDI groups, marital status, highest qualification, years at current school, years in current job, basis of employment and number of working hours per week. The seven *job search* questions were cross-tabulated with the contextual variables. The chi-square test of independence was conducted for each cross-tabulation. The results of the significances of these tests are reported in Table 6-11. Percentages which are statistically significant are colour coded red, orange or green in order to facilitate the analysis: red values are significant at $\alpha=0.01$; orange values are significant at $\alpha=0.05$; green values are significant at $\alpha=0.10$ while non-significant findings are colour coded in black.

Table 6-11: Job search – percentages selected Yes/No cross-tabulations

Variables	Categories	D1: Diff section		D2: Promotion		D3: Other institution		D4: Not education		D5: CV on web		D6: Head-hunted		D7: Recruit. agency	
		%Yes	%No	%Yes	%No	%Yes	%No	%Yes	%No	%Yes	%No	%Yes	%No	%Yes	%No
Gender	Males	26.8	73.2	37.0	63.0	47.9	52.1	37.1	62.9	15.3	84.7	30.2	69.8	18.4	81.6
	Females	27.3	72.7	31.0	69.0	37.3	62.7	25.4	74.6	10.7	89.3	20.5	79.5	13.0	87.0
Age	20–29	26.5	73.5	11.9	88.1	38.0	62.0	27.0	73.0	19.0	81.0	30.4	69.6	12.0	88.0
	30–39	34.2	65.8	28.3	71.7	50.7	49.3	34.9	65.1	15.3	84.7	24.3	75.7	17.9	82.1
	40–49	28.1	71.9	36.8	63.2	47.2	52.8	36.6	63.4	14.0	86.0	20.1	79.9	15.9	84.1
	50+	23.2	76.8	37.9	62.1	29.6	70.4	17.7	82.3	6.0	94.0	23.4	76.6	13.1	86.9
Years at school	1 y and less	26.5	73.5	10.3	89.7	42.1	57.9	30.1	69.9	15.5	84.5	27.0	73.0	18.3	81.7
	2–5y	22.5	77.5	18.8	81.2	39.7	60.3	27.1	72.9	15.9	84.1	23.7	76.3	13.3	86.7
	6–20y	33.1	66.9	40.2	59.8	45.2	54.8	34.4	65.6	12.1	87.9	23.5	76.5	14.4	85.6
	21y+	22.9	77.1	47.8	52.2	32.9	67.1	20.2	79.8	6.1	93.9	20.3	79.7	14.3	85.7
Years in current job	1 y and less	24.7	75.3	21.3	78.7	41.8	58.2	24.1	75.9	8.6	91.4	30.0	70.0	19.0	81.0
	2–5y	27.1	72.9	23.4	76.6	40.0	60.0	24.7	75.3	15.6	84.4	25.3	74.7	12.6	87.4
	6–20y	29.3	70.7	36.7	63.3	41.7	58.3	33.8	66.2	14.2	85.8	22.1	77.9	15.5	84.5
	21y+	25.3	74.7	33.5	66.5	38.5	61.5	24.1	75.9	7.2	92.8	23.4	76.6	13.8	86.2
Marital status	Single/Div	21.8	78.2	28.2	71.8	37.2	62.8	28.5	71.5	12.0	88.0	21.9	78.1	14.4	85.6
	Rel/Married	29.9	70.1	35.9	64.1	41.9	58.1	28.7	71.3	11.7	88.3	23.7	76.3	14.7	85.3
Qualification	Diploma	25.9	74.1	34.6	65.4	36.0	64.0	26.2	73.8	11.9	88.1	18.7	81.3	13.3	86.7
	Bachelors	24.2	75.8	30.0	70.0	43.0	57.0	25.9	74.1	10.5	89.5	25.9	74.1	14.5	85.5
	Hons./Masters	31.9	68.1	33.8	66.2	46.8	53.2	35.7	64.3	13.0	87.0	26.8	73.2	17.0	83.0
Working hours	up to 30h	34.2	65.8	30.0	70.0	41.3	58.7	28.4	71.6	16.8	83.2	24.5	75.5	15.6	84.4
	31–40h	25.8	74.2	32.8	67.2	39.5	60.5	30.3	69.7	12.2	87.8	19.6	80.4	13.4	86.6
	41–50h	29.2	70.8	34.7	65.3	43.7	56.3	29.6	70.4	12.0	88.0	26.6	73.4	15.1	84.9
	51+	25.6	74.4	38.3	61.7	40.9	59.1	28.7	71.3	8.0	92.0	29.3	70.7	16.7	83.3
Basis of employment	Permanent	27.5	72.5	35.9	64.1	41.3	58.7	28.6	71.4	11.2	88.8	22.8	77.2	13.8	86.2
	Temporary	26.4	73.6	10.6	89.4	35.2	64.8	26.9	73.1	18.1	81.9	25.2	74.8	19.2	80.8
Employment equityity	PDI group	27.0	73.0	33.5	66.5	39.2	60.8	31.1	68.9	13.2	86.8	21.0	79.0	16.2	83.8
	non-PDI	28.0	72.0	33.3	66.7	42.4	57.6	23.1	76.9	8.6	91.4	27.2	72.8	11.0	89.0

Red values significant at $\alpha=0.01$; Orange values significant at $\alpha=0.05$; Green values significant at $\alpha=0.10$; All other values not significant

The statistical significance of the *job search* questions' cross-tabulation, based on the Chi-square test of independence with the contextual variables (reported in Table 6-11) are provided in Table 6-12.

Table 6-12: Statistical significances of job search questions cross-tabulated with contextual variables

Job search items	% sel. YES	M/F	Age	Marital	Qualif.	Yrs at School	Yrs in current job	Basis of employment	work hours per week	PDI/n on-PDI
D1: Diff section	27.4	0.878	0.081	0.005	0.080	0.003	0.628	0.808	0.274	0.742
D2: Promotion	33.5	0.103	0.000	0.012	0.432	0.000	0.000	0.000	0.467	0.952
D3: Other institution	40.2	0.002	0.000	0.140	0.013	0.020	0.846	0.232	0.752	0.311
D4: Not education	28.5	0.000	0.000	0.951	0.008	0.001	0.012	0.712	0.309	0.007
D5: CV	11.7	0.040	0.000	0.904	0.662	0.005	0.007	0.038	0.180	0.029
D6: Head-hunted	23.1	0.001	0.157	0.505	0.160	0.548	0.393	0.573	0.035	0.025
D7: Recruit. Agency	14.5	0.028	0.395	0.902	0.374	0.660	0.523	0.137	0.736	0.024
Red values significant at $\alpha=0.01$ Orange values significant at $\alpha=0.05$ Green values significant at $\alpha=0.10$ All other values not significant										

Based on the statistically significant findings in Table 6-12 and the analysis of the detailed cross-tabulations, several significant differences were found between males and females with regards to the *job search* options. **Male respondents** in the sample were significantly more likely to have applied for jobs at other institutions; applied for jobs outside of education; placed a CV on the web; and been head-hunted or approached by recruitment agencies. The **age of the respondents** influenced whether they selected a yes response to all five active job search options. The age groups most likely to have applied for a job in a different section of the same organisation are 30–39 and 40–49 years old. The age groups most likely to have applied for a promotion are 50 plus and 40–49 years old. Half of the respondents in the age group 30–39 had applied for jobs in other institutions while 47% of respondents aged 40–49 had applied. Between the ages of 40–49, 36.6% of respondents had applied for jobs outside of education; and so did 35% of

respondents between the ages of 30–39. Even 27% of young employees aged 20–29 considered leaving education. Placing their CVs on the web was significantly more likely to occur in the 20–29 years of age category. **Respondents in a relationship or married** were significantly more likely to apply for jobs within the same institution. This could be related to not wishing to move areas or locations due to their stable relationships.

Respondents with honours or higher degrees were significantly more likely to apply for jobs in different sections, different institutions or outside of education. This might be due to more job opportunities being available to those with postgraduate education. **Years at school** correlated significantly with all five active job search options. Respondents most likely to apply for jobs in a different section or outside of education had been working for 6 to 20 years at the same institution. A finding of some concern here was that the second most likely group of employees to apply for work outside of education were employees who had been working for less than one year at their current school (42%). This raised questions about adequate preparation, adequate support and mentoring and/or disillusionment with teaching among new teachers at an institution. Employees most likely to have applied for a promotion or a job in another educational institution had been employed 21 years or more at the same institution. Employees with less than five years at the current institution were most likely to have placed their CVs on the web.

Years in current job correlated significantly with applications for promotions (21 years or more in the current job), applications for jobs at organisations outside of education (6 to 20 years in current job) and placing CVs on the internet after 2–5 years in current job. **Permanent staff** were most likely to apply for promotions in the same institution while temporary staff were significantly more likely to place their CVs on the web. **The number of hours worked in a week** (51 hours or more) correlated with reports of being headhunted by other organisations. There was a statistically significant difference between the PDI group and non-PDI group with the PDI group more likely to apply for jobs outside of education, placing CVs on the web and being

approached by a recruitment agency. The non-PDI group was significantly more likely to be headhunted by other organisations.

6.4.2 Most likely reasons to leave

The top five *most likely reasons to leave* selected by respondents from the current sample were: *unhappy about financial compensation; would leave for more pay in another company;* followed by *promotion; retirement;* and *career change*. Compensation emerged both as a likely push factor for 56.2% of respondents (*unhappy about compensation*) and a pull factor for 51.6% of respondents (*would leave for more pay in another company*). Career development as a pull factor (*would leave for a promotion*) was the reason that featured third on the most likely list for 51.1% of respondents. Of these reasons only *retirement* was involuntary and outside the control of the individual and the organisation. It was one of the *most likely reasons to leave* for 48.7% of respondents. The remaining four out of five of the *most likely reasons to leave* could be classed as voluntary turnover. This is explained in detail in Table 6-13.

Table 6-13: Most likely reasons to leave provided by the GDE sample

Ranked order for most likely reasons to leave	Frequency selected YES	Percentage selected YES
E1: Unhappy about financial compensation	645	56.2
E9: Would leave for more pay in another company	592	51.6
E8: Would leave for a promotion	587	51.1
E13: Retirement	559	48.7
E11: Would leave for a career change	402	35.0
E12: Would leave to start my own business	307	26.7
E15: Would leave for ill health/disability	290	25.3
E10: Would leave for a job closer to home	274	23.9
E3: Unhappy about career development opportunities	266	23.2
E5: Unhappy about the job itself	256	22.3
E2: Unhappy about company policies	240	20.9
E6: Unhappy about the number of hours I am required to work	177	15.4
E16: Would leave for personal reasons such as family responsibility	172	15.0
E17: Would leave if my spouse was transferred	171	14.9
E7: Unhappy about the people I have to work with	166	14.5

Ranked order for most likely reasons to leave	Frequency selected YES	Percentage selected YES
E4: Unhappy about training opportunities	161	14.0
E18: Would leave to study further	156	13.6
E14: Would only leave if I was retrenched	120	10.5

6.4.2.1 Most likely reasons to leave cross-tabulated with contextual variables

It is also of interest to investigate the extent to which the *most likely reasons to leave* items differ across demographic and other contextual variables, such as gender, PDI/non-PDI groups, marital status, highest qualification, years at current school, years in current job, basis of employment and number of working hours per week. The cross-tabulations produced numerous statistically significant findings with the contextual variables for this sample. Only factors statistically significant at the 0.01 level and 0.05 level and the top five *most likely reasons to leave* are tabulated in Table 6-14. Values significant at $\alpha=0.01$ are colour-coded red; values significant at $\alpha=0.05$ are colour-coded orange while non-significant findings are colour-coded black.

Table 6-14: Top 5 most likely reasons to leave – percentage selected Yes cross-tabulations

Contextual Variables:	Categories	E1: Financial comp.	E9: more pay	E8: promotion	E13: Retirement	E11: Career change
Gender	Males	63.7	58.3	63.7	44.7	42.7
	Females	53.1	49.1	46.7	50.3	32.1
Age	20–29	43.7	49.5	56.2	30.5	42.9
	30–39	55.0	53.1	56.3	32.5	40.0
	40–49	58.1	57.6	58.8	42.6	41.4
	50+	56.7	43.8	39.1	67.7	23.1
Years at school	1 y and less	43.7	44.4	56.3	30.2	38.1
	2–5y	52.0	51.3	55.4	45.8	36.2
	6–20y	60.5	58.1	50.7	48.3	38.6
	21y+	58.2	45.6	44.1	66.9	25.5

Chapter 6: Development study in GDE

Contextual Variables:	Categories	E1: Financial comp.	E9: more pay	E8: promotion	E13: Retirement	E11: Career change
Years in current job	1 y and less	38.4	34.9	53.5	46.5	31.4
	2–5y	54.9	54.4	56.3	41.7	37.9
	6–20y	57.5	56.0	54.9	44.2	40.8
	21y+	58.4	49.4	43.1	60.2	26.3
Marital status	Single/Div/W	55.6	49.7	46.6	48.4	34.4
	Rel/Married	56.4	52.3	53.2	49.1	35.0
Qualif.	Diploma	57.9	53.2	45.2	51.0	32.5
	Bachelors	49.1	49.1	48.0	49.8	37.1
	Hons./M/PhD	59.1	53.3	63.5	44.9	38.7
Working hours	up to 30h	58.3	51.7	50.8	43.3	33.3
	31–40h	54.6	51.8	50.3	49.1	35.9
	41–50h	57.1	52.1	55.6	48.7	33.3
	51+	60.1	49.1	49.1	52.6	36.4
Basis of employment	Permanent	57.5	51.6	50.5	49.3	34.4
	Temporary	45.5	52.7	53.6	42.9	42.0
EE group	PDI group	58.4	52.9	53.2	45.2	38.3
	non-PDI group	51.4	48.6	46.7	56.3	28.0
<p>Red values significant at $\alpha=0.01$ Orange values significant at $\alpha=0.05$ All other values not significant</p>						

The chi-square test of independence was conducted for each cross-tabulation. The results of the significances of these tests are reported in Table 6-15.

Table 6-15: Statistical significance of most likely reasons to leave options cross-tabulated with contextual variables

Reasons to leave	% YES	Gender	Age	Marital Status	Qualifications	Yrs at Schl	Yrs in current job	Basiss of employment	Working hours per week	EE group
E1: financial comp.	56.2	0.002	0.201	0.796	0.026	0.003	0.007	0.015	0.603	0.025
E9: more pay	51.6	0.007	0.001	0.424	0.492	0.003	0.002	0.825	0.931	0.174
E8: promotion	51.1	0.000	0.000	0.036	0.000	0.037	0.003	0.536	0.487	0.041
E13: retirement	48.7	0.101	0.000	0.834	0.217	0.000	0.000	0.195	0.484	0.000
E11: career change	35.0	0.001	0.000	0.836	0.153	0.003	0.000	0.111	0.852	0.001
E12: own business	26.7	0.019	0.170	0.944	0.856	0.263	0.347	0.001	0.884	0.215
E15: ill health	25.3	0.018	0.001	0.483	0.278	0.326	0.320	0.006	0.603	0.107
E10: job close to home	23.9	0.251	0.001	0.247	0.768	0.005	0.035	0.017	0.053	0.142
E3: career dev. opp.	23.2	0.003	0.013	0.783	0.001	0.135	0.176	0.181	0.696	0.014
E5: the job itself	22.3	0.313	0.045	0.255	0.014	0.210	0.154	0.027	0.453	0.275
E2: company policies	20.9	0.341	0.028	0.901	0.475	0.044	0.010	0.030	0.719	0.207
E6: required hours	15.4	0.045	0.000	0.262	0.387	0.072	0.230	0.005	0.000	0.000
E16: personal	15.0	0.002	0.085	0.650	0.765	0.089	0.561	0.125	0.828	0.003
E17: spouse transfer	14.9	0.000	0.002	0.000	0.079	0.021	0.003	0.363	0.227	0.000
E7: people work with	14.5	0.930	0.504	0.264	0.765	0.652	0.866	0.875	0.412	0.635
E4: training opp	14.0	0.118	0.086	0.192	0.242	0.135	0.140	0.941	0.191	0.000
E18: study further	13.6	0.474	0.001	0.511	0.930	0.001	0.000	0.088	0.152	0.000
E14: retrenched	10.5	0.595	0.049	0.458	0.114	0.011	0.662	0.610	0.249	0.150
Red values significant at $\alpha=0.01$ Orange values significant at $\alpha=0.05$ Green values significant at $\alpha=0.10$ All other values not significant										

Based on the analysis of the detailed cross-tabulations (Table 6-14) and the statistically significant chi-square tests (Table 6-15) it emerged that **males** were more likely to leave due to financial reasons, the need for more pay and a career change while **females** were more likely to leave for a promotion. The **age group** most likely to leave for more pay was the 40–49 year group. The age group most likely to leave for retirement was the 50 plus age group and they were also the age group *least likely* to leave for a career change or a promotion.

Employees employed for six years or more at the same school were most likely to select leaving due to unhappiness with compensation or for more pay in another organisation (60% and 58% of respondents respectively). Employees employed for 21 years or more were least likely to leave for a promotion. Employees employed for less than one year were statistically most likely to leave for a career change, followed closely by respondents employed for two to five years. More than a third of respondents (38%) employed for less than a year would consider a career change. This again raised concern about the ability of the education sector to attract and retain young teachers.

Number of years in current job produced a slightly different picture as this could include respondents who were experienced teachers but new to a role (e.g. HOD, Principal, Deputy Principal or an educator in a new section). Employees employed for 21 years or longer were most likely to leave for financial compensation (58%) or retirement (60%). These employees were also least likely to leave due to a career change (26%).

Being in a relationship/married or having a post-graduate degree (honours or higher) correlated significantly with the likelihood of leaving for a promotion. Hours worked produced non-significant findings, while the contextual variable, basis of employment, indicated that permanent employees were more likely to leave due to unhappiness about financial compensation.

The **PDI group** was significantly more likely to leave due to unhappiness about financial compensation, for a promotion or a career change. The **non-PDI** group in the sample was more likely to leave due to retirement. It is important to remember that these significant findings were based on the *most likely reasons to leave* selected by employees in the sample and not on actual turnover statistics. Due to the ranking system employed, it was possible that employees might have provided additional insight into likely reasons and to that end an open-ended question was included.

6.5 QUALITATIVE FINDINGS FROM OPEN-ENDED QUESTIONS

6.5.1 Introduction

This section sets out to highlight the qualitative findings from the open-ended questions that formed part of the retention scale.

6.5.2 Open-ended questions

Scale research has a limitation in that respondents can only provide answers to questions that are actually asked. In an attempt to provide the opportunity for an additional range of responses and to clarify employees' understanding of the concepts, several open-ended questions were included in the scale. These are reported in the order in which they appeared in the questionnaire.

6.5.3 Compensation and Recognition

Respondents were asked to indicate if they had any further comments on compensation and recognition at their institutions and 308 qualitative responses were received. Thematic analysis of these comments about compensation and recognition resulted in eight distinct themes that are summarised below:

- compensation inadequate
- restructure compensation
- various reasons more pay needed
- emotional recognition needed
- benefits inadequate
- positive comments
- payroll errors delay
- government stipend

Thirty-eight percent of the responses were passionate statements from employees about how inadequate the compensation was, for example:

“Salary inadequate to meet ever increasing demands, tollgates, petrol, food, electricity, municipal rates, varsity tuition and transport in general. Teachers are met with indifference (not) recognition.”

“The salary I earn is not adequate, I only live and depend on loans.”

“I find that the salary barely covers the expenditure I need to sustain my family. I constantly find myself strapped for cash and having to resort to loans and the related costs.”

“Salaries to be well upgraded in order to attract youth who don't like teaching as it pays less.”

Respondents provided numerous suggestions on how compensation could be restructured with reference specifically to bonuses and pay for exceptional performance (25% of responses). Respondents discussed how additional qualifications or even objective criteria such as student marks, number of students taught, and number of subjects or classes taught, should make a difference in terms of compensation. Some responses referred to additional pay for extra roles and responsibilities that were taken on which might result in discrepancies in working hours, with some employees working long hours and others not. Additional suggestions for restructuring included tax breaks for teachers, increase in housing subsidies and transport allowances.

Respondents provided a variety of reasons why additional pay for educators was required that included high workloads, multiple roles, long working hours, lack of teaching resources and unfair practices in terms of promotions and work allocations.

“I'm doing a double job – teaching and managing the school. The compensation is not adequate for these tasks.”

“Educator's salaries must match the load of work they are doing. Compensation is not adequate at all.”

“Educators earn so little but they work under stressful situations i.e. they work as social workers which they were not trained for and the most part they also work as mid-wife, psychologists etc. which is SO UNFAIR.”

“Some people do nothing and we have to do their work as well.”

“Working does not stop at school at 14:30. It continues until late at night. Marking, filing, compiling rubrics etc. and then extra-mural activities”

Frustrations that educators listed included inadequate pension or medical aid benefits, errors or delays in payroll, a government stipend for grade R practitioners which is inadequate, lack of benefits for grade R practitioners, lack of benefits for SGB teachers, lack of resources, having to pay for their own transport to compulsory training and meetings and the dangerous environments in which some teachers had to work where they felt unsafe at work. Further frustrations were voiced with regards to perceived unequal treatment, unequal application of policies, favouritism and nepotism.

“Lack of resources to do my work. I buy my own resources most of the time.”

“I do work as all the principals and teach just as post level 1 educator, but get paid as an HOD.”

“People who are qualified like me and were employed the same year are senior teachers they earn more than me – it's unfair”

“As teacher we work under unsafe, dangerous environment. We must be compensated for risking our lives and doing more work than teaching. We basically nursing staff, guiders, advisors, social workers in our field of work.”

An additional theme which emerged was that more emotional recognition is needed, including recognition from colleagues and recognition for principals from the district.

“I am very aggrieved by the fact that whatever effort I put on my work it goes unrecognised and not rewarded.”

“The principal has to thank everybody. Nobody thanks the principal.”

“We as educators are not recognised. Our government does not value our work. We are paid peanuts and we have to fight for an increment.”

Positive comments by eight of the respondents included *“compensation and recognition is fair”* and related to employees’ feeling about their jobs *“I love what I do and I know how to do it”*. Some respondents also voiced positive comments about their institution, *“I feel honoured and great to be a member of the institution.”*

The above qualitative responses to the open-ended questions should be viewed together with the descriptive statistics for Compensation and Recognition when the average response indicated that employees were not satisfied with compensation and that there was a wide range of responses to the Compensation and Recognition items.

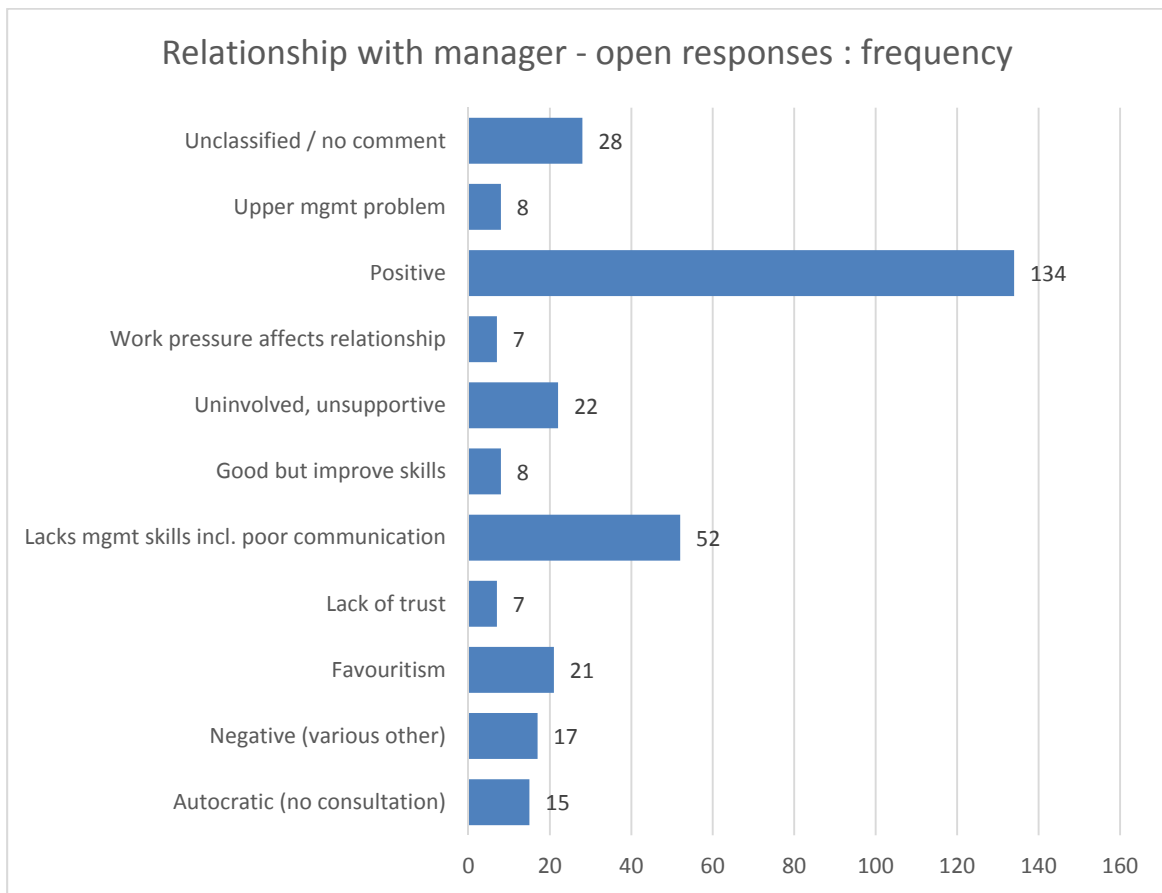
6.5.4 Management support

Employees were asked to respond to the following open-ended question:

Any additional comments regarding your current relationship with your line manager at your institution.

Responses were received from 302 participants who provided a total of 320 responses. Frequency responses are grouped by themes in Figure 6-8.

Figure 6-8: Frequency of responses for relationship with manager – open comments



The single biggest group of responses were 134 positive comments from employees in Gauteng East District who appreciated and praised their direct line managers. Good relationships were characterised by leadership traits and behaviours such as professionalism, dedication, treating staff with respect, empathy, fairness, supportive to employees, good communication, good listening skills, involving staff in solving of problems. For example:

“He’s supportive and praises good practices. He always motivates us to do our best.”

“Communicates issues with staff, involves staff in solving problems.”

“He has an ear for his staff members, he listens.”

“He is a born leader & manager! He is really gifted, thanks God!”

“He is responsible, caring, honest and helpful.”

A group of eight respondents indicated favourable responses with some changes needed such as a manager being too strict, or in another case too lenient or being easily influenced by others. Employees acknowledged that work pressure affected the quality of the relationship at times, for example:

“Due to the pressure of matric results, principals are now focused on departmental interventions thus neglecting their own staff.”

“There's a gap as he is overloaded with manager work.”

“Trust is available but there is too much work which need to be done in short space of time. The demand is too much.”

Complaints about management style from 37 respondents included autocratic management styles characterised by a lack of consultation with employees and managers perceived as unsupportive of or not interested in the well-being of their subordinates. Examples include:

“My line manager she's a dictator and gets emotional easily.”

“She is autocratic, arrogant.”

“He doesn't support us when we voice out things that improves the school. We don't have a functional media centre.”

“I want more support in my classroom – it feels if he doesn't know what is expected from me in [my subject].”

“Not available. If you talk to the manager he tells you what he thinks you want to hear but never does anything. Door is closed more than it is open.”

Poor relationships characterised by a lack of trust were reported by seven respondents. Complaints of favouritism were received from 21 respondents with only one of these referring explicitly to racism and one to sexism. The managerial skill that employees mostly commented on (52 responses) was a need for their managers to improve their communication skills including the ability to give positive feedback, constructive feedback, clear and consistent communication, transparency in

communication and regular communication. Information from district level that relied on internal communication within a school did not always reach the educators.

“The line manager in my institution does not communicate clearly and I feel that they don’t have interest of the educators.” (sic)

“Sharing memos from the district and information can improve working relations.”

“Communication with District Office can improve!”

Other additional management skills that employees commented on that required improvement included planning, organising, scheduling, time-management, consultation, delegation and how to conduct performance appraisals. These responses should be viewed in conjunction with the descriptive findings of the Management Support scale which indicated that the average respondent had a positive relationship with their direct line manager.

6.5.5 Satisfaction with Institutional Practices

Employees were asked the following open-ended question that aimed to provide additional detail on institutional factors that could affect employee satisfaction or dissatisfaction and employee retention.

Does the institution need to make any changes in order to keep talented employees? If yes, please specify what needs to be done.

A total of 326 employees provided 403 responses. A variety of responses were received with employees commenting on the following groups of changes needed for retention of talented employees. Compensation, incentives and recognition remained the single biggest change required with close to a third of employees who responded to this question (32%) expressing the need for this change. Changes to departmental policies were requested by 12% of the employees who completed this question with an acknowledgement that either the GDE or the Department of Basic Education (DBE) decided on the policies and not the school itself. Frustrations about policies extended to curriculum issues and discipline issues among schoolchildren:

“GDE policies frustrate me – I don’t know what I am doing.”

“Keep a stable curriculum that learners cope with instead of changes and confusions all the time. Minimise paperwork.”

“Better ways of disciplining learners. The education level is dropping because of lack of cooperation from parents and learners and disempowerment of educators.”

Approximately 12% of employees spoke up about overloaded teachers including the need to reduce the administration load on teachers, their work hours and the teacher/pupil ratio. Examples include:

“Appoint more teachers to lessen the workload. Classes are huge! 5 Subjects per teacher is monstrous.”

“Currently the number of learners per class prevents me from doing a proper job. Learners with learning difficulties cannot be attended to.”

“Marking books, keeping support forums up to date and preparation with extra-curriculum activities are taking up a lot of time. Normal bed time 12:00–12:30.”

“Reduce workload in educators. Employ teacher assistance.”

Employees asked for change in terms of training and improvement in the management style and skills of their supervisors/managers (9% of responses). A further 9% of responses were related to requests for training and development opportunities for employees themselves.

Requests for improvement and change in inadequate resources such as the school environment, infrastructure, toilets and a lack of technology were recorded for 6% of the responses.

“School building in terrible condition. Toilets also. Need a new school.”

“Yes, the dept. of Ed. must ensure that all educators have access to technology. All of us would like to make use of the internet when teaching – but the school has only 1 projector”.

Frustrations with lack of equality and fairness especially as it pertains to appointment of staff and promotions of staff were expressed by several respondents (6% of responses).

“In my institution promotional post are given to people not about the capability but they (are) given by friendship.”

“Be fair about the promotions within the institutions e.g. senior and master educators”.

A further set of changes were requested relating to utilising employees in the field in which they studied (5% of responses).

“Recognise individual's qualifications and place people in positions as per their academic discipline ...”

“Educators need to teach subjects they have been educated/trained in”.

The results provided additional insight and clarity to the scale questions on satisfaction with Institutional Practices which is reported in section 7.3.

6.5.6 Motivation to stay in current institution

Following the Intention to Quit scale items, respondents were asked a general question, *“What motivates you to stay in your current institution?”*

Responses were received from 621 employees and a total of 875 reasons were given. This question elicited the most qualitative responses.

Thematic analysis resulted in seven themes. One of these was negative (nothing motivates me to stay), one theme centred on lack of other options and the other five themes provided positive reasons to stay. The strongest theme was *“making a difference”*. Respondents believed that they were making a difference in the lives of the children they educated, they enjoyed teaching and making a difference to the future of South Africa by staying in the field of education (374 responses or 43% of responses). Thus the job itself, uplifting others and being responsible members of a community were sub-themes. Examples included:

“I have a passion to teach, I like to share ideas and uplift one another above all to change the learners to be better people.”

“I love working with children. Making a difference in their lives.”

“Seeing my learners being able to read at the end of each year. The effort learners are exerting to their work.”

“Give knowledge to our future leaders.”

“Teaching is a worthwhile career – it is changing our country.”

“Love of my nation and develop SA children.”

The second strongest theme involved positive work relationships and a positive work environment. Relationships included those with managers, supervisors and colleagues. This theme was recorded in 21% of responses or 185 responses and a few examples are provided below:

“Teamwork, respect, excellent manager.”

“The leadership style: Respect, communication is effective ... educators doing their work (with) hearty cheer.”

“The unity and friendship that exist between all members of staff. A calm and warm environment.”

“I love my school and the people here. I have been at many other schools but this school can't be beaten.”

“The school has a very positive and constructive atmosphere. I learn every day and feel appreciated.”

The next major theme that emerged were people that were motivated by security and stability and who regarded themselves as having limited options. Some respondents had resigned themselves to their situation because they believed they had no other choice or were close to retirement age. This theme occurred in 169 responses or 19% of responses and examples included:

“Being able to have a job in this country.”

“Lack of other jobs outside education.”

“Job security, personal reasons and adequate remuneration.”

“I am near retirement and I have worked at this institution for 31 years.”

“Too old to make a change now – want to keep my pension intact.”

“I have few years left to retirement and the devil you know is better.”

Factors influencing personal lifestyle were a motivating factor in 5% or 42 responses. These motivating factors included living close to the school at which they worked and the benefits such as school holidays, medical aid and subsidies. Examples included,

“Its benefits that we have, medical and subsidy, no retrenchments, but redeployments and transfers, we have leave and also school holidays.”

“School holidays during the year.”

“Job security and medical aid.”

“It is near my house – do not have traveling expenses.”

There were individual respondents who were motivated by the career development opportunities although this is a minority response (3% of responses/22 responses). The learning was expressed through the nature of the work itself, learning from different institutions and formal career developmental courses:

“In a learning curve and there is still a lot to learn.”

“Knowledge and acquire more and gain from workshops and symposium.”

“To gain more knowledge from different provinces since provinces don't work the same systems they use when teaching learners.”

A minority response was also expressed by 7 employees who were motivated to stay due to hope that the situation would change for the better, either through their own efforts or by external change as indicated by the following examples,

“Recent developments put in place.”

“Passion to bring change to the organisation.”

“Hope that things will change.”

In summary, it appears that the majority of educators in the study are motivated to stay for altruistic reasons and the belief that they are *“making a difference”* in the lives of the community and children in their care.

6.5.7 Retention of employees

Employees were asked a general retention question: *“Any additional comments regarding what your institution needs to do to keep you as an employee?”*

Thematic analysis of the 330 responses yielded a diverse group of themes with compensation, recognition and incentives remaining the leading retention factors in 19.58% of responses. The frustrations voiced were not just about inadequate compensation but also about the lack of financial recognition for excellence and sustained effort:

“Incentives – Bonus when learners achieve high grades. For 7 years my matrics had a 100% pass rate for my subject = I got NOTHING!!!”

“By recognising one's ability in schoolwork, performance and admin all the efforts done by an individual e.g. positive contributions that build the entire school.”

Educators call for alternative forms of recognition and incentives:

“Awards certificate and incentives.”

“The institution should look at cash incentives or other e.g. weekend get-aways, holidays, allowances, etc.”

“To explore and be engaged in publishing whatever good results the learners and educators have done e.g. African reporter that can really motivate learners and educators.”

Teacher support and development emerged as a strong theme (18.9% of responses) with support including protection and requests for assistance with discipline problems:

“Protect me because we deal with other learners who are smoking dagga, when you reprimand sometimes they are becoming angry.”

“Empower the educators with tools to discipline the learners PLEASE.”

“All schools face a discipline problem with learners.”

Requests for personal and team development for educators were voiced:

“To organise motivational speakers to come and motivate and encourage the staff since our work is stressful.”

“I need developmental support that will enable me to grow more confident at work.”

“To allow me to attend workshops.”

It was not clear why some employees were allowed to attend workshops and other employees were not. The policy around this needed to be communicated to the educators and any misunderstandings clarified. If management had the discretion to prevent some employees from attending or receiving development training there should be a system where employees could request it directly or the district could intervene if educators didn't receive training and development. There was a minority view expressed that resented compulsory training and development: *“Stop (to) making my working hours longer and force me to keep on doing courses to earn points which is compulsory ...”*

Similar to the theme that emerged in the institutional change question, employees did not just ask for development for themselves but also for their management or supervisors. It was also not always clear from the responses whether requests were for themselves or for others.

“Staff development in human relations.”

“Management skill training.”

“Staff development to be done yearly.”

“Offer developmental workshops on all changes/transitions prior to be implemented.”

“Our managers need to be developed on what to manage (how to manage schools).”

Positive relationships at work emerge as a potential retention factor (18.4% of respondents) with specific reference to improvements in team work between colleagues, educators and management and how it needs to improve. *“We need a workshop of how to work as a group or team”*

“Improve the way of communication and work as a team to maintain discipline in the whole institute.”

Familiar frustrations emerged relating to the teacher/pupil ratio and amount of administration. These frustrations were included as part of the departmental policies that need addressing because it impacts on the ability of the educators to properly support their learners.

“Teaching is my passion – paperwork and admin kills it.”

“Our institutions need to look at the large number of learners we have. We are unable to help them individually because of the huge number of learners. We have a ratio of 1:48 and 1:52. We are unable to assist some learners.”

“Less subjects to teach would be a blessing. Less than 44 learners in a class.”

“We need smaller numbers in classes. Classroom space is limited. We need more time to do admin. Support from Admin staff e.g. for making photo copies etc.”

In general, there were requests for change relating to departmental policies, with respondents speaking about resources for learner support and not just teacher support.

“Resources like intercom, library, [and] other technologies to help learners from the disadvantaged areas. Great difference between children from town and squatter

areas. Most of learners involve themselves in sex because no social things like; football, dance clubs, stadiums, halls and other youth libraries. Teenage pregnancy is high in such area.”

“Regular visits to the school will support educators to feel confident. I feel he is not confident of his position and makes him to run away from school. He was never at school/work for the whole day since he got the position.”

Teachers not only indicated a lack of technological resources like computers and internet access but also essential infrastructure such as proper buildings.

“The infrastructure is in a bad state. We teach in mobile classrooms which have never been serviced for the past 12 years. Dangerous potholes”.

“It's unsafe – the ceilings and walls of our institution fall apart...”

“Working environment must be clean, supply me with tea and coffee and toilet paper in the toilet.”

“Heaters or coal stoves in classes. Poor children are freezing.”

Changes relating to the fair/unequal treatment of employees emerged in 9.4% of responses. There were numerous statements about the unfair way in which policies were applied especially with regards to promotions, discipline, allocation of duties and discrimination against foreign teachers. Nepotism and favouritism were mentioned.

“We would like to be treated equally and if there are promotions they should promote people who deserve the post. There must be no favouritism...”

“To ACT against staff who break the rules, to maintain a policy of "what goes for one, goes for all.”

“Spread extra-curricular activities evenly amongst employees. Some educators do extra-murals every day and it is not fair.”

“Get rid of the double standards that are used. Some people are allowed certain things and others are not. Lack of fairness.”

“I am a foreigner who knows his stuff but I get frustrated to be a temporary teacher for years yet I am delivering service. It’s as if the RSA government wants to use us only without caring for our future”.

Responses to this item provided retention information beyond the scope of the scale items that enhance our understanding of retention in public schools in Gauteng East.

6.5.8 Summary of qualitative findings

The qualitative responses provided valuable insight into both potential turnover and retention factors that influenced the motivation of employees and the extent of the change required in order to retain top-performing employees. The richness of the responses and the variety of the answers provided a greater depth and breadth of responses than the scale items alone. The conclusion is that open-ended questions should be included whenever this scale is used for turnover and retention research in order to open up the diversity of retention and turnover variables provided by employees.

From a methodological perspective the answers to the questions *“What does the institution need to do to keep you as an employee?”* and *“Does the institution need to make any changes in order to keep talented employees?”* were very similar. The greater breadth of responses to the first question might be related to positioning in the questionnaire as it was positioned directly after the Compensation and Management Support scales and before the questions about factors that might influence employees to leave. This positioning of the question might have influenced both the content and the variety of responses provided. The second question, *“Does the institution need to make any changes in order to keep talented employees?”* was positioned directly before the Institutional Practice scale and after the questions on factors that might influence employees to leave. That might have resulted in respondents commenting on factors raised in the scale itself thus limiting the

diversity of responses. In future versions of the questionnaire it would probably be adequate to just include the first question in the position it is currently in and omit the second question in order to reduce respondent fatigue.

6.6 SUMMARY

In this chapter the results of the developmental study among a sample of employees in general education was initiated. Step 6 of the scale development process which is to “design and conduct a developmental study” was presented (DeVellis, 1991:51–90); Hinkin (1995); Tharenou *et al.* (2007:165–169).

The developmental study in GDE was reported in terms of the data collection approach followed in the GDE study. In addition, the demographic and biographical results of the GDE study, the analysis of non-psychometric components of the measurement scale, namely *job search* and *most likely reasons to leave* were described. Furthermore the data analysis of qualitative responses to open-ended questions included in the retention scale was presented.

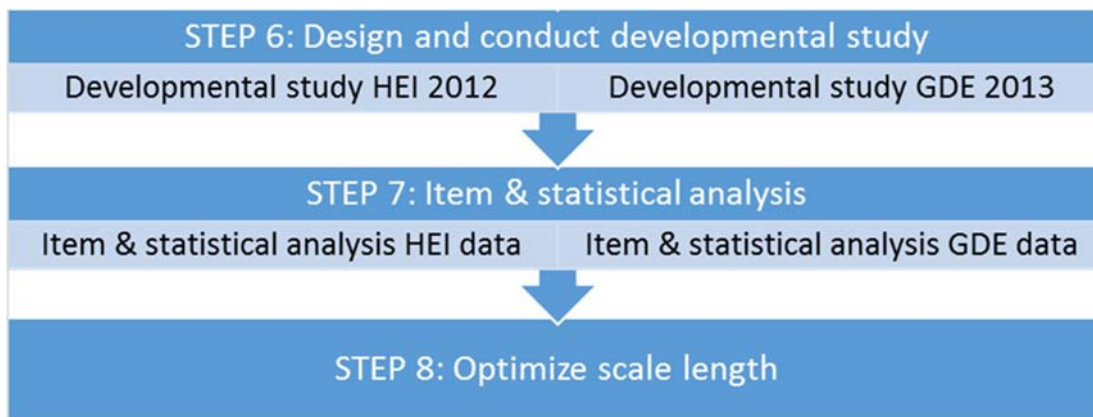
Due to the complexity and length of the required data analysis the psychometric analysis will be presented in Chapters 7 and 8. This forms part of Steps 7 and 8 in the scale development process which is to “conduct item evaluations” and to “conduct a validation analysis” (DeVellis, 1991:51–90; Hinkin, 1995; Tharenou *et al.*, 2007:165–169).

CHAPTER 7: TALENT RETENTION SCALE VALIDATION ANALYSIS – GDE SAMPLE

7.1 INTRODUCTION

Item evaluations and validation analysis form part of the scale development process which is described in section 2.2 and in Figure 1-1. An extract of the scale development process from Figure 1-1, as it applies to the current chapter is shown below, with the understanding that Chapter 7 continues to provide feedback on the results of the developmental study conducted in the GDE. Step 6 of the GDE study is reported in Chapter 6 along with the demographic, descriptive and qualitative findings. This chapter focuses on the psychometric analysis of the talent retention instrument (Steps 7 and 8) that was applied in the GDE sample.

Extract from Figure 1-1: Scale development process



Therefore, in this chapter the psychometric analyses for each of the sections of the Talent Retention Scale (TRS) are presented. The analysis of the Compensation and Recognition items is followed by an analysis of the Management Support items. Hereafter the items pertaining to Institutional Practices are described and validated. Although the Intention to Quit (ITQ) scale is a pre-existing scale (Cohen, 1993) select analyses are conducted in order to assess the functioning of this scale in this particular sample in general education in South Africa.

As part of the scale development process, basic item evaluations had to be done to evaluate the methodological quality of the scale items. The nature and definitions of these analyses are described in section 2.5 and will not be repeated here. In brief, the statistical analyses include item-total correlations; item variance; item means and an assessment of the internal consistency reliability of the items comprising a scale by calculating Cronbach's co-efficient alpha, as recommended by (DeVellis, 1991:82–85). Exploratory factor analysis, confirmatory factor analysis and invariance testing results are also presented. There are numerous possible criteria that can be applied during evaluation of the statistical analyses listed above and the criteria can differ depending on factors such as the sample size, number of items in the scale, complexity of the statistical model and the fit measures used to evaluate the goodness-of-fit of the statistical model (Byrne, 2010; Hair *et al.* 2010). These concepts and terms are described in section 2.5.3. The evaluation criteria that were used for the different types of psychometric analyses adopted in this study are presented in Table 7-1.

Table 7-1: Summary of the evaluation criteria for different types of psychometric analyses

Exploratory factor analysis	Criteria	References
KMO measure of sampling adequacy: ranges from 0 to 1. Scores closer to 1 demonstrate a compact pattern of correlations. If criteria are met it implies the sample is suitable for factor analysis	Minimum criteria 0.50 0.7+ Good; 0.8 to 0.9+ Very good	Hair <i>et al.</i> (2010:93) Field (2009:788)
Bartlett's test of sphericity – highly significant results imply that the correlations within the correlation matrix are significant and several of the correlation coefficients are larger than 0.3	Significance of 0.000 implies that items are suitable for factor analysis.	Field (2009) Hair <i>et al.</i> (2010:92)
Promax rotation is an oblique rotation method in SPSS which allows the extracted factors to be correlated	Factors are assumed to be correlated and thus an oblique rotation was indicated.	Field (2009:792) Worthington and Whittaker (2006:820)
Reliability Analysis	Criteria	References
Cronbach's coefficient alpha – measure of internal consistency reliability	0.7+ Acceptable 0.8+ Good 0.9+ Very good It is possible that items are duplicated and it may be necessary to remove redundant items in order to shorten the scale	Field (2009:675)

Chapter 7: Item Evaluations and Validation

Confirmatory Factor Analysis	Criteria	References
SMC – Squared multiple correlation coefficients – the proportion of variance that can be explained by the predictors of the specified variable (Byrne, 2010:191).	Above the 0.3 level in order to retain an item in the scale	Tabachnick and Fidell (2001)
ML Standardised Estimates – maximum likelihood estimated standardised loadings)	Above 0.5 - Adequate Above 0.7 - Recommended as ideal	Hair <i>et al.</i> , (2010:686)
C.R. – Critical Ratio represents the estimate divided by its standard error (S.E.)	Should exceed 1.96 in order to be significant	Byrne (2010:120)
Fit measures	Criteria	References
RMSEA – root mean square error of approximation Smaller values are preferred	Ideal < 0.05 for good fit Acceptable fit 0.05–0.08 Upper limit of reasonable fit 0.08	Schermelleh-Engel <i>et al.</i> (2003:36) Vandenberg and Lance (2000:44)
IFI – Incremental fit index TLI –Tucker-Lewis index CFI – Comparative fit index Ranges between 0 and 1. Closer to 1 is indicative of better fit.	0.90 lower limit of good fit 0.90 to 0.95 – good fit 0.95+ high confidence in fit Ideal criteria 0.95+	Vandenberg and Lance (2000:44) Little, Card, Slegers and Ledford (2007:138) Hu and Bentler (1999:27)
PCFI – Parsimonious comparative fit index	High parsimony preferred – few parameters and relatively many degrees of freedom	Arbuckle (2014:618)
AIC – Akaike information criterion used in model comparisons with maximum likelihood estimation. Models do not have to be nested but AIC is not interpreted in isolation only in comparison with other models. AIC penalises degrees of freedom and reflects the number of estimated parameters in the model.	Best fitting model has the smallest AIC.	Arbuckle (2014:625) Schermelleh-Engel <i>et al.</i> (2003:45-46). Byrne (2010:82)
BCC – Browne and Cudeck criterion is an “information theoretic index” similar to AIC used to compare models. BCC penalises model complexity.	The model with the smallest BCC is the best fitting model	Cheung and Rensvold (2002:244) Byrne (2010:82)
BIC – Bayesian information criterion is an information index similar to AIC that can be used to compare models that are not nested. BIC penalises model complexity. A negative BIC implies that the model fits better than the saturated model and a large positive number implies that the model fits worse than the saturated model	The model with the smallest BIC value can be regarded as the best fitting model and the most parsimonious model. The smallest value could be the largest negative value.	Little, Bovaird and Widaman (2006:507) Byrne (2010:82)

CMIN/df ratio	< 2 very good fit 2-5 reasonable fit	Marsh and Hocevar, (1985:567); Byrne (2010)
Invariance testing		
Chi-square difference or the likelihood ratio test statistic or χ^2 statistic Requires a reference model Large samples can produce significant differences and the chi-square difference test should not be used as the only criteria in large samples	If results from the nested model comparisons reveal no significant differences between groups – the more parsimonious model is preferred, since it does not fit significantly worse than the less restricted model	Byrne (2010:78-79) Schermelleh-Engel <i>et al.</i> (2003:33) Chen (2007:465) Strasheim (2011)

Invariance testing

Although invariance testing is extensively described in section 2.5.3, a brief summary is presented here for the sake of convenience, using the model numbering that is similar to the one used by Strasheim (2011). When a first-order confirmatory factor analysis (1CFA) is used, the unconstrained model **M0** is a model in which the same factor structure is assumed over the groups being compared. The measurement weights model **M1** is a model in which the factor loadings are constrained equal across groups, also referred to as metric invariance. Model **M2** or the measurement intercepts model, has the measurement weights as well as the measurement intercepts constrained equal across groups and this model is also referred to as the scalar invariant model. Model **M3** has the same form, and measurement weights and intercepts are equally constrained and the latent means are constrained equal over groups. In model **M4** the structural covariances and variances of the latent variables are equally constrained over groups in addition to the constraints of model M3. In the measurement residual model, **M5**, all the parameters are constrained equal over the groups. In addition to the constraints in M4, the error variances are also constrained equal (Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000; Vandenberg, 2002; Strasheim, 2011).

In order for the assumption of measurement equivalence to hold across groups, it is necessary that models M0, M1 and M2 fit adequately in terms of the usual fit criteria, specifically IFI/TLI/CFI and the RMSEA, and that in the nested model comparisons, model M1 compared to model M0 (M1–M0) does not fit significantly worse than

model M0; and that model M2 does not fit significantly worse than model M1 (M2–M1) (Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000; Vandenberg, 2002; Strasheim, 2011; Strasheim, 2014).

Split Sample

As explained in section 2.5.3 an exploratory factor analysis is useful to determine a possible hypothetical factor structure that provides an explanation of the phenomenon, and this factor structure is then confirmed or not confirmed using CFA. However, when a CFA was conducted on the initial factor structure based on the EFA results from the HEI sample, the factor structure did not replicate well. The CFA model was modified, for example by removing items with low squared multiple correlations. The CFA model based on the factor pattern suggested in the HEI sample had to be abandoned. Therefore, the approach that was taken was to split the GDE sample randomly in two groups of respondents with equal sizes. The RANDBETWEEN function in Microsoft Excel was used and the process yielded two groups of size n=574 respondents each. An EFA was conducted on one half of the sample, and based on these results, a confirmatory factor analysis (CFA) was conducted on the other half of the sample, in order to conduct a thorough psychometric assessment of the TRS. The TRS (see Addendum A) consisted of mainly three parts, namely: Compensation and Recognition (Section B with items B1 to B9), Manager Support (Section C, items C1 to C9); Institutional Practices (Section F, items F1 to F14); and lastly for the three items of Section G, items G1 to G3 on the Intention to Quit scale.

7.2 PSYCHOMETRIC ANALYSIS OF COMPENSATION AND RECOGNITION SCALE

The Compensation and Recognition section of the survey utilised a 6–point Likert scale ranging from 1 = *Strongly disagree* and 6 = *Strongly agree*. Employees are asked how they felt about their Compensation and Recognition for the work they did and to rate the extent of their agreement or disagreement with nine statements.

7.2.1 Descriptive statistics for Compensation and Recognition items

The descriptive statistics for the nine Compensation and Recognition items are summarised in Table 7-2.

Table 7-2: Descriptive statistics for Compensation and Recognition items

Items		1=Strongly disagree	2=Disagree	3=Slightly disagree	4=Slightly Agree	5=Agree	6=Strongly agree	Total	M	SD	Skew.	Kurt.
		Disagree			Agree							
B1: My basic salary is adequate	Freq.	371	296	140	180	107	22	1116	2.48	1.432	0.634	-0.769
	%	33.2	26.5	12.5	16.1	9.6	2.0					
	%	72.3			27.7							
B2: My medical aid benefits are adequate	Freq.	188	222	159	208	232	47	1056	3.20	1.536	0.020	-1.249
	%	17.8	21.0	15.1	19.7	22.0	4.5					
	%	53.9			46.1							
B3: My pension benefits are adequate	Freq.	220	244	171	244	172	33	1084	3.00	1.474	0.141	-1.154
	%	20.3	22.5	15.8	22.5	15.9	3.0					
	%	58.6			41.4							
B4: I am praised and thanked for the work that I do	Freq.	205	196	145	203	253	114	1116	3.40	1.662	-0.056	-1.300
	%	18.4	17.6	13.0	18.2	22.7	10.2					
	%	48.9			51.1							
B5: I am fairly compensated for the work that I do	Freq.	282	280	181	171	138	31	1083	2.72	1.466	0.458	-0.930
	%	26.0	25.9	16.7	15.8	12.7	2.9					
	%	68.6			31.4							
B6: The bonus structure is fair	Freq.	217	202	150	215	253	66	1103	3.26	1.599	-0.023	-1.296
	%	19.7	18.3	13.6	19.5	22.9	6.0					
	%	51.6			48.4							
B7: The incentives and perks make my job worthwhile	Freq.	398	275	131	157	89	27	1077	2.39	1.438	0.764	-0.546
	%	37.0	25.5	12.2	14.6	8.3	2.5					
	%	74.7			25.3							
B8: The bonus structure reflects my contribution to the organisation	Freq.	307	275	146	175	145	34	1082	2.70	1.511	0.471	-1.009
	%	28.4	25.4	13.5	16.2	13.4	3.1					
	%	67.3			32.7							
B9: I get adequate emotional recognition for the work that I do	Freq.	241	274	162	197	167	50	1091	2.93	1.529	0.310	-1.099
	%	22.1	25.1	14.8	18.1	15.3	4.6					
	%	62.1			37.9							

The descriptive statistics presented in Table 7-2 include the frequency and percentage distributions of the six intervals of the scale, the number of respondents per item, and the means, standard deviations, skewness and kurtosis for each item. Frequencies and percentages are additionally clustered according to the extent of disagreement and the extent of agreement with each of the nine items.

In Table 7-2, the two items with the lowest means are item B7 “the incentives and perks make my job worthwhile” (2.39) and item B1 “my basic salary is adequate” (2.48). This implies that on average the majority of respondents disagreed with these statements. Frequency analysis of item B7 reveals that 74.7% of the respondents who answered this item disagreed that incentives and perks make their job worthwhile. Frequency analysis of item B1 shows that 807 of the 1 116 respondents (72.3%) who answered this item slightly to strongly disagreed with this statement about their basic salary being adequate. In contrast, the item with the highest mean is item B4, “*I am praised and thanked for the work that I do*” (3.40) and frequency analysis for this item reveals that just over half of the respondents (51%) agreed with this statement. The majority of respondents (62%) disagreed that the emotional recognition they received for the work they did was adequate. More than half of respondents expressed a degree of dissatisfaction with their pension benefits (58.6%) and their medical aid benefits (53.9%). The majority of the items are positively skewed and show a peak to the left of the mean. For items with means of less than 3, positive skewness implies a stronger disagreement with the statement. The two items which show a peak to the right of the mean (negatively skewed) distribution are “*my bonus structure is fair*” and “*I am praised and thanked for the work that I do*”. Examination of the kurtosis of the items of this scale items reveals only negative values which indicate a relatively flat distribution as opposed to a normal distribution (Hair *et al.*, 2010).

7.2.2 Validation analysis for Compensation and Recognition scale

Initially, the Compensation scale was developed as a single factor scale and exploratory factor analysis (EFA) among the HEI sample resulted in a single factor for Compensation. However, for the GDE sample a confirmatory factor analysis

modelling a single factor for the items B1 to B9 did not yield acceptable results. The researcher therefore questioned whether a single factor would be appropriate to represent the dimensions. The split sample methodology described in the introduction to Chapter 7 was applied and an EFA was conducted on Split Sample 1. The results of the EFA were considered and, based on these results, a CFA analysis was conducted on Split Sample 2.

7.2.2.1 KMO and Bartlett's for Compensation and Recognition items on Split Sample 1

The KMO measure of sampling adequacy was conducted and produced a result of 0.873 which met the criteria for further factor analysis. In addition, Bartlett's test of sphericity had a significance value of 0.000 which supported the assumption that the items were suitable for exploratory factor analysis.

7.2.2.2 EFA for Compensation and Recognition items on Split Sample 1

Item scale correlations were performed on the nine items in an attempt to find an underlying structure of the relationship among the variables. Several of these correlations exceeded a value of 0.3, which supported the suitability of conducting an EFA analysis. Principal axis factoring analysis was conducted using the Promax rotation methods with Kaiser normalisation using SPSS 22. In the exploratory factor analysis for the first split sample, two eigenvalues were greater than 1 as required by the Kaiser criterion (in Worthington & Whittaker, 2006). However, the factor pattern when two factors were extracted, did not produce a factor pattern that was clearly interpretable, but when three factors were extracted, the solution produced a clear pattern that made logical sense. The eigenvalues and the total variance explained for the obtained factor structure for the Compensation and Recognition items for Split Sample 1 is shown in Table 7-3.

Chapter 7: Item Evaluations and Validation

Table 7-3: Total variance explained for Compensation and Recognition – Split Sample 1

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.802	53.359	53.359	4.427	49.194	49.194	4.074
2	1.138	12.639	65.998	0.809	8.992	58.186	3.033
3	0.775	8.608	74.606	0.417	4.630	62.816	3.025
4	0.562	6.243	80.848				
5	0.452	5.017	85.866				
6	0.379	4.214	90.080				
7	0.345	3.835	93.915				
8	0.286	3.177	97.091				
9	0.262	2.909	100.000				

The three-factor solution explained 75% of the variation in the items and yielded a pattern matrix which provided factors that were clearly distinguishable and without cross-loadings. The resulting pattern matrix is shown in Table 7-4.

Table 7-4: Pattern matrix for Compensation and Recognition

Items	Factor ¹		
	1	2	3
B8: The bonus structure reflects my contribution to the organisation	0.858		
B7: The incentives and perks make my job worthwhile	0.833		
B6: The bonus structure is fair	0.651		
B5: I am fairly compensated for the work that I do	0.563		
B1: My basic salary is adequate	0.519		
B2: My medical aid benefits are adequate		0.837	
B3: My pension benefits are adequate		0.833	
B4: I am praised and thanked for the work that I do			0.794
B9: I get adequate emotional recognition for the work that I do			0.776

1: Factor loadings smaller than 0.35 are not shown

The resulting three factors were labelled as follows:

Chapter 7: Item Evaluations and Validation

FB1: *Compensation* (B8, B7, B6, B5 and B1) is a factor that reflects the degree to which respondents perceived their immediate financial compensation to be adequate.

FB2: *Benefits* (B3 and B2) is a factor that reflects the degree to which respondents felt their medical and pension benefits were adequate.

FB3: *Emotional Recognition* (B4 and B9) is a factor that measures the degree to which the respondents felt that their work was appreciated.

The factor pattern resulted in all items showing high loadings, ranging between 0.519 and 0.858, and there were no cross-loadings present. The clear pattern without cross-loadings suggests acceptable convergent validity of the items' associations with the specific factors. From the factor correlation matrix in Table 7-5, the correlations between the extracted factors ranged between 0.432 and 0.686, suggesting adequate discriminant validity between the factors, suggesting that the factors are conceptually distinct (Byrne, 2010; Garson, 2011).

Table 7-5: Factor correlation matrix for Compensation and Recognition – Split Sample 1

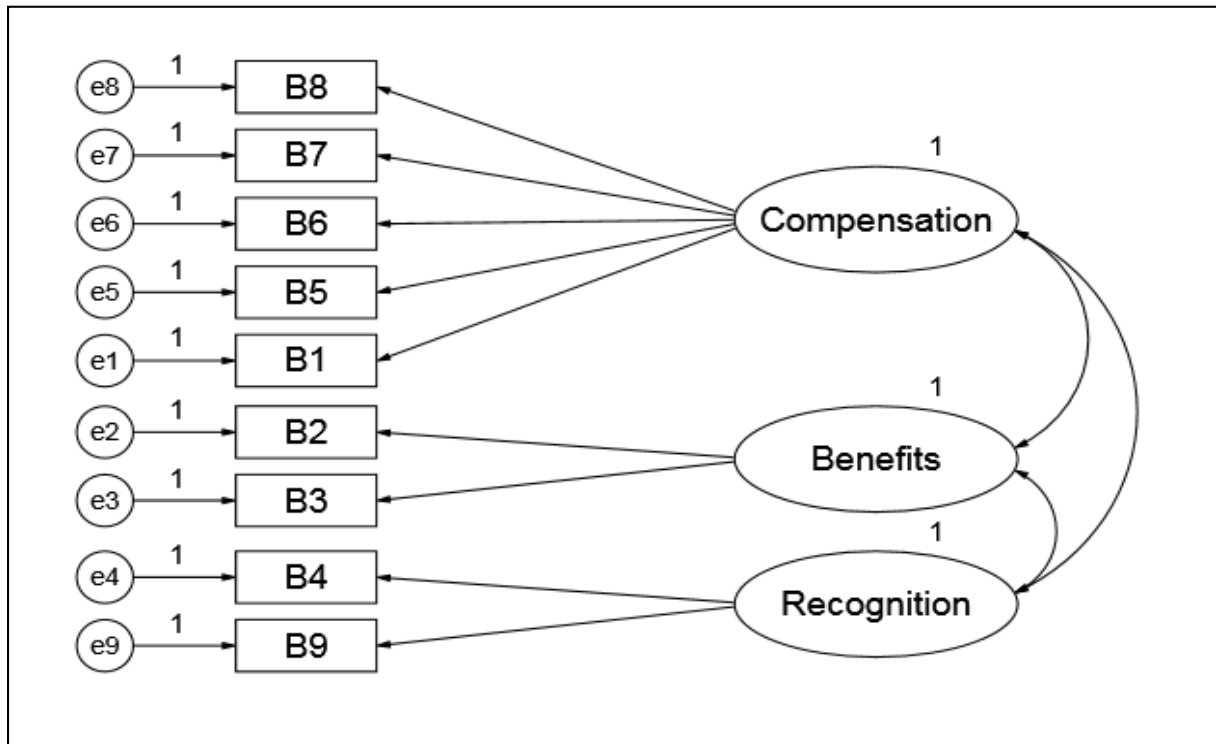
Factor	1	2	3
1	1.000	0.643	0.686
2	0.643	1.000	0.432
3	0.686	0.432	1.000

7.2.2.3 CFA for Compensation and Recognition items on Split Sample 2

Based on the results of the EFA which produced a three-factor structure, a CFA was conducted on Split Sample 2 for the Compensation and Recognition items using SPSS AMOS 22. The CFA model with three latent variables, was used to test whether the factor structure found for Split Sample 1 could be replicated for the data in Split Sample 2. Since the items did not depart severely from normality, maximum likelihood estimation was used. The model fitted in the CFA analysis for the Compensation and Recognition items is depicted in Figure 7-1.

Chapter 7: Item Evaluations and Validation

Figure 7-1: CFA 3 Factor Model for Compensation and Recognition



The measures of fit in Table 7-6 suggest that this model provided adequate fit with IFI and CFI larger than 0.93, however, TLI = 0.883 and RMSEA = 0.10 and based on these two measures, the fit was somewhat marginal. However, TLI and RMSEA are known to perform better in more complex models (Schermelleh-Engel *et al.*, 2003).

Table 7-6: Measures of fit for Compensation and Recognition – Split Sample2

Model	NPAR	CMIN	df	P	CMIN/df
Unconstrained	30	309.403	24	0.000	12.892
	IFI	TLI	CFI		
Unconstrained	0.938	0.883	0.937		
	RMSEA	LO 90	HI 90	PCLOSE	
Unconstrained	0.102	0.092	0.112	0.000	

The maximum likelihood estimates mapping the underlying latent variables to the items, are presented in Table 7-7.

Chapter 7: Item Evaluations and Validation

Table 7-7: ML estimated regression coefficients for Compensation and Recognition – Split Sample2

Item	Factor	Estimate ¹	S.E.	C.R.	P	Standardised Estimate	Error variances	SMC
B1	<--- Compensation	0.978	0.057	17.314	***	0.681	1.110	0.463
B5	<--- Compensation	1.064	0.056	18.836	***	0.730	0.990	0.533
B6	<--- Compensation	1.143	0.063	18.073	***	0.704	1.332	0.495
B7	<--- Compensation	1.110	0.054	20.453	***	0.775	0.821	0.600
B8	<--- Compensation	1.110	0.057	19.352	***	0.742	1.002	0.551
B3	<--- Benefits	1.221	0.060	20.248	***	0.844	0.602	0.712
B2	<--- Benefits	1.108	0.064	17.395	***	0.735	1.041	0.541
B9	<--- Recognition	1.243	0.065	19.184	***	0.805	0.840	0.648
B4	<--- Recognition	1.293	0.070	18.481	***	0.772	1.137	0.595

1: In the CFA model, the means and variances of the latent variables were constrained equal to 0 and 1 respectively for the purposes of model identification (Bollen, 1989).

The maximum likelihood estimated standardised loadings as shown in Table 7-7 are mostly 0.7 and higher as recommended in Table 7.1 and further lend support for the convergent validity of the Compensation and Recognition items in a three-factor solution. The estimated correlations between the latent variables are shown in Table 7-8, and the highest correlation is 0.769, which suggests that discriminant validity may not be very clearly established between the sub-constructs (Garson, 2011) although there are still very clear conceptual distinctions between these constructs, specifically within general education in a South African context.

Table 7-8: Estimated correlations for Compensation and Recognition - Split Sample2

Correlations			Estimate
Compensation	<-->	Benefits	0.769
Recognition	<-->	Compensation	0.746
Recognition	<-->	Benefits	0.486

7.2.3 Reliability statistics for Compensation and Recognition items

The reliability of the three-factor scale for Compensation and Recognition was additionally assessed using Cronbach's coefficient alpha of internal consistency reliability. Following the EFA in Split Sample 1, and the CFA in Split Sample 2, a

Cronbach's alpha was calculated for each of the three factors identified. Evaluation of reliabilities should consider the number of items in the scale (Field, 2009: 675) and there were two factors that had two items each. The Cronbach's alpha ratings for the three factors lay between 0.764 on a two-item factor and 0.868 on a five-item factor. The results in Table 7-9 suggested sufficient internal consistency between the items indicating each latent variable, for each of the two split samples, as well as for the entire sample.

Table 7-9: Cronbach's coefficient alpha for Compensation and Recognition

Construct	Items	Split sample 1	Split sample 2	Entire sample
Compensation	B1, B5, B6, B7, B8	0.868	0.851	0.859
Benefits	B2, B3	0.811	0.765	0.789
Recognition	B4, B9	0.766	0.764	0.765

7.2.4 Invariance testing for Compensation and Recognition items

An evaluation of the measurement equivalence of the scales is important for a complete psychometric assessment of the proposed scale. Three sets of invariance testing were conducted for the Compensation and Recognition items. Firstly, measurement invariance was conducted over the two split samples. The rationale for assessing the measurement invariance over the split samples was that it would allow an assessment of the extent to which the sample splits could be assumed to be random, and therefore it provided support for using EFA on the one sample to obtain a factor solution, and then in the second step to test whether the obtained factor solution replicated in the second sample.

Secondly, since there might have been gender differences in how the item content was perceived, it was required that measurement invariance be tested across males and females. Thirdly, in order to also assess the measurement validity of the scale in a South African working environment where several cultural groups might have been involved when scales were applied in practice, it was essential to test the measurement equivalence of the proposed scale across PDI and non-PDI groups. The criteria for establishing measurement invariance are described in section 2.5.3

and key criteria for the likelihood ratio test when nested models were compared, are summarised briefly in Table 7-1.

7.2.4.1 Invariance testing over Split Sample 1 and Split Sample 2

Using the SPSS AMOS 22 multiple-group (MG) procedure for the invariance testing, five increasingly restrictive models were developed and fitted on both Split Sample 1 and Split Sample 2. Model M0 was the unconstrained model, where models of the same form were simultaneously fitted over the groups, with fixed and free parameters identical across the samples. Model M1 was a model in which the measurement weights were constrained equal, and model M2 imposed the same restrictions as model M1, but it additionally imposed intercept constraints of the indicator variables. Model M3 had the same constraints as model M2, but the variances of the latent variables and the covariances between the latent variables were also constrained equal. Lastly, model M4 constrained the remainder of the free parameters, namely the error variances equal. The resulting fit measures are displayed in Table 7-10.

Table 7-10: Invariance testing across Split Sample1 and Split Sample2

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	60	337.0	48	0.000	7.020	457.0
M1	Measurement weights	51	341.9	57	0.000	5.998	443.9
M2	Measurement intercepts	42	353.9	66	0.000	5.361	437.9
M3	Structural covariances	39	359.1	69	0.000	5.204	437.1
M4	Measurement residuals	30	367.6	78	0.000	4.712	427.6
	Saturated model	108	0.0	0			216.0
	Independence model	18	4650.0	90	0.000	51.666	4686.0
Model	Baseline comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.937	0.881	0.937	0.500	459.1	190.1
M1	Measurement weights	0.938	0.901	0.938	0.594	448.4	173.2
M2	Measurement intercepts	0.937	0.914	0.937	0.687	443.8	162.5
M3	Structural covariances	0.937	0.917	0.936	0.718	438.5	147.9
M4	Measurement residuals	0.937	0.927	0.937	0.812	428.6	128.9
	Saturated model	1.000		1.000	0.000	219.8	
	Independence model	0.000	0.000	0.000	0.000		4374.6
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		

Chapter 7: Item Evaluations and Validation

M0	Unconstrained	0.072	0.065	0.080	0.000		
M1	Measurement weights	0.066	0.059	0.073	0.000		
M2	Measurement intercepts	0.062	0.055	0.068	0.001		
M3	Structural covariances	0.061	0.054	0.067	0.002		
M4	Measurement residuals	0.057	0.051	0.063	0.025		
	Independence model	0.210	0.205	0.215	0.000		

When the fit measures of these models in Table 7-10 are considered, the IFI, TLI and CFI were well above 0.90, which met the criteria for adequate fit as described in Table 7-1. The RMSEA was 0.057 for the most constrained model in which all parameters were constrained equal which suggested that this completely constrained model still resulted in a good fit across the two split samples.

The nested model comparisons in Table 7-11 provide the chi-square difference test (or the likelihood ratio test) against different reference models.

Table 7-11: Nested model comparisons for Split Sample1 and Split Sample2 for Compensation and Recognition

Model	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1–M0	Measurement weights	9	4.931	0.840
M2–M0	Measurement intercepts	18	16.884	0.531
M3–M0	Structural covariances	21	22.108	0.393
M4–M0	Measurement residuals	30	30.585	0.436
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	9	11.952	0.216
M3–M1	Structural covariances	12	17.177	0.143
M4–M1	Measurement residuals	21	25.653	0.220
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3–M2	Structural covariances	3	5.224	0.156
M4–M2	Measurement residuals	12	13.701	0.320
M3	Assuming model Structural covariances (M3) to be correct:	df	CMIN	P
M4–M3	Measurement residuals	9	8.476	0.487

The reference model is shown in bold in the table. Since none of the increasingly restrictive models fitted significantly worse than the model with fewer constraints, it provided adequate support that complete measurement invariance could be assumed to hold across Split Samples 1 and 2. This result supports that the method of splitting the sample could be assumed to have produced two equivalent samples as far as the items in Section B of the questionnaire which measures employee perceptions of Compensation and Recognition were concerned.

The factor structure fitted well and the proposed factor structure from Split Sample 1 replicated in Split Sample 2. It is thus not unrealistic to claim that the most constrained model that constrained all parameters equal, showed full equivalence across Split Sample 1 and Split Sample 2, and therefore the action of randomly splitting the sample in two produced two very similar samples in terms of the factor structure that was obtained.

7.2.4.2 Invariance testing over gender groups

Invariance testing was secondly conducted across gender groups. The fit measures in Table 7-12 show adequate fit for the models, up to the level of measurement residuals. The IFI, TLI and CFI all exceed 0.9 and the RMSEA for the most constrained model, where measurement residuals were equally constrained, is 0.058, which is indicative of ideal fit (see Table 7-1).

Table 7-12: Invariance testing across gender groups for Compensation and Recognition

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	60	322.9	48	0.000	6.726	442.9
M1	Measurement weights	54	334.5	54	0.000	6.195	442.5
M2	Measurement intercepts	48	338.3	60	0.000	5.638	434.3
M3	Structural means	45	342.2	63	0.000	5.431	432.2
M4	Structural covariances	39	349.5	69	0.000	5.065	427.5
M5	Measurement residuals	30	368.8	78	0.000	4.729	428.8
	Saturated model	108	0.0	0			216.0
	Independence model	18	4568.6	90	0.000	50.762	4604.6
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.939	0.885	0.939	0.501	445.8	176.5
M1	Measurement weights	0.938	0.896	0.937	0.562	445.1	169.9

Chapter 7: Item Evaluations and Validation

M2	Measurement intercepts	0.938	0.907	0.938	0.625	436.6	155.4
M3	Structural means	0.938	0.911	0.938	0.656	434.4	150.1
M4	Structural covariances	0.938	0.918	0.937	0.719	429.4	139.2
M5	Measurement residuals	0.935	0.925	0.935	0.810	430.3	131.1
	Saturated model	1.000		1.000	0.000	221.3	0.0
	Independence model	0.000	0.000	0.000	0.000	4605.4	4294.2
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.072	0.064	0.079	0.000		
M1	Measurement weights	0.068	0.061	0.075	0.000		
M2	Measurement intercepts	0.064	0.058	0.071	0.000		
M3	Structural means	0.063	0.057	0.070	0.001		
M4	Structural covariances	0.060	0.054	0.067	0.003		
M5	Measurement residuals	0.058	0.052	0.064	0.015		
	Independence model	0.211	0.206	0.216	0.000		

From Table 7-12, it is clear that the measurement intercepts model, which is the minimum requirement for equivalence in order to have valid mean comparisons (Steenkamp & Baumgartner, 1998), is a reasonable model. It is therefore valid to assume that measurement invariance is tenable for the three-factor Compensation and Recognition scale across gender groups.

The nested model comparisons in Table 7-13 provide the likelihood ratio test results against the reference model shown in bold. The most important test of measurement invariance is whether a model of the same form in which the measurement weights M1 (metric invariance) as well as the measurement intercepts M2 (scalar invariance) are equally constrained, does not fit significantly worse than the unconstrained model M0. When the nested model comparisons are considered, the measurement intercepts model M2, compared to the measurement weights model M1 (M2–M1) revealed that scalar and metric invariance can be assumed to hold between male and female groups for Compensation and Recognition and the model could thus be described as suitable for comparisons across gender groups. Results indicated that males and females perceived the questions or items in a similar way and these are reported in Table 7-13.

Table 7-13: Nested model comparisons across gender groups for Compensation and Recognition

Models compared	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1–M0	Measurement weights	6	11.671	0.070
M2–M0	Measurement intercepts	12	15.450	0.218
M3–M0	Structural means	15	19.322	0.199
M4–M0	Structural covariances	21	26.641	0.183
M5–M0	Measurement residuals	30	45.992	0.031
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	6	3.779	0.707
M3–M1	Structural means	9	7.652	0.570
M4–M1	Structural covariances	15	14.970	0.454
M5–M1	Measurement residuals	24	34.322	0.079
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3–M2	Structural means	3	3.873	0.276
M4–M2	Structural covariances	9	11.191	0.263
M5–M2	Measurement residuals	18	30.543	0.032
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	6	7.318	0.292
M5–M3	Measurement residuals	15	26.670	0.032
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	9	19.352	0.022

7.2.4.3 Invariance testing across PDI/non-PDI groups

Table 7-14 provides the fit statistics of the various invariance testing models across the PDI and non-PDI groups. The results suggested that the measurement intercepts model M2 fitted sufficiently with both IFI and CFI equal to 0.917, but with a marginal TLI at (0.875). However, the measurement intercepts model indicated a RMSEA of 0.074 for the unconstrained model, which is within the cut-off of 0.08 suggested by Vandenberg and Lance (2000:44) as a limit of reasonable fit. When the AIC, BCC and BIC results are considered, the lowest value obtained was for the unconstrained model, suggesting that the unconstrained model offered the best fit for the observed data.

Chapter 7: Item Evaluations and Validation

Table 7-14: Invariance testing across PDI/non-PDI groups for Compensation and Recognition

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	60	350.3	48	0.000	7.298	470.3
M1	Measurement weights	54	373.9	54	0.000	6.923	481.9
M2	Measurement intercepts	48	440.9	60	0.000	7.348	536.9
M3	Structural means	45	461.9	63	0.000	7.332	551.9
M4	Structural covariances	39	486.5	69	0.000	7.051	564.5
M5	Measurement residuals	30	499.4	78	0.000	6.402	559.4
	Independence model	18	4670.9	90	0.000	51.899	216.0
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.935	0.876	0.934	0.498	472.8	203.4
M1	Measurement weights	0.931	0.884	0.930	0.558	484.1	208.6
M2	Measurement intercepts	0.917	0.875	0.917	0.611	538.9	257.3
M3	Structural means	0.913	0.876	0.913	0.639	553.8	269.1
M4	Structural covariances	0.909	0.881	0.909	0.697	566.1	275.4
M5	Measurement residuals	0.908	0.894	0.908	0.787	560.6	260.7
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.074	0.067	0.082	0.000		
M1	Measurement weights	0.072	0.065	0.079	0.000		
M2	Measurement intercepts	0.074	0.068	0.081	0.000		
M3	Structural means	0.074	0.068	0.081	0.000		
M4	Structural covariances	0.073	0.067	0.079	0.000		
M5	Measurement residuals	0.069	0.063	0.074	0.000		
	Independence model	0.211	0.206	0.216	0.000		

The nested model comparisons in Table 7-15 further suggest that the measurement weights model was highly significant ($p=0.001$) when model M1 was compared to model M0 (M1-M0); and similarly for the rest of the model comparisons. Little *et al.* (2007) argue that the nested model comparisons almost always lead to significant chi square values, especially due to its sensitivity to sample size. As noted by Little *et al.* (2007) it can be argued that one could use the measurement invariant model when RMSEA is less than 0.08; IFI, TLI and CFI more than 0.90. As stated by Little *et al.* (2007:141) “in other words, if the measurement-invariance model fits the data at acceptable levels, questions of how well the non-invariant model fits in relation to the invariant model is, in many ways, rendered irrelevant.”

Therefore, strictly speaking the results suggest that the PDI and non-PDI groups did not necessarily perceive the constructs in a similar way and there was not sufficient

Chapter 7: Item Evaluations and Validation

measurement equivalence across the PDI/non-PDI groups based on the chi-square difference tests. However, when the overall model fit is considered, the models in which there were no constraints (configural invariance (M0)) and those with measurement weights (M1) and measurement intercepts constrained (M2), did not deteriorate to below the lower cut-off criteria proposed by Hu and Bentler (1999). For example, for the configural invariance (M0), measurement weight invariant (M1) and scalar invariant models (M2), the RMSEA remained less than 0.08, whilst the IFI and CFI remained over 0.90. The researcher therefore deemed it appropriate to conduct means comparisons across groups, using the scalar invariant model as a base, which is the only model in which valid means comparisons can be conducted (Steenkamp & Baumgartner, 1998).

Table 7-15: Nested model comparisons across PDI/non-PDI Groups for Compensation and Recognition

Models compared	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1-M0	Measurement weights	6	23.533	0.001
M2-M0	Measurement intercepts	12	90.575	0.000
M3-M0	Structural means	15	111.582	0.000
M4-M0	Structural covariances	21	136.163	0.000
M5-M0	Measurement residuals	30	149.063	0.000
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2-M1	Measurement intercepts	6	67.042	0.000
M3-M1	Structural means	9	88.050	0.000
M4-M1	Structural covariances	15	112.630	0.000
M5-M1	Measurement residuals	24	125.530	0.000
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	3	21.007	0.000
M4-M2	Structural covariances	9	45.588	0.000
M5-M2	Measurement residuals	18	58.488	0.000
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4-M3	Structural covariances	6	24.580	0.000
M5-M3	Measurement residuals	15	37.480	0.001

M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5-M4	Measurement residuals	9	12.900	0.167

7.2.5 Model-implied means and variances for Compensation and Recognition

The model-implied means and variances for gender (males/females) and for employment equity groups (PDI/non-PDI) groups were compared for each of the sub-constructs: Compensation, Benefits and Recognition, based on the intercept invariant model M2. The results are shown in Table 7-16.

Table 7-16: Model-implied means and variances for gender and employment equity groups

Factors	Means		Variances	
	MALES	FEMALES	MALES	FEMALES
Compensation	2.614	2.743	1.294	1.411
Benefits	3.216	3.210	1.305	1.393
Recognition	3.356	3.416	1.446	1.770
Factors	Means		Variances	
	PDI	non-PDI	PDI	non-PDI
Compensation	2.646	2.871	1.417	1.226
Benefits	3.091	3.450	1.391	1.317
Recognition	3.321	3.588	1.790	1.402

The model implied means indicate that males reported stronger dissatisfaction with Compensation and Recognition than the female group. The PDI group reported more dissatisfaction with Compensation, Benefits and Recognition when compared with the non-PDI group. These results should be interpreted with caution due to the reasons discussed in section 7.2.4.3 above.

7.3 PSYCHOMETRIC ANALYSIS OF MANAGEMENT SUPPORT SCALE

Respondents were asked to consider how they rated their relationship with their supervisor or direct line manager using a 6-point Likert scale. Employees were

Chapter 7: Item Evaluations and Validation

asked to rate the extent of their agreement or disagreement with nine statements using a rating scale that ranged from 1= *Strongly disagree* to 6= *Strongly Agree*.

7.3.1 Descriptive statistics for Management Support items

Table 7-17 shows descriptive statistics for the Management Support items. The means were above 4 on the 6-point scale, which indicated that the majority of respondents slightly agreed or agreed with the positively phrased manager support statements and were satisfied with the support they received and the relationship they had with their direct line manager.

Table 7-17: Descriptive statistics for Management Support items

Items		1=Strongly disagree	2=Disagree	3 = Slightly disagree	4 = Slightly agree	5 = Agree	6= Strongly agree	Total	M	SD	Skew.	Kurt.
		Disagree			Agree							
C1: I trust my direct line manager	Freq.	64	76	88	191	500	193	1112	4.41	1.360	-1.066	0.390
	%	5.8	6.8	7.9	17.2	45.0	17.4					
	%	20.5			79.5							
C2: I can communicate easily with my line manager	Freq.	44	55	75	174	495	277	1120	4.65	1.274	-1.241	1.114
	%	3.9	4.9	6.7	15.5	44.2	24.7					
	%	15.5			84.5							
C3: My line manager has my best interests at heart	Freq.	76	69	108	257	409	187	1106	4.28	1.391	-0.883	0.075
	%	6.9	6.2	9.8	23.2	37.0	16.9					
	%	22.9			77.1							
C4: Other people in our team work well with my line manager	Freq.	46	76	112	297	455	118	1104	4.26	1.235	-0.918	0.402
	%	4.2	6.9	10.1	26.9	41.2	10.7					
	%	21.2			78.8							
C5: My line manager supports my individual career development	Freq.	79	84	89	241	448	173	1114	4.27	1.404	-0.928	0.049
	%	7.1	7.5	8.0	21.6	40.2	15.5					
	%	22.6			77.4							
C6: My line manager conducts regular performance appraisals	Freq.	85	109	110	231	427	142	1104	4.12	1.441	-0.762	-0.385
	%	7.7	9.9	10.0	20.9	38.7	12.9					
	%	27.5			72.5							

Chapter 7: Item Evaluations and Validation

Items		1=Strongly disagree			4 = Slightly agree			Total	M	SD	Skew.	Kurt.
		2 =Disagree	3 = Slightly disagree	5 = Agree	6= Strongly agree							
		Disagree			Agree							
C7: My line manager conducts fair performance appraisals	Freq.	75	99	113	251	429	126	1093	4.13	1.386	-0.803	-0.206
	%	6.9	9.1	10.3	23.0	39.2	11.5	100				
	%	26.3			73.7							
C8: My line manager communicates regularly and clearly	Freq.	60	69	93	207	455	225	1109	4.45	1.358	-1.025	0.377
	%	5.4	6.2	8.4	18.7	41.0	20.3	100				
	%	20.0			80.0							
C9: My line manager gives timely and constructive feedback	Freq.	70	67	112	213	426	218	1106	4.37	1.398	-0.930	0.118
	%	6.3	6.1	10.1	19.3	38.5	19.7	100				
	%	22.5			77.5							

The skewness of the items in Table 7-17 revealed that for all the items, the data was slightly negatively skewed with a peak to the right. This indicated that more respondents selected answers that indicated agreement with the statements and thus rated their relationships with their managers generally positively. Analysis of the kurtosis figures indicated some negative values (relatively flat distribution) and some positive values indicating the height or peak of the distribution (Items C2 and C8). The two items which produced the strongest negative kurtosis scores (Items C6 and C7) were those that dealt with performance appraisals and these were the same two items that had the lowest means. The majority of respondents reported agreement (slight to strong) that they could communicate easily with their line manager (Frequency of 887 or 80% of the employees who answered that item) and this item (C8) had the highest mean.

7.3.2 Validation analysis for Management Support scale

Initially, the Management Support scale was developed as a single-factor scale and exploratory factor analysis (EFA) among the HEI sample resulted in a single factor for Management Support. However, for this sample a confirmatory factor analysis

modelling a single factor for the items C1 to C9 did not yield acceptable fit at all, even when all items with low (<0.3) squared multiple correlations were excluded.

In order to obtain a more appropriate representation of the Management Support construct, and to have an appropriate representation of its dimensionality, exploratory factor analysis was used on Split Sample 1.

7.3.2.1 KMO and Bartlett tests for Management Support items on split sample 1

In order to determine the suitability of the sample for EFA, a KMO was conducted on Split Sample 1 and a score of 0.925 was obtained while Bartlett's test of sphericity revealed a significance value of 0.000. The results on both tests met the required criteria specified in Table 7.1 which implies that the items are suitable for further factor analysis.

7.3.2.2 EFA for Management Support items on Split Sample 1

The extraction method used was principal axis factoring and the rotation method used was Promax. Although the eigenvalues reported in Table 7-18 suggested that a single factor is appropriate, the two-factor solution was conceptually more appropriate. The two factors in conjunction explained about 80% of the variance among the raw items.

Table 7-18: Total variance explained for Management Support for Split Sample 1

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings ¹
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.517	72.411	72.411	6.277	69.748	69.748	5.791
2	0.700	7.772	80.183	0.478	5.307	75.055	5.489
3	0.482	5.353	85.536				
4	0.400	4.441	89.977				
5	0.267	2.972	92.949				

Chapter 7: Item Evaluations and Validation

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings ¹
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
6	0.209	2.325	95.274				
7	0.161	1.789	97.064				
8	0.137	1.518	98.582				
9	0.128	1.418	100.000				

1: When factors are correlated, sums of squared loadings cannot be added to obtain a total variance

In the exploratory factor analysis for this sample, a two-factor pattern matrix showed that the factors could be clearly distinguishable as indicated in Table 7-19. The items showed acceptable loading, ranging between 0.564 and 0.990 and no item was deleted.

Table 7-19: Pattern matrix for Management Support

Items	Factor ¹	
	1	2
C2: I can communicate easily with my line manager	0.904	
C1: I trust my direct line manager	0.889	
C3: My line manager has my best interests at heart	0.836	
C5: My line manager supports my individual career development	0.639	
C4: Other people in our team work well with my line manager	0.578	
C6: My line manager conducts regular performance appraisals		0.990
C7: My line manager conducts fair performance appraisals		0.832
C8: My line manager communicates regularly and clearly		0.627
C9: My line manager gives timely and constructive feedback		0.564

1: Factor loadings smaller than 0.35 are not shown

Exploratory factors analysis for Split Sample1 for the Management Support items resulted in two factors, which were labelled as follows:

FC1: *Manager Support* (C1, C2, C3, C4 and C5) reflects the degree to which the employee has a positive perception of their relationship with their direct manager and perceives their manager to be supportive of them as an individual.

Chapter 7: Item Evaluations and Validation

FC2: *Appraisal and feedback* (C6, C7, C8, C9) is a factor which reflects employee perceptions of performance appraisals being conducted on a regular basis, in a fair manner and feedback being clear, regular, timely and constructive.

The factor correlation matrix in Table 7-20 shows moderate correlations between the extracted factors, and scores below 0.7 would give support for discriminant validity (Garson, 2011). The relatively high correlation could be expected due to the nature of the two factors, and based on the large first eigenvalue. This might be an indication that the scale needs to be replicated across different situations.

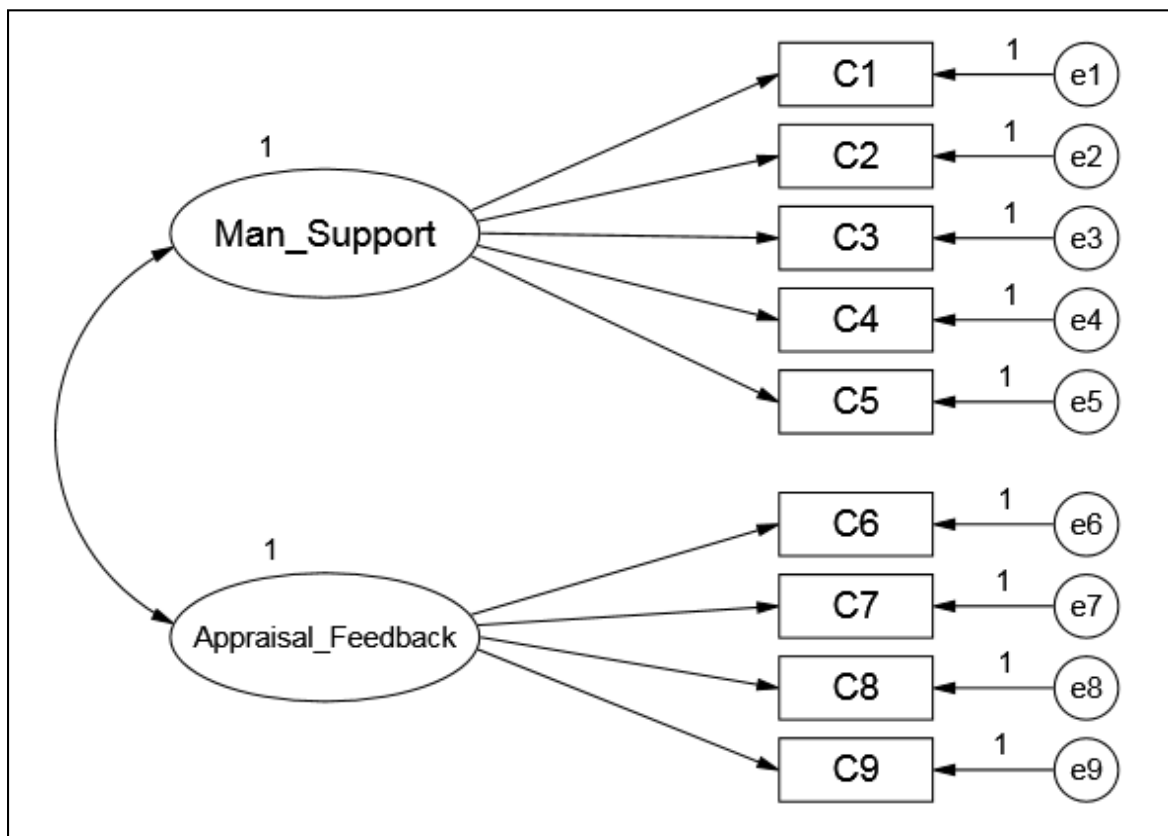
Table 7-20: Factor correlation matrix for Management Support for Split Sample1

Factor	1	2
1	1.000	0.783
2	0.783	1.000

7.3.2.3 CFA for Management support items on Split Sample 2

Based on the results of the EFA which produced a hypothesised two-factor structure, a CFA was conducted on Split Sample 2 for the *Management Support* items. The CFA was conducted on the split sample in order to investigate if the two latent variables obtained in the EFA could be replicated in the data for Split Sample 2. The two-factor model is presented in Figure 7-2.

Figure 7-2: CFA 2 Factor Model for Management Support



The measures of fit in Table 7-21 show results of the unconstrained IFI (0.916) and CFI (0.916). Adequate fit was implied. However, the TLI was at 0.854 which was lower than ideal. The RMSEA was too high (0.163) and thus the fit measures produced contradictory results and this raised concerns about the fit of the two-factor structure.

Chapter 7: Item Evaluations and Validation

Table 7-21: Measures of fit for Split Sample 2 for Management Support

CMIN	NPAR	CMIN	df	P	CMIN/df
Split Sample 2	28	420.3	26	0.000	16.167
Baseline Comparisons		IFI	TLI	CFI	
Split Sample 2	0.916	0.854	0.916		
RMSEA	RMSEA	LO 90	HI 90	PCLOSE	
Split Sample 2	0.163	0.149	0.177	0.000	

The maximum likelihood estimated standardised loadings presented in Table 7–22, can be considered ideal (see Table 7.1) and provided support for convergent validity of the Management Support scale on the two-factor model. SMC results were adequate.

Table 7-22: ML estimated regression coefficients for Management Support Split Sample 2

		Factor	Estimate¹	S.E.	C.R.	P	Std. Estimates	Error variances	SMC
C1	<--	Man_Support	1.132	0.047	24.07	***	0.836	0.551	0.699
C2	<---	Man_Support	1.091	0.043	25.20	***	0.860	0.421	0.739
C3	<---	Man_Support	1.259	0.046	27.53	***	0.908	0.337	0.825
C4	<---	Man_Support	0.933	0.046	20.21	***	0.746	0.695	0.556
C5	<---	Man_Support	1.216	0.048	25.09	***	0.858	0.528	0.737
C6	<---	Appraisal_Feedback	1.177	0.054	21.86	***	0.787	0.854	0.619
C7	<---	Appraisal_Feedback	1.183	0.05	23.62	***	0.829	0.639	0.686
C8	<---	Appraisal_Feedback	1.247	0.045	27.98	***	0.916	0.297	0.840
C9	<---	Appraisal_Feedback	1.305	0.047	27.95	***	0.917	0.323	0.840

1: In the CFA model, the means and variances of the latent variables were constrained equal to 0 and 1 respectively for the purpose of model identification (Bollen, 1989)

The estimated correlations between the two latent variables are displayed in Table 7-23. The correlation was 0.889 which indicated that discriminant validity might not be clearly established between the sub-constructs, although there were conceptual differences between the constructs (Garson, 2011).

Table 7-23: Estimated correlations for Management Support - Split Sample 2

Correlations		Estimate
Appraisal_Feedback	<--> Man_Support	0.889

7.3.3 Reliability statistics for Management Support items

Internal consistency reliability was assessed by means of Cronbach's coefficient alpha. Following the EFA in Split Sample 1, and the CFA in Split Sample 2, Cronbach's coefficient alpha was calculated for each of the two factors identified and is reported in Table 7-24. The Cronbach's alpha ratings for the two factors across the entire sample were 0.925 for *Manager Support* and 0.928 for *Appraisal and Feedback* and could be regarded as good (Field, 2009:681). The results in Table 7-24 suggested sufficient internal consistency between the items indicating each latent variable.

Table 7-24: Cronbach's coefficient alpha for Management Support

Construct	Items	Split sample 1	Split sample 2	Entire sample
Manager support	C1, C2, C3, C4, C5	0.925	0.926	0.925
Appraisal and Feedback	C6, C7, C8, C9	0.931	0.925	0.928

7.3.4 Invariance testing for Management Support items

Invariance testing is an additional approach to cross-validation. Invariance testing is a strategy that tests whether a structural equation model identified in one sample can be replicated over a second independent sample from the same population (Byrne, 2010:259). Three sets of invariance testing were conducted for the Management Support items using the split samples group, a male/female group and a PDI/non-PDI group. There might be gender or ethnic differences in how the item content was perceived by different groups and it was important to consider the measurement equivalence of the proposed scale.

7.3.4.1 Invariance testing over Sample Split 1 and Sample Split 2

Using the SPSS AMOS 22 multiple-group (MG) procedure for the invariance testing, the five increasingly restrictive models discussed in section 7.2.4 were developed and fitted on Split Sample 1 and Split Sample 2. Invariance testing could help to determine if the split samples could be assumed to be random and would thus provide support for using EFA on the one sample to obtain a factor solution, and then in the second sample to test if the model found in Split Sample 1 was replicated in Split Sample 2. The results are displayed in Table 7-25.

Table 7-25: Invariance testing for Management Support across Split Samples

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	56	750.2	52	0.000	14.427	860.3
M1	Measurement weights	49	760.4	59	0.000	12.888	856.6
M2	Measurement intercepts	42	770.6	66	0.000	11.676	852.9
M3	Structural means	40	770.9	68	0.000	11.337	849.1
M4	Structural covariances	38	771.9	70	0.000	11.027	845.9
M5	Measurement residuals	29	810.9	79	0.000	10.265	866.9
	Saturated model	108	0.0	0			216.0
	Independence model	18	9569.2	90	0.000	106.325	9605.2
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.927	0.873	0.926	0.535	864.2	591.1
M1	Measurement weights	0.926	0.887	0.926	0.607	860.1	579.8
M2	Measurement intercepts	0.926	0.899	0.926	0.679	856.1	568.7
M3	Structural means	0.926	0.902	0.926	0.700	852.3	562.8
M4	Structural covariances	0.926	0.905	0.926	0.720	849.2	557.7
M5	Measurement residuals	0.923	0.912	0.923	0.810	869.9	569.2
	Saturated model	1.000		1.000	0.000	219.8	0.0
	Independence model	0.000	0.000	0.000	0.000	9605.9	9293.8
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.108	0.101	0.115	0.000		
M1	Measurement weights	0.102	0.095	0.108	0.000		
M2	Measurement intercepts	0.097	0.090	0.103	0.000		
M3	Structural means	0.095	0.089	0.101	0.000		
M4	Structural covariances	0.094	0.088	0.100	0.000		
M5	Measurement residuals	0.090	0.084	0.096	0.000		
	Independence model	0.303	0.298	0.308	0.000		

Results from the invariance testing in Table 7-25 measured against the criteria in Table 7.1 indicated the IFI (0.926), TLI (0.900) and CFI (0.926) fit measures at the

Chapter 7: Item Evaluations and Validation

measurement intercept level were acceptable. The RMSEA was 0.097 which implied a less than ideal fit. The nested model comparisons in Table 7-26 provided the chi-square difference test (or the likelihood ratio test) against a reference model. The reference model is shown in bold in the table, in the shaded headings.

Table 7-26: Nested model comparisons for Split Sample 1 and Split Sample 2

Model	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1 –M0	Measurement weights	7	10.309	0.172
M2 –M0	Measurement intercepts	14	20.571	0.113
M3–M0	Structural means	16	20.823	0.185
M4–M0	Structural covariances	18	21.569	0.252
M5–M0	Measurement residuals	27	60.6	0.000
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	7	10.262	0.174
M3–M1	Structural means	9	10.514	0.310
M4–M1	Structural covariances	11	11.260	0.422
M5 –M1	Measurement residuals	20	50.291	0.000
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	2	0.253	0.881
M4–M2	Structural covariances	4	0.998	0.910
M5-M2	Measurement residuals	13	40.03	0.000
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	2	0.746	0.689
M5–M3	Measurement residuals	11	39.777	0.000
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	9	39.032	0.000

Results from the nested model comparisons revealed no significant differences between the two groups at the measurement intercepts level and indicated that the factor structure revealed adequate to marginal fit and the proposed factor structure from Split Sample 1 replicated in Split Sample 2.

7.3.4.2 Invariance testing across gender groups for management support

Invariance testing was conducted across the male and female groups in order to determine if they perceived the constructs in an equivalent way and the findings are reported in Table 7-27 while the nested model comparisons are reported in Table 7-28.

Table 7-27: Invariance testing for Management Support items across gender groups

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	56	739.9	52	0	14.229	851.9
M1	Measurement weights	49	747.0	59	0	12.660	845.0
M2	Measurement intercepts	42	763.9	66	0	11.574	847.9
M3	Structural means	40	769.1	68	0	11.310	849.1
M4	Structural covariances	38	769.3	70	0	10.990	845.3
M5	Measurement residuals	29	811.1	79	0	10.267	869.1
	Saturated model	108	0.0	0			216.0
	Independence model	18	9376.3	90	0	104.181	9412.3
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.926	0.872	0.926	0.535	854.6	581.4
M1	Measurement weights	0.926	0.887	0.926	0.607	847.3	567.1
M2	Measurement intercepts	0.925	0.898	0.925	0.678	849.9	562.7
M3	Structural means	0.925	0.900	0.925	0.699	851.0	561.8
M4	Structural covariances	0.925	0.903	0.925	0.719	847.2	555.9
M5	Measurement residuals	0.921	0.910	0.921	0.809	870.5	570.2
	Saturated model	1.000		1.000	0.000	221.3	0.0
	Independence model	0.000	0.000	0.000	0.000	9413.2	9102.0
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.109	0.102	0.116	0.000		
M1	Measurement weights	0.102	0.096	0.109	0.000		
M2	Measurement intercepts	0.097	0.091	0.104	0.000		
M3	Structural means	0.096	0.090	0.102	0.000		
M4	Structural covariances	0.095	0.089	0.101	0.000		
M5	Measurement residuals	0.091	0.085	0.097	0.000		
	Independence model	0.304	0.299	0.309	0.000		

Results from the model fit summary in Table 7-27 indicated the IFI (0.925) and CFI (0.925) fit measures were above 0.92 which suggest that the model has an

acceptable fit. However, TLI (0.898) was slightly below the cut-off of 0.90 and the RMSEA was 0.097 which was slightly higher than 0.08.

The nested model comparisons indicated in Table 7-28, showed that when the model with intercepts constrained (M2) was compared to a model in which there were no constraints (M2-M0), the result was significant ($p=0.046$), and when the same model M2, was compared to the model in which the measurement weights were also constrained, (M2-M1) the likelihood ratio test was again significant ($p=0.018$). Therefore, it seems reasonable to conclude that measurement invariance is not strongly supported across gender groups. It seems that males and females assign different connotations to the items pertaining to Management Support.

Table 7-28: Nested model comparisons across gender groups for Management Support

Model	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1 –M0	Measurement weights	7	7.063	0.422
M2 –M0	Measurement intercepts	14	24.013	0.046
M3–M0	Structural means	16	29.210	0.023
M4–M0	Structural covariances	18	29.410	0.044
M5–M0	Measurement residuals	27	71.180	0.000
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	7	16.950	0.018
M3–M1	Structural means	9	22.147	0.008
M4–M1	Structural covariances	11	22.348	0.022
M5 –M1	Measurement residuals	20	64.118	0.000
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	2	5.197	0.074
M4–M2	Structural covariances	4	5.398	0.249
M5-M2	Measurement residuals	13	47.168	0.000
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	2	0.200	0.905
M5–M3	Measurement residuals	11	41.970	0.000
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	9	41.770	0.000

7.3.4.3 Invariance testing over PDI/non-PDI groups for Management Support

Invariance testing was also conducted across the clustered employment equity groups (PDI/non-PDI) in order to determine if they perceived the constructs in an equivalent way. Findings of the invariance testing are reported in Table 7-29 while the nested model comparisons are reported in Table 7-30.

Table 7-29: Invariance testing across PDI/non-PDI groups for Management Support

Model	CMIN	NPART	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	56	733.5	52	0.000	14.107	845.5
M1	Measurement weights	49	745.9	59	0.000	12.642	843.9
M2	Measurement intercepts	42	781.1	66	0.000	11.835	865.1
M3	Structural means	40	783.8	68	0.000	11.527	863.8
M4	Structural covariances	38	787.0	70	0.000	11.243	863.0
M5	Measurement residuals	29	845.5	79	0.000	10.702	903.5
	Saturated model	108	0.0	0			216.0
	Independence model	18	9554.7	90	0.000	106.164	9590.7
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.928	0.875	0.928	0.536	847.9	574.4
M1	Measurement weights	0.928	0.889	0.927	0.608	845.9	565.3
M2	Measurement intercepts	0.925	0.897	0.924	0.678	866.9	579.1
M3	Structural means	0.925	0.900	0.924	0.698	865.5	575.7
M4	Structural covariances	0.924	0.903	0.924	0.719	864.6	572.8
M5	Measurement residuals	0.919	0.908	0.919	0.807	904.7	603.7
	Saturated model	1.000		1.000	0.000	220.5	0.0
	Independence model	0.000	0.000	0.000	0.000	9591.5	9279.3
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.107	0.100	0.114	0.000		
M1	Measurement weights	0.101	0.094	0.107	0.000		
M2	Measurement intercepts	0.097	0.091	0.103	0.000		
M3	Structural means	0.096	0.090	0.102	0.000		
M4	Structural covariances	0.095	0.089	0.101	0.000		
M5	Measurement residuals	0.092	0.086	0.098	0.000		
	Independence model	0.303	0.298	0.308	0.000		

Results from the model fit summary in Table 7-29, considering the measurement intercepts model, indicated that the IFI (0.925) and CFI (0.924) fit measures were adequate. However, the TLI (0.897) was marginally below the guidelines of 0.9 (Hair *et al.*, 2010:654). The RMSEA was 0.097 which was less than ideal.

From the nested model comparisons provided in Table 7-30 at the measurement intercepts level, it appeared that there were significant differences between the PDI and non-PDI groups for Management Support and the model could thus not be described as being equivalent across PDI and non-PDI groups in terms of scalar equivalence. However, following the same argument as in section 7.2.4.3, the researchers still used model M2 for means comparisons, although the results need to be treated with caution, and in further developments of the scale, the invariance of the specific items require further refinements.

Table 7-30 : Nested model comparison across PDI and non-PDI groups for Management Support

Model	Assuming model Unconstrained to be correct:	df	CMIN	P
M1–M0	Measurement weights	7	12.313	0.091
M2–M0	Measurement intercepts	14	47.549	0.000
M3–M0	Structural means	16	50.270	0.000
M4–M0	Structural covariances	18	53.472	0.000
M5–M0	Measurement residuals	27	111.934	0.000
M1	Assuming model Measurement weights to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	7	35.236	0.000
M3–M1	Structural means	9	37.957	0.000
M4–M1	Structural covariances	11	41.159	0.000
M5–M1	Measurement residuals	20	99.621	0.000
M2	Assuming model Measurement intercepts to be correct:	df	CMIN	P
M3–M2	Structural means	2	2.721	0.257
M4–M2	Structural covariances	4	5.923	0.205
M5–M2	Measurement residuals	13	64.385	0.000
M3	Assuming model Structural means to be correct:	df	CMIN	P
M4–M3	Structural covariances	2	3.202	0.202
M5–M3	Measurement residuals	11	61.664	0.000
M4	Assuming model Structural covariances to be correct:	df	CMIN	P
M5–M4	Measurement residuals	9	58.462	0.000

7.3.5 Model-implied means and variances for Management Support

The means and variances for males and females, PDI group and non-PDI group, based on the scalar equivalent model M2 for the two-factor structure for Management Support are summarised in Table 7-31:

Table 7-31: Model-implied means and variances for Management Support

Factors	Means		Variances	
	MALES	FEMALES	MALES	FEMALES
Manager support	4.411	4.390	1.419	1.417
Appraisal and Feedback	4.041	4.131	1.468	1.410

Factors	Means		Variances	
	PDI	non-PDI	PDI	non-PDI
Manager support	4.364	4.483	1.457	1.235
Appraisal and Feedback	4.085	4.162	1.516	1.241

Means for both *Manager Support* and *Appraisal and Feedback* were greater than 4 which implied agreement with the statements in the items, such as *I can trust my manager*. These items were greater than 4 for males and females, PDI groups and non-PDI groups. The results were similar for males and females, PDI and non-PDI groups. These results are to be interpreted with caution based on the reasons discussed in section 7.3.4.3 which imply that the PDI and non-PDI groups may not have interpreted the items in the same way.

7.4 PSYCHOMETRIC ANALYSIS OF SATISFACTION WITH INSTITUTIONAL PRACTICES SCALE

Items in the proposed Institutional Practices scale are discussed descriptively, followed by validation analysis (EFA and CFA), reliability statistics and invariance testing.

7.4.1 Descriptive statistics for items measuring Institutional Practices

Employees were asked to rate the extent of their satisfaction or dissatisfaction with 14 statements about the institution they were working at. The rating scale is a 4-point Likert scale ranging from 1= Extremely Dissatisfied to 4= Extremely Satisfied.

Chapter 7: Item Evaluations and Validation

In Table 7-32 it becomes apparent that the means ranged between 2 (Dissatisfied) and 3 (Satisfied) on the 4-point scale. The item with the highest mean (closest to satisfied) was *sufficient respect for my culture in the institution* (2.97). The two items with the lowest means (closest to dissatisfied) were *changes and restructuring in the institution* (2.47) and *funding from the institution to attend conferences* (2.48). The frequency distribution was slightly more helpful than the mean in understanding the data. Skewness in the items revealed a peak to the right of the mean or negatively skewed distribution (Field, 2009) which indicated that more respondents selected answers that reflect agreement with the statements and were thus expressing satisfaction with these factors. Analysis of the kurtosis figures revealed some negative values indicating a flatter distribution (F2, F3, F5, F12) and some positive values (F7) indicating a peaked distribution (Hair *et al.*, 2010:35).

Table 7-32: Descriptive statistics for Institutional Practices items

Items		1= Extremely Dissatisfied	2= Dissatisfied	3= Satisfied	4= Extremely satisfied	Total	M	SD	Skew.	Kurt.
		Dissatisfied		Satisfied						
F1: Sufficient access to information I need to do my job	Freq.	68	193	672	152	1085	2.84	0.737	-0.676	0.608
	%	6.3	17.8	61.9	14.0	100.0				
	%	24.1		75.9						
F2: Support from the HR department	Freq.	119	319	529	92	1059	2.56	0.803	-0.347	-0.379
	%	11.2	30.1	50.0	8.7	100.0				
	%	41.4		58.6						
F3: Changes and restructuring in the institution	Freq.	121	351	518	46	1036	2.47	0.756	-0.408	-0.407
	%	11.7	33.9	50.0	4.4	100.0				
	%	45.6		54.4						
F4: Opportunity to engage in community service projects	Freq.	88	300	564	78	1030	2.61	0.748	-0.462	-0.079
	%	8.5	29.1	54.8	7.6	100.0				
	%	37.7		62.3						
F5: Affirmative action	Freq.	106	270	553	88	1017	2.61	0.787	-0.484	-0.188
	%	10.4	26.5	54.4	8.7	100.0				
	%	37.0		63.0						

Chapter 7: Item Evaluations and Validation

Items		1= Extremely Dissatisfied	2= Dissatisfied	3= Satisfied	4= Extremely satisfied	Total	M	SD	Skew.	Kurt.
		Dissatisfied		Satisfied						
F6: Sufficient cultural diversity in the institution	Freq.	60	200	648	142	1050	2.83	0.725	-0.631	0.577
	%	5.7	19.0	61.7	13.5	100.0				
	%	24.8		75.2						
F7: Sufficient respect for my culture in the institution	Freq.	49	135	670	200	1054	2.97	0.709	-0.739	1.068
	%	4.6	12.8	63.6	19.0	100.0				
	%	17.5		82.5						
F8: Institutional leadership	Freq.	83	222	631	117	1053	2.74	0.756	-0.632	0.293
	%	7.9	21.1	59.9	11.1	100.0				
	%	29.0		71.0						
F9: Institutional values	Freq.	53	228	658	110	1049	2.79	0.692	-0.606	0.615
	%	5.1	21.7	62.7	10.5	100.0				
	%	26.8		73.2						
F10: Institutional strategy	Freq.	68	259	618	94	1039	2.71	0.720	-0.560	0.284
	%	6.5	24.9	59.5	9.0	100.0				
	%	31.5		68.5						
F11: Communication from leadership	Freq.	105	216	589	160	1070	2.75	0.826	-0.557	-0.087
	%	9.8	20.2	55.0	15.0	100.0				
	%	30.0		70.0						
F12: Talent management policies in the institution	Freq.	107	293	549	86	1035	2.59	0.784	-0.437	-0.236
	%	10.3	28.3	53.0	8.3	100.0				
	%	38.6		61.4						
F13: Mentorship opportunities for academic staff	Freq.	107	295	565	88	1055	2.60	0.781	-0.451	-0.207
	%	10.1	28.0	53.6	8.3	100.0				
	%	38.1		61.9						
F14: Funding to attend conferences from the institution	Freq.	172	316	459	111	1058	2.48	0.886	-0.192	-0.743
	%	16.3	29.9	43.4	10.5	100.0				
	%	46.1		53.9						

7.4.2 Validation analysis for Institutional Practices scale

In the HEI sample, exploratory factor analysis (EFA) for the *Institutional Practices* scale resulted in three factors for Institutional Practices. However, for this sample a confirmatory factor analysis modelling three factors for the items F1 to F14 did not yield acceptable fit statistics. Using the split sample methodology an EFA was conducted on one half of the sample, and based on these result a CFA was conducted on the other half of the sample.

7.4.2.1 KMO and Bartlett's for Institutional Practices items on Split Sample 1

The KMO produced a result of 0.937 which meets the criteria for sampling adequacy. Bartlett's results indicate a significance value of 0.000 which implied that the items were suitable for further factor analysis.

7.4.2.2 EFA for Institutional Practices items on Split Sample 1

The extraction method was principal axis factoring and the rotation method was Promax with Kaiser normalisation. Considering the generally accepted principle of the mineigen criterion, two factors should usually be sufficient. However, the two factor structure did not produce an acceptable factor pattern. Therefore, a three, four and five factor solution was examined. The four factor solution made best sense conceptually and provided a fairly clean rotated factor pattern, without too many cross-loadings on items. The four factors together explained 72% of the total variance among the raw items as indicated in Table 7-33.

Table 7-33: Total variance explained for Institutional Practices– Split Sample 1

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.370	52.641	52.641	7.008	50.058	50.058	6.079
2	1.115	7.961	60.602	0.754	5.382	55.440	5.552
3	0.955	6.822	67.424	0.546	3.897	59.337	5.497

Chapter 7: Item Evaluations and Validation

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
4	0.655	4.679	72.103	0.278	1.983	61.320	4.067
5	0.632	4.514	76.616				
6	0.547	3.908	80.524				
7	0.489	3.490	84.014				
8	0.455	3.246	87.261				
9	0.450	3.211	90.472				
10	0.375	2.681	93.154				
11	0.301	2.152	95.305				
12	0.259	1.849	97.154				
13	0.211	1.510	98.664				
14	0.187	1.336	100.000				

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

The items all had sufficient loadings ranging between 0.902 and 0.405, with one cross-loading for F11 (*communication from leadership*). This pattern suggested acceptable convergent validity of the items to the specific factors. Exploratory factor analysis for this sample produced a four-factor pattern matrix which is shown in Table 7-34.

Table 7-34: Pattern matrix for Institutional Practices

Items	Factor ¹			
	1	2	3	4
F8: Institutional leadership	0.902			
F10: Institutional strategy	0.835			
F9: Institutional values	0.750			
F11: Communication from leadership	0.497		0.435	
F2: Support from the HR department		0.752		
F3: Changes and restructuring in the institution		0.643		
F5: Affirmative action		0.601		
F4: Opportunity to engage in community service projects		0.558		
F1: Sufficient access to information I need to do my job		0.475		
F13: Mentorship opportunities for academic staff			0.805	

Chapter 7: Item Evaluations and Validation

Items	Factor ¹			
	1	2	3	4
F12: Talent management policies in the institution			0.570	
F14: Funding to attend conferences from the institution			0.405	
F6: Sufficient cultural diversity in the institution				0.866
F7: Sufficient respect for my culture in the institution				0.653

1: Factor loadings smaller than 0.35 are not shown

The resulting four factors were labelled as follows:

- *Institutional Leadership* (F8, F10, F9, F11) includes leadership, strategy, values and communication from leadership.
- *HR Practices* (F2, F3, F4, F5, F1) includes support from HR department, changes and restructuring, affirmative action, opportunity to engage in customer service projects, sufficient access to information.
- *Talent Development* (F13, F12, F14) includes mentorship opportunities, talent management practices, funding to attend conferences.
- *Diversity and Respect* (F6, F7) includes satisfaction with sufficient cultural diversity and sufficient respect for my culture.

The factor correlation matrix is presented in Table 7-35 and the correlations between the extracted factors ranged between 0.504 and 0.771 and scores below 0.7 would give support for discriminant validity. The relatively high correlation could be expected due to the nature of the two factors, and based on the large first eigenvalue. This may be an indication that the scale needs to be replicated across different situations.

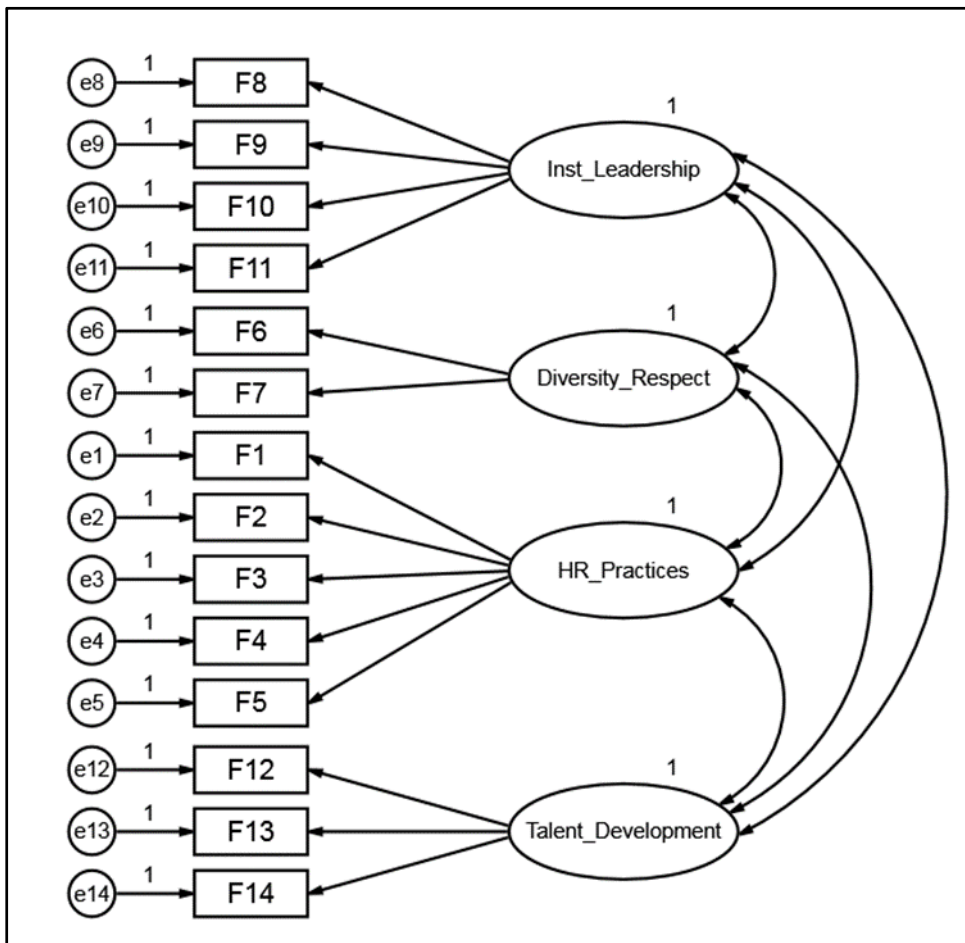
Table 7-35: Factor correlation matrix for Institutional Practices – Split Sample 1

Factor	1	2	3	4
1	1.000	0.695	0.771	0.597
2	0.695	1.000	0.704	0.630
3	0.771	0.704	1.000	0.504
4	0.597	0.630	0.504	1.000

7.4.2.3 CFA for Institutional Practices items on Split Sample 2

Based on the results of the EFA which produced a hypothesised four-factor structure, a CFA was conducted on Split Sample 2 for the *Institutional Practices* scale items. The CFA was used to explore whether the four-factor structure obtained in the EFA analysis could be replicated for the data in Split Sample 2. The model fitted in the CFA analysis for the *Institutional Practices* items is presented in Figure 7-3. The measures of fit reported in Table 7-36 indicated that the baseline comparisons for the default model for IFI (0.957); and CFI (0.956) were above 0.95 which implied an ideal fit of the factors for the model while TLI (0.935) was above 0.93 which implied a good fit of the model. The RMSEA for the default model was 0.067 which met the criteria (see Table 7.1).

Figure 7-3: CFA four-factor model for Institutional Practices



Chapter 7: Item Evaluations and Validation

Table 7-36: Measures of fit for Institutional Practices for Split Sample 2

Model	NPAR	CMIN	df	P	CMIN/df
Default model	48	252.954	71	0	3.563
Baseline Comparisons	IFI	TLI	CFI		
Default model	0.957	0.935	0.956		
RMSEA	RMSEA	LO 90	HI 90	PCLOSE	
Default model	0.067	0.058	0.076	0.001	

The maximum likelihood estimated standardised loadings are shown in Table 7-37 and ranging between 0.614 and 0.892 were all above 0.6 as recommended by Hair *et al.* (2010:673). The results on the standardised loading estimates lent support to the convergent validity of the *Institutional Practices* items.

Table 7-37: ML estimated regression coefficients for Institutional Practices– Split Sample 2

Item	Factor	Estimate ¹	S.E.	C.R.	P	Std Est.	Error variances	SMC
F8	<--- Inst_Leadership	0.645	0.027	24.030	***	0.850	0.159	0.723
F9	<--- Inst_Leadership	0.617	0.025	25.000	***	0.872	0.120	0.760
F10	<--- Inst_Leadership	0.646	0.025	25.895	***	0.892	0.108	0.795
F11	<--- Inst_Leadership	0.672	0.030	22.279	***	0.808	0.240	0.653
F6	<--- Diversity_Respect	0.602	0.032	19.014	***	0.806	0.195	0.650
F7	<--- Diversity_Respect	0.528	0.030	17.746	***	0.754	0.211	0.569
F1	<--- HR_Practices	0.481	0.029	16.378	***	0.666	0.290	0.444
F2	<--- HR_Practices	0.541	0.033	16.421	***	0.673	0.354	0.452
F3	<--- HR_Practices	0.524	0.031	16.696	***	0.683	0.314	0.467
F4	<--- HR_Practices	0.466	0.030	15.368	***	0.641	0.311	0.411
F5	<--- HR_Practices	0.487	0.034	14.434	***	0.614	0.391	0.377
F12	<--- Talent_Development	0.709	0.028	25.382	***	0.897	0.122	0.805
F13	<--- Talent_Development	0.650	0.029	22.577	***	0.828	0.194	0.686
F14	<--- Talent_Development	0.571	0.036	15.855	***	0.642	0.464	0.412

1: In the CFA model, the means and variances of the latent variables were constrained equal to 0 and 1 respectively for the purpose of model identification (Bollen, 1989)

The estimated correlations between the latent variables are shown in Table 7-38. The highest correlation was between *Institutional Leadership* and *Talent Development* (0.823). The high correlations between the various variables indicated

that discriminant validity might not be clearly established between the sub-constructs although there might be conceptual differences between the constructs.

Table 7-38: Correlations for Institutional Practices - Split Sample 2

Correlations			Estimate
Diversity_Respect	<-->	HR_Practices	0.730
HR_Practices	<-->	Talent_Development	0.815
Inst_Leadership	<-->	Talent_Development	0.823
Inst_Leadership	<-->	HR_Practices	0.785
Diversity_Respect	<-->	Talent_Development	0.561
Inst_Leadership	<-->	Diversity_Respect	0.676

7.4.3 Reliability statistics for Institutional Practices items

Internal consistency reliability was assessed using Cronbach's coefficient alpha and the results for Split Sample 1, Split Sample 2 and the entire sample were all above the 0.7 guideline for acceptability recommended by Hair *et al.* (2010:125) for all four constructs. The results displayed in Table 7-39 suggested sufficient internal consistency between the items indicating each latent variable.

Table 7-39: Cronbach's coefficient alpha for Institutional Practices

Construct	Items	Split sample 1	Split sample 2	Entire sample
Institutional Leadership	F8, F9, F10, F11	0.900	0.911	0.906
Diversity and Respect	F6, F7	0.776	0.751	0.764
HR Practices	F1, F2, F3, F4, F5	0.810	0.791	0.801
Talent Development	F12, F13, F14	0.802	0.823	0.813

7.4.4 Invariance testing for Institutional Practices items

Three sets of invariance were conducted for the Institutional Practices scale items using the split samples group, a male/female group and a PDI/non-PDI group.

7.4.4.1 Invariance testing over Split Sample 1 and Split Sample 2

For Split Sample 1 and Split Sample 2 for the *Institutional Practices* scale, invariance testing was done using the SPSS AMOS 22 MG procedure. The five increasingly restrictive models are described in section 7.1 and were numbered M0 to M5. The reason for assessing the measurement invariance over the split samples was that it would provide evidence that the sample splits were random, and therefore provide support for using EFA on the one sample to obtain a factor solution, and then in the second step to test whether the obtained factor solution replicated in the second sample. The results are displayed in Table 7-40.

Table 7-40: Invariance testing for Institutional Practices across Split Sample 1 and Split Sample 2

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	96	490.8	142	0.000	3.456	682.8
M1	Measurement weights	86	499.4	152	0.000	3.286	671.4
M2	Measurement intercepts	76	508.5	162	0.000	3.139	660.5
M3	Structural means	72	512.3	166	0.000	3.086	656.3
M4	Structural covariances	62	522.4	176	0.000	2.968	646.4
M5	Measurement residuals	48	540.9	190	0.000	2.847	636.9
	Saturated model	238	0.0	0			476.0
	Independence model	28	8395.9	210	0.000	39.980	8451.9
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.958	0.937	0.957	0.647	688.0	56.3
M1	Measurement weights	0.958	0.941	0.958	0.693	676.0	34.3
M2	Measurement intercepts	0.958	0.945	0.958	0.739	664.6	12.8
M3	Structural means	0.958	0.946	0.958	0.757	660.2	4.4
M4	Structural covariances	0.958	0.950	0.958	0.803	649.7	-16.2
M5	Measurement residuals	0.957	0.953	0.957	0.866	639.4	-40.5
	Saturated model	1.000	1.000	1.000	0.000	488.8	0.0
	Independence model	0.000	0.000	0.000	0.000	8453.4	7753.3
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.046	0.042	0.051	0.911		
M1	Measurement weights	0.045	0.040	0.049	0.978		
M2	Measurement intercepts	0.043	0.039	0.047	0.996		
M3	Structural means	0.043	0.038	0.047	0.998		
M4	Structural covariances	0.041	0.037	0.046	1.000		
M5	Measurement residuals	0.040	0.036	0.044	1.000		
	Independence model	0.184	0.181	0.188	0.000		

Chapter 7: Item Evaluations and Validation

The invariance testing results shown in Table 7-40 considered the fit measures for the measurement intercepts model which was the minimum required for equivalence in order to have valid mean comparisons (Steenkamp & Baumgartner, 1998). CFI and IFI results were above the ideal 0.95 for very good fit; TLI results ranged between 0.93 and 0.95 which was good fit (Byrne, 2010:78-79). RMSEA results were 0.043 for the intercepts model which was very good as it fell well below the 0.05 recommended as good fit by Vandenberg and Lance (2000:44). Nested comparisons of the models as shown in Table 7-41 indicated no significant difference between the groups for the measurement intercepts model.

Table 7-41: Nested model comparisons for Split Sample 1 and Split Sample 2 for Institutional Practices

Model	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1 –M0	Measurement weights	10	8.594	0.571
M2 --M0	Measurement intercepts	20	17.685	0.608
M3--M0	Structural means	24	21.535	0.607
M4–M0	Structural covariances	34	31.559	0.588
M5–M0	Measurement residuals	48	50.053	0.392
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	10	9.092	0.523
M3--M1	Structural means	14	12.942	0.531
M4–M1	Structural covariances	24	22.965	0.522
M5 –M1	Measurement residuals	38	41.459	0.322
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	4	3.850	0.427
M4–M2	Structural covariances	14	13.873	0.459
M5-M2	Measurement residuals	28	32.367	0.260
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	10	10.023	0.438
M5–M3	Measurement residuals	24	28.517	0.239
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	14	18.494	0.185

Thus considering the measurement intercepts model the *Institutional Practices* factor structure fitted well and the proposed factor structure from Split Sample 1 replicated in Split Sample 2.

7.4.4.2 Invariance testing across gender groups for Institutional Practices

Invariance testing was also conducted across gender groups in order to determine if there were differences in how the item content was perceived by males and females. The fit measures in Table 7-42 show that considering the measurement intercepts model, IFI (0.954) and CFI (0.954) were above the ideal 0.95 level for good fit while TLI (0.940) was above the recommended level of 0.93 for good fit (Byrne, 2010:78-79). RMSEA results of 0.045 for the measurement intercepts model were good (Vandenberg & Lance, 2000:44).

Table 7-42: Invariance testing across gender groups for Institutional Practices

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	96	508.2	142	0.000	3.579	700.2
M1	Measurement weights	86	518.3	152	0.000	3.410	690.3
M2	Measurement intercepts	76	533.8	162	0.000	3.295	685.8
M3	Structural means	72	538.3	166	0.000	3.243	682.3
M4	Structural covariances	62	559.5	176	0.000	3.179	683.5
M5	Measurement residuals	48	608.0	190	0.000	3.200	704.0
	Saturated model	238	0.0	0			476.0
	Independence model	28	8258.7	210	0.000	39.327	8314.7
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.955	0.933	0.955	0.645	707.3	75.3
M1	Measurement weights	0.955	0.937	0.954	0.691	696.6	55.0
M2	Measurement intercepts	0.954	0.940	0.954	0.736	691.4	40.0
M3	Structural means	0.954	0.941	0.954	0.754	687.5	32.2
M4	Structural covariances	0.953	0.943	0.952	0.798	688.1	23.0
M5	Measurement residuals	0.948	0.943	0.948	0.858	707.5	28.8
	Saturated model	1.000		1.000	0.000	493.5	0.0
	Independence model	0.000	0.000	0.000	0.000	8316.8	7618.6
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.048	0.044	0.053	0.752		
M1	Measurement weights	0.046	0.042	0.051	0.904		
M2	Measurement intercepts	0.045	0.041	0.050	0.963		
M3	Structural means	0.045	0.041	0.049	0.978		
M4	Structural covariances	0.044	0.040	0.048	0.990		
M5	Measurement residuals	0.044	0.040	0.048	0.990		
	Independence model	0.185	0.182	0.189	0.000		

The nested model comparisons across gender groups are displayed in Table 7-43 and the likelihood ratio tests were compared to a reference model (shown in the shaded row of the table). Nested comparison of the models indicate that it was not unrealistic to accept the measurement intercepts model as there was no significant difference between groups.

Table 7-43: Nested model comparisons across gender groups for Institutional Practices

Model	Assuming model Unconstrained to be correct:	df	CMIN	P
M1 –M0	Measurement weights	10	10.1	0.430
M2 –M0	Measurement intercepts	20	25.6	0.180
M3–M0	Structural means	24	30.1	0.183
M4–M0	Structural covariances	34	51.3	0.029
M5–M0	Measurement residuals	48	99.7	0.000
M1	Assuming model Measurement weights to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	10	15.476	0.116
M3–M1	Structural means	14	19.933	0.132
M4–M1	Structural covariances	24	41.207	0.016
M5 –M1	Measurement residuals	38	89.626	0.000
M2	Assuming model Measurement intercepts to be correct:	df	CMIN	P
M3-M2	Structural means	4	4.457	0.348
M4–M2	Structural covariances	14	25.731	0.028
M5-M2	Measurement residuals	28	74.15	0.000
M3	Assuming model Structural means to be correct:	df	CMIN	P
M4–M3	Structural covariances	10	21.274	0.019
M5–M3	Measurement residuals	24	69.693	0.000
M4	Assuming model Structural covariances to be correct:	df	CMIN	P
M5–M4	Measurement residuals	14	48.419	0.000

The invariance testing across gender revealed adequate fit for the measurement intercepts model M2, which is a minimum requirement for valid cross-group comparisons (Vandenberg & Lance, 2000). Results thus indicated that males and females perceived the questions/items in a similar way and there was acceptable equivalence across gender groups for the institutional factors.

7.4.4.3 Invariance testing across PDI/non-PDI groups for Institutional Practices

Invariance testing was conducted across the clustered employment equity groups in order to determine whether there was measurement equivalence when different

Chapter 7: Item Evaluations and Validation

cultural groups or ethnic groups completed the scale in a South African working environment. The results of the invariance testing across PDI and non-PDI groups for the *Institutional Practices* scale are reported in Table 7-44. The baseline comparisons and measurements intercepts model revealed IFI (0.944) and TLI (0.927) and CFI (0.944) fit measures which were all above 0.9 and could be considered acceptable indicators of good fit (Byrne, 2010:78-79). The RMSEA for the measurement intercepts models was 0.05 which implied good fit (Vandenberg & Lance, 2000:44).

Table 7-44: Invariance testing across PDI/non-PDI groups for Institutional Practices

Model	Model Fit Summary	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	96	546.3	142	0.000	3.847	738.3
M1	Measurement weights	86	570.5	152	0.000	3.753	742.5
M2	Measurement intercepts	76	620.0	162	0.000	3.827	772.0
M3	Structural means	72	651.3	166	0.000	3.923	795.3
M4	Structural covariances	62	678.6	176	0.000	3.855	802.6
M5	Measurement residuals	48	776.3	190	0.000	4.086	872.3
	Saturated model	238	0.0	0			476.0
	Independence model	28	8391.9	210	0.000	39.962	8447.9
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	0.951	0.927	0.951	0.643	744.4	111.8
M1	Measurement weights	0.949	0.929	0.949	0.687	747.9	105.4
M2	Measurement intercepts	0.944	0.927	0.944	0.728	776.8	124.3
M3	Structural means	0.941	0.925	0.941	0.744	799.8	143.3
M4	Structural covariances	0.939	0.927	0.939	0.787	806.5	140.0
M5	Measurement residuals	0.929	0.921	0.928	0.840	875.3	194.9
	Saturated model	1.000		1.000	0.000	491.0	0.0
	Independence model	0.000	0.000	0.000	0.000	8449.7	7749.3
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Unconstrained	0.050	0.045	0.054	0.514		
M1	Measurement weights	0.049	0.045	0.053	0.640		
M2	Measurement intercepts	0.050	0.046	0.054	0.545		
M3	Structural means	0.051	0.046	0.055	0.411		
M4	Structural covariances	0.050	0.046	0.054	0.506		
M5	Measurement residuals	0.052	0.048	0.056	0.202		
	Independence model	0.184	0.181	0.188	0.000		

However, when the nested model comparisons in Table 7-45 were considered, the intercepts model revealed that measurement invariance is not clearly established between the two groups based on strict criteria using the chi-square difference test.

Thus despite good fit measure results in Table 7-44, the invariance testing indicated that there was not sufficiently established measurement equivalence across the PDI/non-PDI groups. The clustered employment equity groups in the study might have perceived the questions/items in different ways. However, the chi-square difference test is sensitive to sample size and almost always leads to significant chi square values (Little *et al.* 2007). The scalar invariant model was used to compare means across PDI and non-PDI groups based on the recommendation by Little *et al.* (2007) that one could proceed with means comparison when the overall fit of the models are adequate.

Table 7-45: Nested model comparisons for PDI/non-PDI groups for Institutional Practices

Model	Assuming model Unconstrained to be correct:	df	CMIN	P
M1 –M0	Measurement weights	10	24.2	0.007
M2 –M0	Measurement intercepts	20	73.7	0.000
M3–M0	Structural means	24	105.0	0.000
M4–M0	Structural covariances	34	132.3	0.000
M5–M0	Measurement residuals	48	230.0	0.000
M1	Assuming model Measurement weights to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	10	49.5	0.000
M3–M1	Structural means	14	80.8	0.000
M4–M1	Structural covariances	24	108.1	0.000
M5–M1	Measurement residuals	38	205.8	0.000
M2	Assuming model Measurement intercepts to be correct:	df	CMIN	P
M3–M2	Structural means	4	31.3	0.000
M4–M2	Structural covariances	14	58.6	0.000
M5–M2	Measurement residuals	28	156.3	0.000
M3	Assuming model Structural means to be correct:	df	CMIN	P
M4–M3	Structural covariances	10	27.3	0.002
M5–M3	Measurement residuals	24	125.0	0.000
M4	Assuming model Structural covariances to be correct:	df	CMIN	P
M5–M4	Measurement residuals	14	97.7	0.000

7.4.5 Model-implied means and variances for Institutional Practices

In Table 7-46 the means and variances for both the male/female groups and the PDI/non-PDI groups were compared across the four factors obtained for Institutional Practices, based on the intercept invariant model M2.

Table 7-46: Model-implied means and variances for Institutional Practices

Factors	Means		Variances	
	MALES	FEMALES	MALES	FEMALES
Institutional Leadership	2.730	2.729	0.438	0.437
Diversity and Respect	2.832	2.810	0.270	0.365
HR Practices	2.840	2.826	0.247	0.252
Talent Development	2.526	2.588	0.510	0.460

Factors	Means		Variances	
	PDI	non-PDI	PDI	non-PDI
Institutional Leadership	2.691	2.818	0.458	0.365
Diversity and Respect	2.758	2.953	0.376	0.260
HR Practices	2.789	2.933	0.271	0.176
Talent Development	2.512	2.709	0.512	0.356

The results in Table 6-46, indicated that males and females appeared to have similar views on *Institutional Leadership*, *Diversity and Respect*, *HR Practices* and *Talent Development*. The PDI group displays less satisfaction with all four institutional factors when compared with the non-PDI group. Difference between the groups should be interpreted with caution due to the reasons discussed in section 7.4.4.3 which indicate that the PDI/non-PDI groups may have a different understanding of the items.

7.5 PSYCHOMETRIC ANALYSIS OF INTENTION TO QUIT SCALE

As described in section 4.9 during the scale development process, the wording in two of the three items in Cohen's (1993) *withdrawal intentions* scale was changed. Cohen (1993) described *withdrawal intentions* as a multi-dimensional construct and he reported different outcomes depending on whether the wording was "intention to leave the job"; "intention to leave the organisation" or "intention to leave the occupation". A decision was made to conduct a validation analysis on the scale to ensure that the change in wording applied in this study did not affect the factor analysis. Employees were asked to rate the extent of their agreement or disagreement with three statements on the withdrawal intentions scale (Cohen,

1993) with slightly modified wording called *Intention to Quit* in this study. As this was a pre-existing scale with a single factor structure, the split sample methodology was not required. A 6-point Likert scale that ranged from 1 = *Strongly disagree* to 6 = *Strongly Agree* was used.

7.5.1 Descriptive statistics for Intention to Quit scale

In Table 7-47 the frequencies, mean, standard deviation, skewness and kurtosis are presented for the Intention to Quit scale in the GDE sample.

Table 7-47: Descriptive statistics Intention to Quit items

Items		1=Strongly disagree	2=Disagree	3=Slightly disagree	4=Slightly Agree	5=Agree	6=Strongly agree	Total	M	SD	Skew.	Kurt.
		Disagree			Agree							
G1: I think a lot about leaving the organisation	Freq.	202	195	82	129	170	243	1021	3.59	1.891	-0.056	-1.527
	%	19.8	19.1	8.0	12.6	16.7	23.8	100				
	%	46.9			53.1							
G2: I am currently searching for employment outside this organisation	Freq.	315	221	57	104	128	164	989	3.00	1.902	0.414	-1.398
	%	31.9	22.3	5.8	10.5	12.9	16.6	100				
	%	60.0			40.0							
G3: When possible, I will leave this organisation	Freq.	184	147	67	95	240	307	1040	3.94	1.906	-0.400	-1.414
	%	17.7	14.1	6.4	9.1	23.1	29.5	100				
	%	38.3			61.7							

Considering Table 7-47, the frequency analysis of item 1, *I think a lot about leaving the organisation*, revealed that 53% of respondents *slightly to strongly agreed* with the statement. The skewness revealed a negative distribution which implied a bunching of responses to the right of the mean (3.59) towards the stronger agreement with the statement. Examination of the kurtosis of the items of this scale revealed only negative values which indicated a relatively flat distribution as opposed to a normal distribution (Hair *et al.*, 2010). The kurtosis pattern for all three items was

similar. Item 2, which referred to current *job search* outside of the organisation revealed that 40% of respondents *slightly to strongly* agreed while 60% slightly to strongly disagreed, although 159 respondents declined to answer the question. It remains speculation as to whether this was due to confidentiality fears. Item 2 had a positive value for skewness (0.414) which indicated a peak to the left of the mean (3.0) and a bunching of responses in the direction of disagreement. Item 3, *when possible, I will leave this organisation*, had the highest mean (3.94) with 61.7% of respondents displaying slight to strong agreement with this statement. The distribution was negatively skewed with a peak to the right of the mean which was confirmed by the frequency distribution and this implied a concentration of responses in the direction of agreement with the statement.

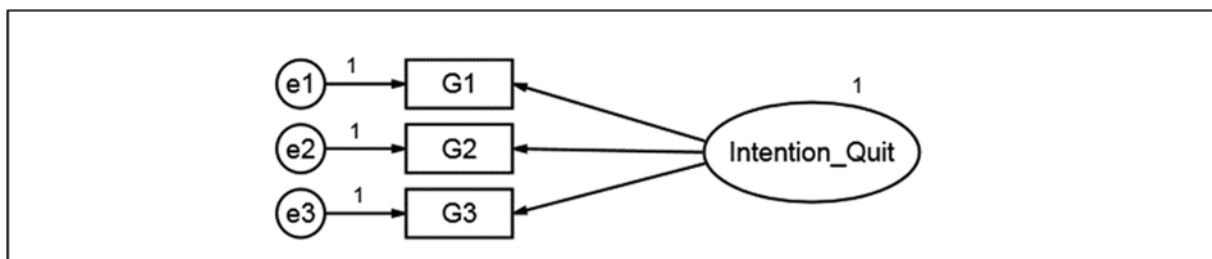
7.5.2 Validation analysis for Intention to Quit scale

In the HEI study, EFA was conducted in order to confirm if the revised wording used for this scale would produce a single factor for the current sample. The split sample methodology was not required, since adequate fit was obtained when a CFA analysis was conducted on the complete sample. Invariance testing was done using the SPSS AMOS 22 multiple-group procedure.

7.5.2.1 CFA for Intention to Quit scale items for complete sample

Confirmatory factor analysis is useful for assessing the construct validity of a measure and it is useful to estimate the relationships between the scale items and the underlying latent constructs (Hair *et al.*, 2010). The one-factor model for the Intention to Quit scale is depicted in Figure 7-4.

Figure 7-4: CFA 1 Factor Model for Intention to Quit



Chapter 7: Item Evaluations and Validation

The maximum likelihood (ML) estimated standardised loadings for the Intention to Quit scale are shown in Table 7-48. They were all above 0.7 which was recommended as ideal by Hair *et al.* (2010:673) and thus supported convergent validity for the scale. The item with the strongest standardised estimate loading was G3 at 0.908 (*When possible I will leave this organisation*). Squared multiple correlations (SMC) and the Critical Ratio met the required criteria specified in Table 7.1.

Table 7-48: ML estimated regression coefficients Intention to Quit

Item		ITQ	Estimate	S.E.	C.R.	P	Standardised Estimates	Error variances	SMC
G1	<---	Intention_Quit	1.651	0.049	33.678	***	0.875	0.834	0.766
G2	<---	Intention_Quit	1.459	0.053	27.765	***	0.767	1.494	0.588
G3	<---	Intention_Quit	1.736	0.049	35.685	***	0.908	0.642	0.824

1: In the CFA model, the means and variances of the latent variables were constrained equal to 0 and 1 respectively for the purpose of model identification (Bollen, 1989)

7.5.3 Reliability statistics for the Intention to Quit items

Internal consistency reliability for the full scale was assessed by means of Cronbach's coefficient alpha and a result of 0.885 (three items) was obtained which could be regarded as good (Field, 2009:681). Cronbach's alphas were calculated for each of the three factors identified.

Table 7-49: Cronbach's coefficient alpha (if item is deleted) for the Intention to Quit items

Items	Entire sample
G1: I think a lot about leaving the organisation	0.821
G2: I am currently searching for employment outside this organisation	0.884
G3: When possible, I will leave this organisation	0.804

7.5.4 Invariance testing for the Intention to Quit items

An evaluation of the measurement equivalence of the scale for this South African sample in general education was required in order to determine if the scale items

could be assumed to function in the same manner across male and females groups and PDI/non-PDI groups. Using the SPSS AMOS 22 multiple-group procedure for the invariance testing, five increasingly restrictive models were fitted across gender and PDI/non-PDI groups.

7.5.4.1 Invariance testing over gender groups for Intention to Quit

Invariance testing helped to investigate whether there were gender differences in the way the item content was perceived. In Table 7-50, consideration of the baseline comparisons for the measurement intercept model showed that IFI = 0.998; TLI = 0.994 and CFI = 0.998, while the RMSEA = 0.028 which implied an excellent fit of the model to the data (see criteria in Table 7-1).

Table 7-50: Invariance testing across gender groups for Intention to Quit

Model	CMIN	NPAR	CMIN	Df	P	CMIN/df	AIC
M0	Unconstrained	18	0.0	0			36.0
M1	Measurement weights	16	1.3	2	0.520	0.655	33.3
M2	Measurement intercepts	14	7.4	4	0.116	1.852	35.4
M3	Structural means	13	12.6	5	0.028	2.510	38.6
M4	Structural covariances	12	13.7	6	0.033	2.282	37.7
M5	Measurement residuals	9	16.1	9	0.065	1.790	34.1
	Saturated model	18	0.0	0			36.0
	Independence model	6	1638.9	12	0.000	136.572	1650.9
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	1.000		1.000	0.000	36.4	0.0
M1	Measurement weights	1.000	1.003	1.000	0.167	33.6	-4.8
M2	Measurement intercepts	0.998	0.994	0.998	0.333	35.7	-4.8
M3	Structural means	0.995	0.989	0.995	0.415	38.8	-2.7
M4	Structural covariances	0.995	0.991	0.995	0.498	37.9	-4.6
M5	Measurement residuals	0.996	0.994	0.996	0.747	34.3	-11.3
	Saturated model	1.000		1.000	0.000	36.4	0.0
	Independence model	0.000	0.000	0.000	0.000	1651.0	1602.3
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M1	Measurement weights	0.000	0.000	0.052	0.938		
M2	Measurement intercepts	0.028	0.000	0.058	0.870		
M3	Structural means	0.037	0.011	0.063	0.773		
M4	Structural covariances	0.034	0.009	0.058	0.851		
M5	Measurement residuals	0.027	0.000	0.047	0.971		
	Independence model	0.349	0.334	0.363	0.000		

Chapter 7: Item Evaluations and Validation

When the nested model comparisons in Table 7-51 were evaluated, the model comparison of M2–M1 was significant, so that the measurement intercepts model fitted significantly poorer than the measurement weights model and revealed that the model in which the intercepts were constrained equal (M2) is compared with the model M1 where the measurement weights are constrained the equal, the difference in fit was statistically significant ($p=0.047$), which means that equivalence across gender groups is not strongly supported. However, since the sample is relatively large, the significances are possibly inflated (Schermeleeh-Engel *et al.*, 2003:33). This result suggests that it may be possible that the males and females in the sample viewed the Intention to Quit items in a different way.

Table 7-51: Nested model comparisons across gender groups for Intention to Quit

Models compared	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1 –M0	Measurement weights	2	1.3	0.520
M2 –M0	Measurement intercepts	4	7.4	0.116
M3–M0	Structural means	5	12.6	0.028
M4–M0	Structural covariances	6	13.7	0.033
M5–M0	Measurement residuals	9	16.1	0.065
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	2	6.1	0.047
M3–M1	Structural means	3	11.2	0.010
M4–M1	Structural covariances	4	12.4	0.015
M5 –M1	Measurement residuals	7	14.8	0.039
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	1	5.1	0.023
M4–M2	Structural covariances	2	6.3	0.043
M5-M2	Measurement residuals	5	8.7	0.122
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	1	1.1	0.285
M5–M3	Measurement residuals	4	3.6	0.469
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	3	2.4	0.491

7.5.4.2 Invariance testing over PDI/non-PDI groups for Intention to Quit

Invariance testing across the clustered employment equity groups for the Intention to Quit scale was conducted and results are reported in Table 7-52. Invariance testing was required in order to determine if the PDI/non-PDI groups had a similar perception of the scale items. In Table 7-52, when considering the baseline comparisons of the measurement intercepts model, excellent IFI (0.978) and CFI (0.977) fit measure results were found while TLI (0.932) fit measures fall within the acceptable range for good fit and the RMSEA of 0.062 meets the required criteria for acceptable fit (Vandenberg & Lance, 2000).

Table 7-52: Invariance testing over PDI/non-PDI groups for Intention to Quit

Model	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
M0	Unconstrained	18	0.0	0			36.0
M1	Measurement weights	16	13.6	2	0.001	6.802	45.6
M2	Measurement intercepts	14	42.8	4	0.000	10.688	70.8
M3	Structural means	13	60.2	5	0.000	12.049	86.2
M4	Structural covariances	12	62.3	6	0.000	10.376	86.3
M5	Measurement residuals	9	102.0	9	0.000	11.337	120.0
	Saturated model	18	0.0	0			36.0
	Independence model	6	1726.7	12	0.000	143.895	1738.7
Model	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
M0	Unconstrained	1.000		1.000	0.000	36.3	0.0
M1	Measurement weights	0.993	0.959	0.993	0.166	45.9	7.5
M2	Measurement intercepts	0.978	0.932	0.977	0.326	71.0	30.5
M3	Structural means	0.968	0.923	0.968	0.403	86.5	44.9
M4	Structural covariances	0.967	0.934	0.967	0.484	86.5	43.9
M5	Measurement residuals	0.946	0.928	0.946	0.709	120.2	74.5
	Saturated model	1.000		1.000	0.000	36.3	0.0
	Independence model	0.000	0.000	0.000	0.000	1738.8	1690.0
Model	RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
M0	Measurement weights	0.071	0.039	0.109	0.130		
M1	Measurement intercepts	0.092	0.068	0.118	0.002		
M2	Structural means	0.098	0.077	0.121	0.000		
M3	Structural covariances	0.090	0.071	0.111	0.000		
M4	Measurement residuals	0.095	0.079	0.112	0.000		
M5	Independence model	0.353	0.339	0.367	0.000		

Chapter 7: Item Evaluations and Validation

However, the nested model comparisons for the intercepts model shown in Table 7-53 showed significant differences between the measurement invariant model with means and intercepts constrained compared to the configural invariant model and there was therefore not clearly established measurement equivalence between the groups. However, the chi-square difference test can result in models being rejected that are actually credible and for this reason is not used alone as the only fit measure in large samples (Schermelele-Engel et al., 2003). Due to the recommendation of Little *et al.* (2007) as presented in section 7.2.4.3, model M2 was used for means comparisons and the interpretation of mean differences were conducted with caution, and it was conducted with a reasonably well fitting model in which measurement weights and measurement intercepts were constrained equal in the model.

Table 7-53: Nested model comparisons across PDI/non-PDI groups for Intention to Quit

Models compared	Assuming model Unconstrained (M0) to be correct:	df	CMIN	P
M1 –M0	Measurement weights	2	13.6	0.001
M2 –M0	Measurement intercepts	4	42.8	0.000
M3–M0	Structural means	5	60.2	0.000
M4–M0	Structural covariances	6	62.3	0.000
M5–M0	Measurement residuals	9	102.0	0.000
M1	Assuming model Measurement weights (M1) to be correct:	df	CMIN	P
M2–M1	Measurement intercepts	2	29.2	0.000
M3–M1	Structural means	3	46.6	0.000
M4–M1	Structural covariances	4	48.7	0.000
M5 –M1	Measurement residuals	7	88.4	0.000
M2	Assuming model Measurement intercepts (M2) to be correct:	df	CMIN	P
M3-M2	Structural means	1	17.5	0.000
M4–M2	Structural covariances	2	19.5	0.000
M5-M2	Measurement residuals	5	59.3	0.000
M3	Assuming model Structural means (M3) to be correct:	df	CMIN	P
M4–M3	Structural covariances	1	2.0	0.156
M5–M3	Measurement residuals	4	41.8	0.000
M4	Assuming model Structural covariances (M4) to be correct:	df	CMIN	P
M5–M4	Measurement residuals	3	39.8	0.000

7.5.5 Model-implied means and variances for Intention to Quit

Table 7-54: Model-implied means and variances for Intention to Quit

Scale	Means		Variances	
Intention to Quit	MALES	FEMALES	MALES	FEMALES
	3.840	3.573	2.489	2.830
Scale	Means		Variances	
Intention to Quit	PDI	non-PDI	PDI	non-PDI
	3.842	3.359	2.624	2.928

From Table 7-54 it appeared that PDI males (Black, Coloured and Indian males) consider leaving the organisation more strongly than females or non-PDI respondents. However, based on the reasons provided in section 7.5.4.2, the results should be interpreted with caution as the PDI group and non-PDI group might view the items and latent constructs in different ways, which should receive attention in future improvements and application of the scale.

7.6 SUMMARY

In this chapter the item evaluations and validation analysis of the Talent Retention Scale based on the sample in general education was presented. A comprehensive psychometric analysis was conducted for each of the sub-scales:

- Compensation and Recognition items
- Management Support items
- Institutional Practices items

For the three new scales this psychometric analysis included descriptive statistics, EFA, CFA, reliability statistics and invariance testing. The established scale measuring withdrawal intentions (Cohen, 1993) was named *Intention to Quit* in this study and descriptive statistics, CFA, reliability statistics and invariance testing across gender and PDI/Non-PDI groups was conducted for the general education sample.

Chapter 7: Item Evaluations and Validation

In the following Chapter, a comprehensive analysis combining the three *Compensation* factors, the two *Management Support* factors and the four *Institutional Practices* factors in a single model is presented. The first part of chapter 8 is devoted to the testing of a second-order confirmatory factor analysis measurement model, which is modelled as a comprehensive talent management measure. The invariance of the second-order model is evaluated across males and females, as well as over PDI/non-PDI groups. Lastly, the relationship between the second-order factors and ITQ is modelled, and a formal test of moderation is conducted.

CHAPTER 8: A COMPREHENSIVE HIGHER-ORDER MODEL FOR TALENT RETENTION

8.1 INTRODUCTION

Based on the quantitative psychometric analyses on the three sub-scales that were developed in this study reported in Chapter 7, is proposed to form part of a more comprehensive Talent Retention Scale (TRS) consisting of three main conceptually distinctive aspects, namely

- Compensation and Recognition;
- Management Support; and
- Satisfaction with Institutional Practices.

Each of these scales was extensively subjected to EFA, CFA as well as invariance testing using multiple group (MG) CFA modelling to determine the number of factors as well as to assess the discriminant and the convergent validity of each of the individual measures in Chapter 7. This chapter, consists of four main sections. Firstly, an overall second-order measurement model, where all three of the sub-scales mentioned are investigated, as a plausible higher-order model of talent retention. The second part of Chapter 8 reports the results of a SEM model where a MG MACS analysis was conducted to assess the nomological validity of the 2CFA Talent Retention model. In section 8.3 the nomological validity of the 2CFA Talent Retention model is assessed and the higher-order model is tested as an antecedent of *Intention to Quit* (ITQ). In this model, the moderating role of gender and EE group on the relationships between the higher level aspects of talent management and ITQ is investigated and the results are presented in sections 8.4 and 8.5 respectively.

8.2 A SECOND-ORDER CONFIRMATORY FACTOR ANALYSIS MODEL OF TALENT RETENTION

The psychometric properties of the 2CFA comprehensive model for talent retention is assessed by:

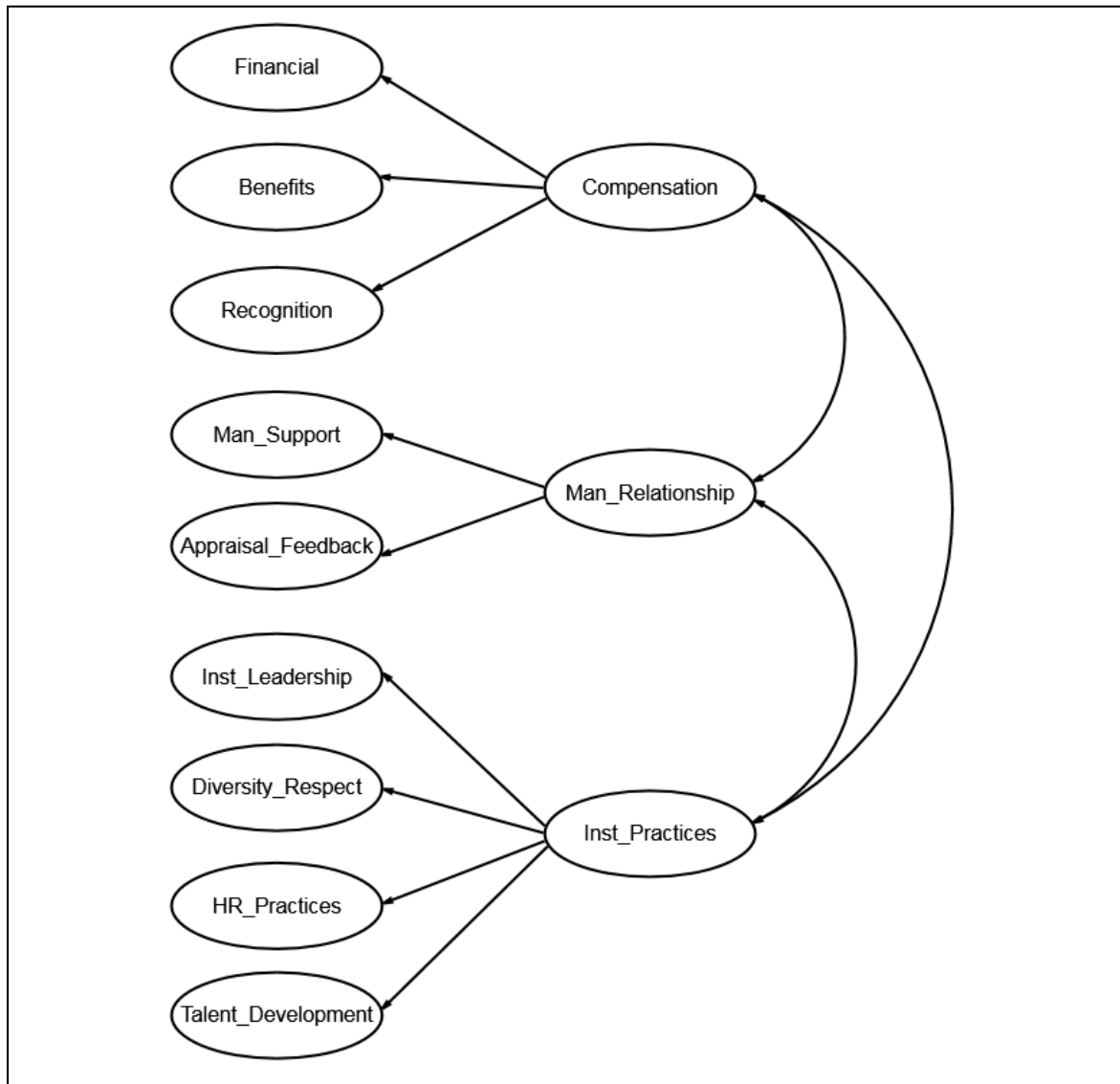
- evaluating its overall fit to the GDE data;
- investigating the convergent and discriminant validity of the higher-order model;
- evaluating the measurement invariance of the higher-order model over males and females, as well as over PDI and non-PDI groups.

8.2.1 2CFA model

From the CFA analyses in sections 7.2; 7.3 and 7.4 a total of nine first-order factors were obtained from the three sub-scales that formed part of the Talent Retention Scale (TRS). Second-order confirmatory factor analysis (2CFA) was utilised to determine if there were possible “higher-level explanations of the covariances between the first-order factors”. An explanation of the higher-order relationships could contribute to theory development by simplifying the first order CFA model (Strasheim, 2011:38). In this chapter, the plausibility of a second-order confirmatory factor analysis model (2CFA) underlying the first order latent variables is investigated. The 2CFA model in Figure 8-1 is presented as a plausible explanation of talent retention. The 2CFA analysis was conducted using SPSS Amos 22 (2014).

Due to an input requirement of the statistical programme that unique names for the latent variables need to be given, some of the latent factor variable names were slightly altered to accommodate this limitation. The *Compensation* factor in the Compensation scale was renamed *Financial* because the items in this factor were mostly related to financial compensation. In addition the scale Management Support was renamed *Manager Relationship (Man-Relationship)* in the 2CFA model in Figure 8-1 in order to prevent confusion with the factor *Manager Support* that was used on the corresponding 1CFA model in Figure 7-2.

Figure 8-1: 2CFA Measurement Model



The fit measures of an analysis of the entire sample for the comprehensive 2CFA model are displayed in Table 8-1.

Table 8-1: Fit measures of the comprehensive 2 CFA model when fitted on the entire GDE sample

Model	NPAR	CMIN	df	P	CMIN/df
Default model	108	2196.9	452	0	4.86
Baseline Comparisons	IFI	TLI	CFI		
	0.926	0.913	0.925		
RMSEA	RMSEA	LO 90	HI 90	PCLOSE	
	0.058	0.056	0.060	0.000	

As can be seen in Table 8-1, the fit measures from the 2CFA measurement model displayed good IFI, TLI and CFI fit values, as these are all above 0.9 and the RMSEA = 0.058 which also indicates that the model fits the data well. Although the CMIN/df ratio is not below 3, several authors cautioned against using this as the main criteria for fit due to the influence that large sample size could have on the CMIN/df ratio (Chen, 2007:465; Schermelleh-Engel *et al.*, 2003:24.) Hinkin (1998:114) stated that “a model with a large chi-square may still be a good fit if the fit indices are high”. Due to the dependence of CMIN on sample size, the CMIN/df would also be affected by increased sample sizes.

Due to several differences among the South African cultural groups, invariance testing was conducted across gender and employment equity groups (PDI/non-PDI) in order to investigate the measurement invariance of the 2CFA model over these different groups. Measurement equivalence was assessed across gender groups and is discussed in section 8.2.2 and the results are reported in Table 8-2 while the nested model comparisons across gender groups are displayed in Table 8-3. Similarly, the measurement invariance testing results over PDI/non-PDI groups are provided in section 8.2.3.

8.2.2 Measurement invariance of the 2CFA Talent Retention model across gender groups

The description of the results that follow is based on an approach recommended by Strasheim (2011); Cheung & Rensvold (2002) and Steenkamp and Baumgartner (1998). This approach investigated several increasingly restrictive models where certain parameters were allowed to be freely estimated, and other parameters were constrained equal across groups, in order to assess the degree to which measurement equivalence could be assumed over gender groups.

Table 8-2: Model fitting results of the measurement invariance analyses across gender for the 2CFA Talent Retention model

	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
MM0	Unconstrained	216	2781.2	904	0.000	3.077	3213.2
MM1	Measurement weights	193	2809.9	927	0.000	3.031	3195.9
MM2	Measurement intercepts	170	2846.0	950	0.000	2.996	3186.0
MM3	Structural weights	164	2857.0	956	0.000	2.989	3185.0
MM4	Structural intercepts	158	2868.8	962	0.000	2.982	3184.8
MM5	Structural means	155	2870.3	965	0.000	2.974	3180.3
MM6	Structural covariances	149	2878.6	971	0.000	2.965	3176.6
MM7	Structural residuals	140	2886.4	980	0.000	2.945	3166.4
MM8	Measurement residuals	108	2996.1	1012	0.000	2.961	3212.1
	Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
MM0	Unconstrained	0.919	0.905	0.919	0.786	3249.8	62.2
MM1	Measurement weights	0.919	0.907	0.918	0.806	3228.6	21.7
MM2	Measurement intercepts	0.918	0.909	0.918	0.826	3214.9	-11.3
MM3	Structural weights	0.918	0.909	0.918	0.831	3212.8	-18.4
MM4	Structural intercepts	0.918	0.909	0.917	0.836	3211.6	-24.7
MM5	Structural means	0.918	0.910	0.917	0.838	3206.5	-32.2
MM6	Structural covariances	0.918	0.910	0.917	0.843	3201.8	-41.9
MM7	Structural residuals	0.918	0.911	0.917	0.851	3190.1	-61.2
MM8	Measurement residuals	0.914	0.910	0.914	0.876	3249.8	-47.7
	Model	RMSEA	LO 90	HI 90	PCLOSE		
MM0	Unconstrained	0.043	0.041	0.045	1.000		
MM1	Measurement weights	0.043	0.041	0.044	1.000		
MM2	Measurement intercepts	0.042	0.041	0.044	1.000		
MM3	Structural weights	0.042	0.040	0.044	1.000		
MM4	Structural intercepts	0.042	0.040	0.044	1.000		
MM5	Structural means	0.042	0.040	0.044	1.000		
MM6	Structural covariances	0.042	0.040	0.044	1.000		
MM7	Structural residuals	0.042	0.040	0.044	1.000		
MM8	Measurement residuals	0.042	0.040	0.044	1.000		
	Independence model	0.140	0.138	0.141	0.000		

For all the models, MM0 to MM8, the CMIN/df ratio is below 3 or just above 3 for the lesser constrained models MM0 and MM1; the IFI, TLI and CFI fit measures are all above 0.9 and the RMSEA is below 0.05 which are all indicative of good to very good fit. The nested model comparisons are shown in Table 8-3.

Table 8-3: Nested model comparisons of the 2CFA Talent Retention model across gender groups

Nested models	Model	df	CMIN	P
MM0	Assuming model Unconstrained (MM0) to be correct:			
MM1-MM0	Measurement weights	23	28.7	0.190
MM2-MM0	Measurement intercepts	46	64.8	0.035
MM3-MM0	Structural weights	52	75.8	0.017
MM4-MM0	Structural intercepts	58	87.6	0.007
MM5-MM0	Structural means	61	89.1	0.011
MM6-MM0	Structural covariances	67	97.4	0.009
MM7-MM0	Structural residuals	76	105.2	0.015
MM8-MM0	Measurement residuals	108	214.9	0.000
MM1	Assuming model Measurement weights (MM1) to be correct:	df	CMIN	P
MM2-MM1	Measurement intercepts	23	36.1	0.040
MM3-MM1	Structural weights	29	47.1	0.018
MM4-MM1	Structural intercepts	35	58.9	0.007
MM5-MM1	Structural means	38	60.4	0.012
MM6-MM1	Structural covariances	44	68.7	0.010
MM7-MM1	Structural residuals	53	76.5	0.019
MM8-MM1	Measurement residuals	85	186.2	0
MM2	Assuming model Measurement intercepts (MM2) to be correct:	df	CMIN	P
MM3-MM2	Structural weights	6	11.0	0.089
MM4-MM2	Structural intercepts	12	22.7	0.030
MM5-MM2	Structural means	15	24.2	0.061
MM6-MM2	Structural covariances	21	32.5	0.052
MM7-MM2	Structural residuals	30	40.4	0.098
MM8-MM2	Measurement residuals	62	150.1	0.000
MM3	Assuming model Structural weights (MM3) to be correct:	df	CMIN	P
MM4-MM3	Structural intercepts	6	11.8	0.067
MM5-MM3	Structural means	9	13.3	0.151
MM6-MM3	Structural covariances	15	21.6	0.120
MM7-MM3	Structural residuals	24	29.4	0.206
MM8-MM3	Measurement residuals	56	139.1	0.000
MM4	Assuming model Structural intercepts (MM4) to be correct:	df	CMIN	P
MM5-MM4	Structural means	3	1.5	0.685
MM6-MM4	Structural covariances	9	9.8	0.368
MM7-MM4	Structural residuals	18	17.6	0.481
MM8-MM4	Measurement residuals	50	127.3	0.000
MM5	Assuming model Structural means (MM5) to be correct:	df	CMIN	P
MM6-MM5	Structural covariances	6	8.3	0.217
MM7-MM5	Structural residuals	15	16.1	0.374
MM8-MM5	Measurement residuals	47	125.9	0.000
MM6	Assuming model Structural covariances (MM6) to be correct:	df	CMIN	P
MM7-MM6	Structural residuals	9	7.8	0.552
MM8-MM6	Measurement residuals	41	117.5	0.000
MM7	Assuming model Structural residuals (MM7) to be correct:	df	CMIN	P
MM8-MM7	Measurement residuals	32	109.7	0.000

When the nested model comparison of model MM1 is compared to model MM0, (MM1–MM0), the p-value is 0.190. Therefore the metric invariant model MM1 does not fit the data significantly worse than the unconstrained MM0 model, suggesting that metric invariance of the 2CFA model can be assumed over gender groups. When the MM2 model is compared to model MM0, (MM2–MM0) in Table 8-3, the difference in fit is significant against a significant level of $\alpha=0.05$ with the p-value = 0.035. It therefore means that in the overall Talent Retention model, scalar equivalence is not clearly established over gender groups. However, due to the overall good fit achieved in Table 8-2 and with the view that the CMIN statistic is dependent on sample size, it still seems fairly reasonable with a significance level of $\alpha=0.01$ that the scalar invariance model MM2 can be imposed on the model. Little, Card, Slegers and Ledford (2007) and Strasheim (2014) suggested that when measurement invariance is evaluated, slightly relaxed fit criteria could be used.

The maximum likelihood regression weights and intercepts are shown in Table 8-4.

Table 8-4: ML estimated regression weights and intercepts of the 2CFA multiple-group scalar invariant model MM2 by gender

Relationships	Standardised regression weights		Unstandardised regression weights				Intercepts			
			Male		Female					
			Male	Female	Estimate	P	Estimate	P	Male	Female
Structural weights										
Financial	<---	Compensation	0.902	0.925	1.000		1.000		0.000	0.000
Benefits	<---	Compensation	0.686	0.718	0.773	***	0.778	***	1.201	1.080
Recognition	<---	Compensation	0.861	0.819	1.009	***	0.993	***	0.719	0.688
Man_Support	<---	Man_Relationship	0.940	0.944	1.000		1.000		0.000	0.000
Appraisal_Feedback	<---	Man_Relationship	0.947	0.939	1.025	***	0.992	***	-0.481	-0.226
Inst_Leadership	<---	Inst_Practices	0.916	0.909	1.000		1.000		0.000	0.000
Diversity_Respect	<---	Inst_Practices	0.611	0.748	0.519	***	0.748	***	1.415	0.772
HR_Practices	<---	Inst_Practices	0.869	0.913	0.710	***	0.762	***	0.902	0.746
Talent_Development	<---	Inst_Practices	0.896	0.925	1.045	***	1.033	***	-0.325	-0.231
Measurement weights										
B2	<---	Benefits	0.766	0.776	1.000		1.000		0.000	0.000
B3	<---	Benefits	0.870	0.840	1.053	***	1.053	***	-0.386	-0.386
B1	<---	Financial	0.684	0.674	0.818	***	0.818	***	0.271	0.271
B5	<---	Financial	0.783	0.744	0.934	***	0.934	***	0.202	0.202
B6	<---	Financial	0.728	0.719	0.979	***	0.979	***	0.601	0.601
B7	<---	Financial	0.805	0.780	0.957	***	0.957	***	-0.190	-0.190
B8	<---	Financial	0.787	0.782	1.000		1.000		0.000	0.000
B4	<---	Recognition	0.745	0.799	1.000		1.000		0.000	0.000
B9	<---	Recognition	0.777	0.811	0.940	***	0.940	***	-0.237	-0.237
C1	<---	Man_Support	0.906	0.856	1.000		1.000		0.000	0.000
C2	<---	Man_Support	0.866	0.841	0.915	***	0.915	***	0.620	0.620
C3	<---	Man_Support	0.924	0.907	1.070	***	1.070	***	-0.421	-0.421
C4	<---	Man_Support	0.700	0.730	0.751	***	0.751	***	0.962	0.962
C5	<---	Man_Support	0.852	0.861	1.018	***	1.018	***	-0.211	-0.211
C6	<---	Appraisal_Feedback	0.860	0.809	1.000		1.000		0.000	0.000
C7	<---	Appraisal_Feedback	0.882	0.849	1.003	***	1.003	***	0.009	0.009

Relationships			Standardised regression weights		Unstandardised regression weights				Intercepts	
					Male		Female			
			Male	Female	Estimate	P	Estimate	P	Male	Female
C8	<---	Appraisal_Feedback	0.914	0.904	1.040	***	1.040	***	0.159	0.159
C9	<---	Appraisal_Feedback	0.904	0.894	1.060	***	1.060	***	0.000	0.000
F1	<---	HR_Practices	0.669	0.671	1.000		1.000		0.000	0.000
F2	<---	HR_Practices	0.752	0.685	1.140	***	1.140	***	-0.668	-0.668
F3	<---	HR_Practices	0.718	0.691	1.067	***	1.067	***	-0.552	-0.552
F4	<---	HR_Practices	0.654	0.652	0.986	***	0.986	***	-0.187	-0.187
F5	<---	HR_Practices	0.578	0.640	0.980	***	0.980	***	-0.164	-0.164
F6	<---	Diversity_Respect	0.724	0.813	1.000		1.000		0.000	0.000
F7	<---	Diversity_Respect	0.729	0.799	0.968	***	0.968	***	0.230	0.230
F8	<---	Inst_Leadership	0.842	0.877	1.000		1.000		0.000	0.000
F9	<---	Inst_Leadership	0.845	0.873	0.919	***	0.919	***	0.263	0.263
F10	<---	Inst_Leadership	0.844	0.879	0.952	***	0.952	***	0.095	0.095
F11	<---	Inst_Leadership	0.793	0.791	0.999	***	0.999	***	0.005	0.005
F12	<---	Talent_Dev	0.862	0.861	1.000		1.000		0.000	0.000
F13	<---	Talent_Dev	0.848	0.805	0.944	***	0.944	***	0.157	0.157
F14	<---	Talent_Dev	0.669	0.652	0.855	***	0.855	***	0.280	0.280

The maximum likelihood estimates using the 2CFA model from Figure 8-1 are all highly significant and the signs of the estimates are in the expected direction. For example, an increase in the score for *Institutional Practices* would also imply an increase in the score for *Talent Development*. In addition, the estimates of the standardised regression weights are all above 0.5, lending support for convergent validity.

The nested model comparisons of the likelihood ratio test between models MM5 and MM2 (MM5–MM2; $p=0.061$) is significant at $\alpha=0.10$, which suggests that the mean level of the three second-order constructs are significantly different. The model implied means and variances for each of the three scales are provided in Table 8-5.

Table 8-5: Model-implied means for 2CFA based on the scalar invariant 2CFA model MM2 of Talent Retention

Factor	Model-implied means		Model-implied variances	
	Male	Female	Male	Female
Compensation	2.614	2.741	1.073	1.229
Man_Relationship	4.415	4.387	1.257	1.258
Inst_Practices	2.734	2.726	0.371	0.359

From the model implied means, it is clear that males and females have obtained fairly similar model-implied mean values for each of the three higher-order factors, with males showing slightly lower levels of satisfaction with the compensation element of the scale and showing slightly more positive perceptions towards their relationships with their managers.

The model-implied maximum likelihood estimates of the covariances and correlations based on the scalar invariant model MM2 are reported in Table 8-6.

Table 8-6: Maximum likelihood estimated covariances and correlations of the scalar invariant 2CFA model MM2 of Talent Retention

Second-order constructs			Covariances		Correlations	
			Male	Female	Male	Female
Compensation	<-->	Man_Relationship	0.574	0.653	0.494	0.525
Compensation	<-->	Inst_Practices	0.352	0.391	0.558	0.588
Man_Relationship	<-->	Inst_Practices	0.502	0.431	0.736	0.640

The correlations and covariances reported are from the measurement weights model. At the second-order CFA level the majority of correlations are below 0.7 which suggests that the scales measure different constructs and thus lends support for discriminant validity. There appears to be a moderate correlation between *Manager Relationship* and *Institutional Practices* for males in the sample (0.736), however, these constructs only share 54% variance ($0.736 \times 0.736 \times 100\% = 54\%$).

The squared multiple correlations and variances for the 2CFA model across gender are displayed in Table 8-7.

Table 8-7: Variances and squared multiple correlations across gender

	Variances		Squared multiple correlations		
	Males	Females		Males	Females
ex1	0.246	0.207	Financial	0.814	0.856
ex2	0.719	0.702	Benefits	0.471	0.515
ex3	0.381	0.597	Recognition	0.741	0.670
ex4	0.167	0.153	Man_Support	0.883	0.892
ex5	0.151	0.165	Appraisal_Feedback	0.897	0.882
ex6	0.071	0.076	Inst_Leadership	0.839	0.826
ex7	0.168	0.158	Diversity_Respect	0.374	0.560
ex8	0.061	0.042	HR_Practices	0.754	0.834
ex9	0.100	0.065	Talent_Development	0.802	0.856
be1	1.001	1.154	B1	0.468	0.454
be2	0.958	0.958	B2	0.587	0.601
be3	0.486	0.667	B3	0.756	0.706
be4	1.185	1.025	B4	0.554	0.638
be5	0.726	1.014	B5	0.613	0.553
be6	1.118	1.283	B6	0.531	0.518
be7	0.656	0.846	B7	0.648	0.609

	Variances		Squared multiple correlations		
	Males	Females		Males	Females
be8	0.812	0.911	B8	0.619	0.612
be9	0.856	0.831	B9	0.603	0.658
ce1	0.311	0.516	C1	0.821	0.732
ce2	0.396	0.490	C2	0.750	0.707
ce3	0.278	0.350	C3	0.854	0.822
ce4	0.836	0.698	C4	0.490	0.532
ce5	0.559	0.511	C5	0.725	0.741
ce6	0.517	0.740	C6	0.740	0.655
ce7	0.423	0.549	C7	0.778	0.720
ce8	0.313	0.340	C8	0.836	0.817
ce9	0.372	0.396	C9	0.817	0.799
e1	0.306	0.305	F1	0.447	0.451
e2	0.247	0.369	F2	0.566	0.469
e3	0.266	0.311	F3	0.515	0.478
e4	0.322	0.329	F4	0.428	0.425
e5	0.473	0.346	F5	0.335	0.410
e6	0.242	0.184	F6	0.525	0.661
e7	0.221	0.191	F7	0.532	0.638
e8	0.182	0.131	F8	0.709	0.769
e9	0.150	0.115	F9	0.713	0.762
e10	0.162	0.116	F10	0.713	0.773
e11	0.261	0.260	F11	0.629	0.626
e12	0.174	0.157	F12	0.743	0.741
e13	0.176	0.217	F13	0.718	0.648
e14	0.455	0.444	F14	0.448	0.425

The SMC results do not reveal any items below 0.3 which implies that all items can be retained as part of the scale (Beavers *et al.*, 2013:11; Tabachnick & Fidell, 2001). In the 2CFA model for Talent Retention, all the SMC results are above 0.3. Examination of the variances reveal acceptable results and there are no major concerns with error variances or item variances obtained in the 2CFA model of Talent Retention when applied across males and females. The findings in this section can be summarised as being that measurement equivalence can be reasonably assumed to hold for both males and females for the proposed 2CFA measurement scale for Talent Retention.

8.2.3 Measurement invariance of the 2CFA Talent retention model across PDI/non-PDI groups

In Table 8-8 the fit measures of the invariance testing results across PDI/non-PDI groups using the 2CFA model from Figure 8-1 are displayed.

Table 8-8: 2CFA measurement invariance testing for the 2CFA model of Talent Retention across PDI/non-PDI groups

MODEL	CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
MM0	Unconstrained	216	2889.5	904	0.000	3.196	3321.5
MM1	Measurement weights	193	2947.8	927	0.000	3.180	3333.8
MM2	Measurement intercepts	170	3100.3	950	0.000	3.264	3440.3
MM3	Structural weights	164	3108.3	956	0.000	3.251	3436.3
MM4	Structural intercepts	158	3126.5	962	0.000	3.250	3442.5
MM5	Structural means	155	3153.1	965	0.000	3.267	3463.1
MM6	Structural covariances	149	3183.9	971	0.000	3.279	3481.9
MM7	Structural residuals	140	3213.9	980	0.000	3.279	3493.9
MM8	Measurement residuals	108	3386.3	1012	0.000	3.346	3602.3
	Saturated model	1120	0.0	0			2240.0
	Independence model	64	24613.5	1056	0.000	23.308	24741.5
Baseline Comparisons		IFI	TLI	CFI	PCFI	BCC	BIC
MM0	Unconstrained	0.916	0.902	0.916	0.784	3352.7	123.3
MM1	Measurement weights	0.915	0.902	0.914	0.803	3361.8	111.3
MM2	Measurement intercepts	0.909	0.899	0.909	0.818	3464.9	193.4
MM3	Structural weights	0.909	0.899	0.909	0.823	3460.0	183.0
MM4	Structural intercepts	0.908	0.899	0.908	0.827	3465.4	182.8
MM5	Structural means	0.907	0.898	0.907	0.829	3485.5	200.2
MM6	Structural covariances	0.906	0.898	0.906	0.833	3503.5	212.7
MM7	Structural residuals	0.905	0.898	0.905	0.840	3514.1	215.1
MM8	Measurement residuals	0.899	0.895	0.899	0.862	3618.0	289.7
RMSEA		RMSEA	LO 90	HI 90	PCLOSE		
MM0	Unconstrained	0.044	0.042	0.046	1.000		
MM1	Measurement weights	0.044	0.042	0.045	1.000		
MM2	Measurement intercepts	0.044	0.043	0.046	1.000		
MM3	Structural weights	0.044	0.043	0.046	1.000		
MM4	Structural intercepts	0.044	0.043	0.046	1.000		
MM5	Structural means	0.044	0.043	0.046	1.000		
MM6	Structural covariances	0.045	0.043	0.046	1.000		
MM7	Structural residuals	0.045	0.043	0.046	1.000		
MM8	Measurement residuals	0.045	0.044	0.047	1.000		

The fit measure of MM2, the scalar invariant model where the measurement intercepts are constrained equal, indicate good fit for IFI and CFI (above 0.9) while TLI is 0.899. The RMSEA results are good (0.044) for all the models MM0 to MM5.

The CMIN/df ratio is in the region of 3.2 for all the models, which is slightly more than 3, but with the large sample this measure should not be used very strictly, since large sample size affects the chi-square statistic (Hinkin, 1998:114). The nested model comparisons are shown in Table 8-9.

Table 8-9: Nested model comparisons for invariance testing across PDI/non-PDI groups for the 2CFA Talent Retention model

Nested models	Model	df	CMIN	P
MM0	Assuming model Unconstrained (MM0) to be correct:			
MM1-MM0	Measurement weights	23	58.4	0.000
MM2-MM0	Measurement intercepts	46	210.8	0.000
MM3-MM0	Structural weights	52	218.8	0.000
MM4-MM0	Structural intercepts	58	237.0	0.000
MM5-MM0	Structural means	61	263.6	0.000
MM6-MM0	Structural covariances	67	294.5	0.000
MM7-MM0	Structural residuals	76	324.4	0.000
MM8-MM0	Measurement residuals	108	496.9	0.000
MM1	Assuming model Measurement weights (MM1) to be correct:			
MM2-MM1	Measurement intercepts	23	152.5	0.000
MM3-MM1	Structural weights	29	160.5	0.000
MM4-MM1	Structural intercepts	35	178.7	0.000
MM5-MM1	Structural means	38	205.2	0.000
MM6-MM1	Structural covariances	44	236.1	0.000
MM7-MM1	Structural residuals	53	266.0	0.000
MM8-MM1	Measurement residuals	85	438.5	0.000
MM2	Assuming model Measurement intercepts (MM2) to be correct:			
MM3-MM2	Structural weights	6	8.0	0.239
MM4-MM2	Structural intercepts	12	26.2	0.010
MM5-MM2	Structural means	15	52.7	0.000
MM6-MM2	Structural covariances	21	83.6	0.000
MM7-MM2	Structural residuals	30	113.5	0.000
MM8-MM2	Measurement residuals	62	286.0	0.000
MM3	Assuming model Structural weights (MM3) to be correct:			
MM4-MM3	Structural intercepts	6	18.2	0.006
MM5-MM3	Structural means	9	44.8	0.000
MM6-MM3	Structural covariances	15	75.6	0.000
MM7-MM3	Structural residuals	24	105.6	0.000
MM8-MM3	Measurement residuals	56	278.0	0.000
MM4	Assuming model Structural intercepts (MM4) to be correct:			
MM5-MM4	Structural means	3	26.6	0.000
MM6-MM4	Structural covariances	9	57.4	0.000
MM7-MM4	Structural residuals	18	87.4	0.000
MM8-MM4	Measurement residuals	50	259.8	0.000
MM5	Assuming model Structural means (MM5) to be correct:			

MM6-MM5	Structural covariances	6	30.9	0.000
MM7-MM5	Structural residuals	15	60.8	0.000
MM8-MM5	Measurement residuals	47	233.3	0.000
MM6	Assuming model Structural covariances (MM6) to be correct:			
MM7-MM6	Structural residuals	9	29.9	0.000
MM8-MM6	Measurement residuals	41	202.4	0.000
MM7	Assuming model Structural residuals (MM7) to be correct:			
MM8-MM7	Measurement residuals	32	172.5	0.000

When the likelihood ratio statistics are considered in Table 8-9, both the nested model comparison between MM1 and MM0 (MM1–MM0) and MM2 and MM0 (MM2–MM0) were highly significant. This result implies that for the overall 2CFA Talent Retention model, measurement invariance cannot be assumed across PDI/non-PDI groups. It seems therefore that the PDI/non-PDI groups may perceive the questions that indicate the factors in the Talent Retention Scale differently in terms of the ‘intensity’ of the statements, and with different off-sets (zero-line). However, based on the overall fit measures, it is still possible to impose metric and scalar constraints over the model (Little *et al.*, 2007; Strasheim, 2014), in order to proceed with further analysis.

In Table 8-10 the maximum likelihood standardised regression weights as well as unstandardised regression weights and intercepts for the scalar invariant model MM2 are displayed.

Table 8-10: ML Regression Weights and Intercepts by PDI/non-PDI for the 2CFA scalar invariant model MM2

Relationships			Standardised regression weights		Unstandardised regression weights				Intercepts	
			PDI	non-PDI	PDI		non-PDI		PDI	non-PDI
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
Structural Weights										
Financial	<---	Compensation	0.968	0.749	1.000		1.000		0.000	0.000
Benefits	<---	Compensation	0.772	0.482	0.798	***	0.669	***	0.975	1.558
Recognition	<---	Compensation	0.818	0.878	0.942	***	1.236	***	0.824	0.048
Man_Support	<---	Man_Relationship	0.935	0.958	1.000		1.000		0.000	0.000
Appraisal_Feedback	<---	Man_Relationship	0.950	0.926	1.035	***	0.967	***	-0.434	-0.172
Inst_Leadership	<---	Inst_Practices	0.932	0.867	1.000		1.000		0.000	0.000
Diversity_Respect	<---	Inst_Practices	0.708	0.688	0.681	***	0.666	***	0.929	1.077
HR_Practices	<---	Inst_Practices	0.875	0.935	0.720	***	0.752	***	0.851	0.814
Talent_Development	<---	Inst_Practices	0.908	0.934	1.023	***	1.054	***	-0.242	-0.259
Measurement weights										
B2	<---	Benefits	0.783	0.779	1.000		1.000		0.000	0.000
B3	<---	Benefits	0.838	0.824	1.021	***	1.021	***	-0.277	-0.277
B1	<---	Financial	0.697	0.636	0.822	***	0.822	***	0.259	0.259
B5	<---	Financial	0.765	0.713	0.931	***	0.931	***	0.196	0.196
B6	<---	Financial	0.738	0.681	0.978	***	0.978	***	0.592	0.592
B7	<---	Financial	0.788	0.777	0.955	***	0.955	***	-0.196	-0.196
B8	<---	Financial	0.789	0.765	1.000		1.000		0.000	0.000
B4	<---	Recognition	0.783	0.779	1.000		1.000		0.000	0.000
B9	<---	Recognition	0.801	0.771	0.934	***	0.934	***	-0.238	-0.238
C1	<---	Man_Support	0.870	0.858	1.000		1.000		0.000	0.000
C2	<---	Man_Support	0.843	0.852	0.918	***	0.918	***	0.599	0.599
C3	<---	Man_Support	0.904	0.920	1.075	***	1.075	***	-0.446	-0.446

Relationships			Standardised regression weights		Unstandardised regression weights				Intercepts	
			PDI	non-PDI	PDI		non-PDI		PDI	non-PDI
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
C4	<---	Man_Support	0.712	0.767	0.767	***	0.767	***	0.872	0.872
C5	<---	Man_Support	0.860	0.858	1.028	***	1.028	***	-0.261	-0.261
C6	<---	Appraisal_Feedback	0.823	0.815	1.000		1.000		0.000	0.000
C7	<---	Appraisal_Feedback	0.849	0.863	0.995	***	0.995	***	0.048	0.048
C8	<---	Appraisal_Feedback	0.909	0.901	1.033	***	1.033	***	0.189	0.189
C9	<---	Appraisal_Feedback	0.897	0.895	1.056	***	1.056	***	0.019	0.019
F1	<---	HR_Practices	0.660	0.680	1.000		1.000		0.000	0.000
F2	<---	HR_Practices	0.708	0.658	1.140	***	1.140	***	-0.672	-0.672
F3	<---	HR_Practices	0.693	0.674	1.069	***	1.069	***	-0.566	-0.566
F4	<---	HR_Practices	0.667	0.619	1.006	***	1.006	***	-0.246	-0.246
F5	<---	HR_Practices	0.674	0.511	1.002	***	1.002	***	-0.230	-0.230
F6	<---	Diversity_Respect	0.800	0.786	1.000		1.000		0.000	0.000
F7	<---	Diversity_Respect	0.786	0.737	0.952	***	0.952	***	0.268	0.268
F8	<---	Inst_Leadership	0.867	0.861	1.000		1.000		0.000	0.000
F9	<---	Inst_Leadership	0.874	0.833	0.917	***	0.917	***	0.264	0.264
F10	<---	Inst_Leadership	0.865	0.883	0.964	***	0.964	***	0.066	0.066
F11	<---	Inst_Leadership	0.797	0.776	1.001	***	1.001	***	0.000	0.000
F12	<---	Talent_Development	0.865	0.840	1.000		1.000		0.000	0.000
F13	<---	Talent_Development	0.829	0.784	0.948	***	0.948	***	0.148	0.148
F14	<---	Talent_Development	0.650	0.659	0.860	***	0.860	***	0.267	0.267

When considering the maximum likelihood regression weights by PDI/non-PDI groups for the 2CFA scalar invariant model, highly statistically significant estimates were found which are shown in Table 8-10. The relationships are all positive which implies that the variables being compared co-vary in the same direction (O' Neil, 2009). Therefore, for example, an increase in the score for *Manager Relationship* would also result in an increase in the score for *Appraisal and Feedback*. Support for convergent validity is obtained from the estimates of the standardised regression weights which are all above 0.5 as required (Hair *et al.*, 2010:688).

The model-implied means for the overall 2CFA model across PDI/non-PDI groups are displayed in Table 8-11.

Table 8-11: Model-implied means for the scalar invariant model MM2 across PDI and non-PDI groups

Means	Model-implied means		Model-implied variances	
	PDI	non-PDI	PDI	non-PDI
Compensation	2.645	2.865	1.362	0.708
Man_Relationship	4.362	4.482	1.272	1.129
Inst_Practices	2.693	2.815	0.395	0.274

The results show that the PDI group seems to be generally less satisfied with their compensation, their relationship with their direct manager and with institutional practices when compared to the non-PDI group.

The maximum likelihood estimated covariances and correlations between the latent variables are shown in Table 8-12 for the scalar equivalent model MM2. At the 2CFA level the correlations between the three second-order latent variables are below 0.7 which implies that there is sufficient discrimination between the second-order concepts, therefore supporting discriminant validity. There is a moderate correlation between *Manager Relationship* and *Institutional Practices* for the PDI group in the sample (0.718), which means that the shared variance between these two concepts is 51.6% ($0.718 \times 0.718 \times 100$).

Chapter 8: Comprehensive model

Table 8-12: Maximum likelihood estimated covariances and correlations of the 2CFA Talent Retention model over PDI/non-PDI groups

Relationships			Covariances		Correlations	
			PDI	non-PDI	PDI	non-PDI
Compensation	<-->	Man_Relationship	0.648	0.527	0.493	0.589
Compensation	<-->	Inst_Practices	0.401	0.273	0.547	0.619
Man_Relationship	<-->	Inst_Practices	0.509	0.304	0.718	0.545

The squared multiple correlations and variances for the 2CFA Talent Retention model MM2 across gender are displayed in Table 8-13.

Table 8-13: Maximum likelihood estimated error variances and squared multiple correlations by PDI /non-PDI groups for the scalar invariant 2CFA Talent Retention model MM2

	Error variances		Squared multiple correlations		
	PDI	non-PDI		PDI	non-PDI
ex1	0.092	0.556	Financial	0.936	0.560
	0.589	1.048	Benefits	0.595	0.232
ex3	0.597	0.323	Recognition	0.669	0.770
ex4	0.182	0.101	Man_Support	0.875	0.918
ex5	0.148	0.176	Appraisal_Feedback	0.902	0.857
ex6	0.060	0.091	Inst_Leadership	0.869	0.751
ex7	0.182	0.135	Diversity_Respect	0.501	0.474
ex8	0.062	0.022	HR_Practices	0.766	0.874
ex9	0.088	0.044	Talent_Development	0.825	0.873
be1	1.042	1.257	B1	0.485	0.405
be2	0.922	0.884	B2	0.612	0.607
be3	0.644	0.675	B3	0.702	0.678
be4	1.138	0.911	B4	0.613	0.607
be5	0.894	1.058	B5	0.585	0.509
be6	1.161	1.396	B6	0.545	0.464
be7	0.812	0.756	B7	0.620	0.604
be8	0.880	0.894	B8	0.623	0.586
be9	0.884	0.834	B9	0.641	0.595
ce1	0.467	0.442	C1	0.757	0.736
ce2	0.500	0.393	C2	0.710	0.725
ce3	0.375	0.256	C3	0.818	0.847
ce4	0.833	0.505	C4	0.507	0.589
ce5	0.540	0.465	C5	0.740	0.736
ce6	0.720	0.621	C6	0.677	0.665
ce7	0.582	0.417	C7	0.720	0.745
ce8	0.338	0.305	C8	0.827	0.812
ce9	0.408	0.341	C9	0.805	0.801
e1	0.347	0.206	F1	0.435	0.463
e2	0.346	0.302	F2	0.501	0.433
e3	0.331	0.243	F3	0.480	0.455
e4	0.337	0.288	F4	0.446	0.384
e5	0.322	0.504	F5	0.455	0.261
e6	0.205	0.158	F6	0.641	0.618
e7	0.204	0.196	F7	0.618	0.543
e8	0.151	0.127	F8	0.751	0.742
e9	0.118	0.136	F9	0.764	0.694

Error variances			Squared multiple correlations		
	PDI	non-PDI		PDI	non-PDI
e10	0.142	0.096	F10	0.749	0.780
e11	0.261	0.242	F11	0.636	0.602
e12	0.168	0.145	F12	0.749	0.706
e13	0.205	0.197	F13	0.687	0.614
e14	0.508	0.337	F14	0.422	0.434

In the 2CFA Talent Retention model, all the SMC results are above 0.3 with the exception of item F5 which pertains to satisfaction with affirmative action in the non-PDI group. SMC results above 0.3 are required in order to retain an item as part of the scale (Beavers *et al.*, 2013:11). However, due to the importance of affirmative action in redressing the inequalities of the past in the South African context, this item should not be eliminated but perhaps just be reworded in order to still address this aspect and further develop additional items pertaining to affirmative action in future versions of the scale. The low SMC of item F5 may also be due to the very different views that the PDI group and non-PDI group have towards affirmative action. Examination of the estimated error variances reveal acceptable results.

The psychometric analysis of the comprehensive 2CFA Talent Retention model that was reported in section 8-2, has resulted in a finding that the comprehensive Talent Retention Scale yielded a satisfactory result, and that the convergent and discriminant validity seems to be reasonable for the scale. However, although measurement invariance was not strongly supported up to the level of scalar equivalence, the measurement invariance of the scale for PDI/non-PDI groups was not clearly established. It can therefore be concluded that measurement invariance was found across gender groups, but only moderate or marginally adequate measurement invariance was established across the PDI/non-PDI groups.

In section, 8-3 the second stage of assessing the nomological validity of the 2CFA Talent Retention model is addressed.

8.3 NOMOLOGICAL VALIDITY OF THE 2CFA TALENT RETENTION MODEL

A scale should be able to “correlate with a group of related constructs in a network” based on theoretical assumptions (Flynn & Percy, 2001:418). Thus the first stage in establishing nomological validity would be to see how the network of latent constructs or factors developed in the Talent Retention Scale relate to one another, and also to test how these factors related to another criterion variable, that did not form part of the scale development process. To this end, structural equation modelling using Multiple-Group (MG) Means and Covariance Structure Analysis (MACS) was used, following the method described by Strasheim (2014). Each factor was initially treated as a separate scale for developmental purposes (Flynn & Percy, 2001). The first part of Chapter 8 combines these factors into a comprehensive second-order model for talent retention. This part of Chapter 8 reports the results of a SEM model where a MG MACS analysis was conducted to assess the nomological validity of the 2CFA Talent Retention Scale.

At this stage of the establishment of nomological validity or criterion-related validity, which is defined as the “relationship between a measure and another independent measure” is considered (Hinkin, 1995:968). The scores from the scale being tested should be able to predict or correlate with a different scale that is theoretically related to the construct being measured (Field, 2009:784). The *Intention to Quit* scale (Cohen, 1993) was used as the independent measure and in the subsequent SEM model is abbreviated as ITQ. The SEM model used for the criterion-related validity assessment is displayed in Figure 8-2. It is expected that for criterion-related validity to hold, that each of the three second-order constructs *Compensation*, *Managerial Relationship* and *Institutional Practices* needs to be either negatively, or not related to ITQ, but the relationships will definitely not be positive. When this is the case, the argument for nomological validity of the proposed scale will hold.

Figure 8-2: SEM model relating the 2CFA Talent Retention model with Intention to Quit (ITQ)



The SEM model in Figure 8-2 was fitted to the entire sample and the overall model fit is displayed in Table 8-14.

Table 8-14: Overall SEM Model Fit for the model relating the 2CFA model to ITQ

Model	NPAR	CMIN	df	P	CMIN/df
Unconstrained	120	2330.132	545	0.000	4.275
Baseline Comparisons	IFI	TLI	CFI		
	0.930	0.918	0.929		
RMSEA	RMSEA	LO 90	HI 90	PCLOSE	
	0.053	0.051	0.056	0.006	

The results in Table 8-14 suggest acceptable fit with IFI, TLI and CFI above 0.90, and RMSEA in the region of 0.05. Although the CMIN/df ratio is more than 3, this could be explained by the large sample size. Therefore, for the entire sample, it can be assumed that the proposed Talent Retention Scale seems to be useful to predict ITQ, and the model fits the data adequately.

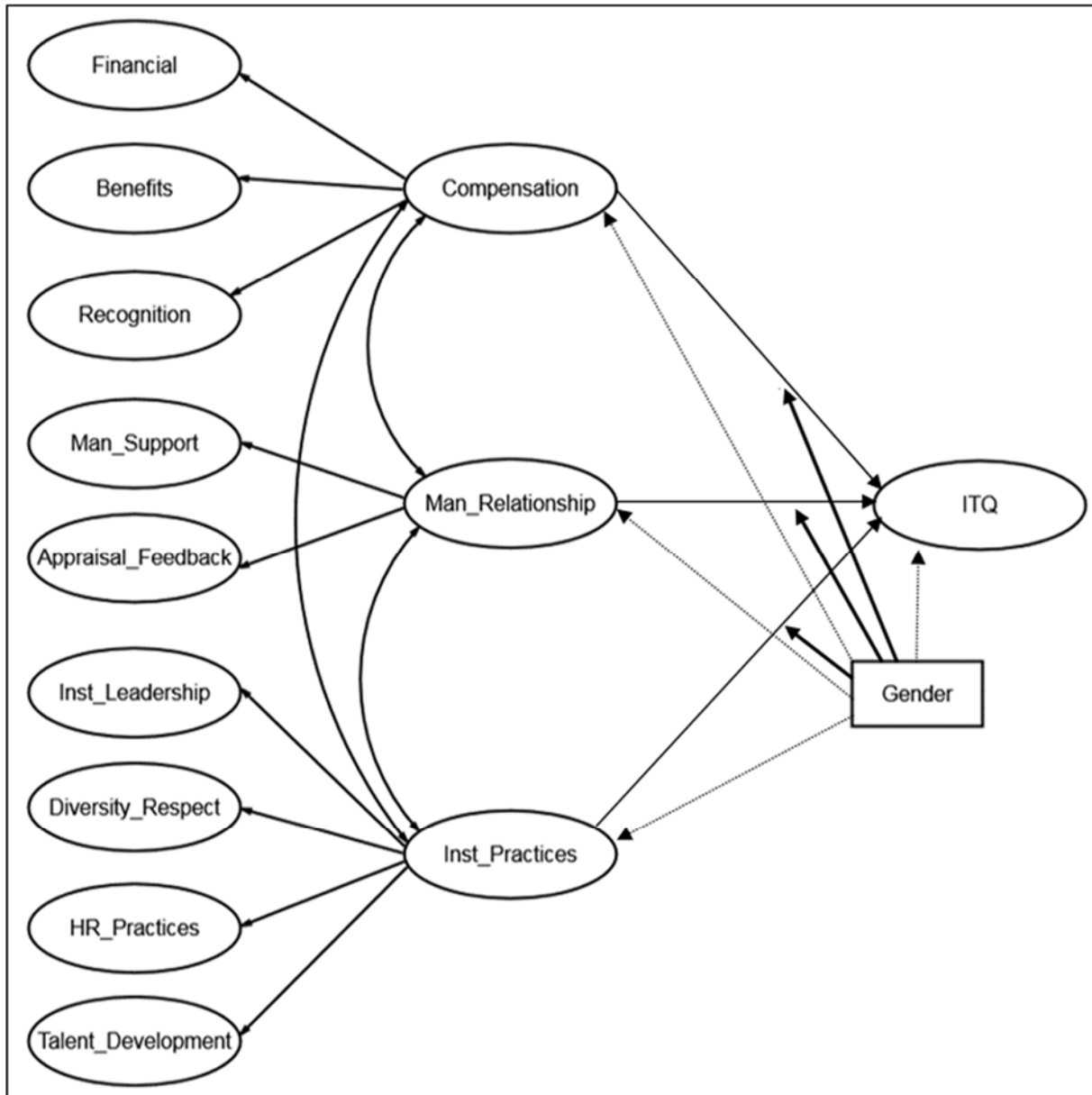
The SEM model in Figure 8-2 is further used to test whether gender (section 8.4) or the employment equity group, PDI or non-PDI, (section 8.5) exerts a moderating role on the relationship between the 2CFA Talent Retention model and ITQ, using the procedure described by Strasheim (2014).

8.4 AN EXAMINATION OF THE MODERATING ROLE OF GENDER ON THE RELATIONSHIP BETWEEN THE TALENT RETENTION MODEL AND ITQ

In section 8.3, tests for measurement invariance on the comprehensive 2CFA Talent Retention model were conducted across gender groups. This result is reported in section 8.2.2, where it was shown that model MM7 was a reasonable model that fitted the data very well. In model MM7, a model of the same form, with equal measurement weights, equal measurement intercepts, equal structural weights, equal structural intercepts at the first order latent variables, equal latent means and equal variances and covariances of the latent variables at the second order level was used as a base model, for the moderation analysis. In the moderation analysis, increasingly restrictive models are tested in a nested hierarchy that firstly leaves the means, intercepts and slopes to be freely estimated over groups. In the first model MIS1, the parameters that were freely estimated were the means of the second-order latent variables, the slopes between the three second-order constructs and ITQ, and the intercept of ITQ. In the all the models MIS1 to MIS12, the error variances as well as the structural residuals were freely estimated. The twelve MIS models were tested for each of the three relationships between *Compensation* and ITQ, *Manager Relationship* and ITQ as well as between *Institutional Practices* and

ITQ simultaneously. Each of these relationships were investigated for being moderated by gender, as shown in Figure 8-3.

Figure 8-3: Conceptual diagrams of the MIS models tested



The results of the twelve MIS models are reported in Table 8-15 while the nested model comparisons across gender groups are displayed in Table 8-16. The fit measures in Tables 8-15 and 8-16 suggest that model MIS2 is a plausible model.

Model MIS2 is a model in which the means across gender groups are constrained equally, the slopes are freely estimated which implies a moderating effect, and the

intercepts at ITQ are freely estimated for both males and females (see Strasheim, 2014). It seems therefore that gender moderates the relationship between the 2CFA Talent Retention model and ITQ.

Table 8-15: Model fit summary across gender

CMIN	NPAR	CMIN	df	P	CMIN/df	AIC
MIS1	172	3125.9	1158	0.000	2.699	3469.9
MIS2	169	3127.3	1161	0.000	2.694	3465.3
MIS3	171	3131.0	1159	0.000	2.701	3473.0
MIS4	168	3132.3	1162	0.000	2.696	3468.3
MIS5	169	3134.0	1161	0.000	2.699	3472.0
MIS6	166	3135.4	1164	0.000	2.694	3467.4
MIS7	168	3137.7	1162	0.000	2.700	3473.7
MIS8	165	3139.3	1165	0.000	2.695	3469.3
MIS9	166	3329.5	1164	0.000	2.860	3661.5
MIS10	163	3330.9	1167	0.000	2.854	3656.9
MIS11	165	3334.6	1165	0.000	2.862	3664.6
MIS12	162	3336.1	1168	0.000	2.856	3660.1
Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
MIS1	0.921	0.914	0.921	0.847	3502.0	-404.2
MIS2	0.922	0.914	0.921	0.849	3496.8	-412.0
MIS3	0.921	0.914	0.921	0.847	3504.9	-402.2
MIS4	0.921	0.914	0.921	0.849	3499.7	-409.9
MIS5	0.921	0.914	0.921	0.849	3503.5	-405.2
MIS6	0.921	0.914	0.921	0.851	3498.3	-413.0
MIS7	0.921	0.914	0.921	0.849	3505.1	-404.6
MIS8	0.921	0.914	0.921	0.851	3500.1	-412.1
MIS9	0.914	0.906	0.913	0.844	3692.5	-218.9
MIS10	0.914	0.906	0.913	0.846	3687.3	-226.6
MIS11	0.913	0.906	0.913	0.844	3695.4	-216.8
MIS12	0.913	0.906	0.913	0.846	3690.3	-224.5
RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
MIS1	0.039	0.037	0.041	1.000		
MIS2	0.039	0.037	0.041	1.000		
MIS3	0.039	0.037	0.041	1.000		
MIS4	0.039	0.037	0.041	1.000		
MIS5	0.039	0.037	0.041	1.000		
MIS6	0.039	0.037	0.041	1.000		
MIS7	0.039	0.037	0.041	1.000		
MIS8	0.039	0.037	0.041	1.000		
MIS9	0.041	0.039	0.042	1.000		
MIS10	0.041	0.039	0.042	1.000		
MIS11	0.041	0.039	0.042	1.000		
MIS12	0.041	0.039	0.042	1.000		

Table 8-16: Nested model comparisons across gender

Nested model	Model	df	CMIN	P
MIS1	Assuming model MIS1 to be correct:			
MIS2 - MIS1	MIS2	3	1.3	0.721
MIS3 - MIS1	MIS3	1	5.0	0.025
MIS4 - MIS1	MIS4	4	6.4	0.170
MIS5 - MIS1	MIS5	3	8.1	0.044
MIS6 - MIS1	MIS6	6	9.4	0.151
MIS7 - MIS1	MIS7	4	11.8	0.019
MIS8 - MIS1	MIS8	7	13.4	0.064
MIS9 - MIS1	MIS9	6	203.6	0.000
MIS10 - MIS1	MIS10	9	205.0	0.000
MIS11 - MIS1	MIS11	7	208.7	0.000
MIS12 - MIS1	MIS12	10	210.1	0.000
MIS2	Assuming model MIS2 to be correct:			
MIS4 - MIS2	MIS4	1	5.1	0.024
MIS6 - MIS2	MIS6	3	8.1	0.044
MIS8 - MIS2	MIS8	4	12.0	0.017
MIS10 - MIS2	MIS10	6	203.7	0.000
MIS12 - MIS2	MIS12	7	208.8	0.000
MIS3	Assuming model MIS3 to be correct:			
MIS4 - MIS3	MIS4	3	1.4	0.710
MIS7 - MIS3	MIS7	3	6.8	0.080
MIS8 - MIS3	MIS8	6	8.3	0.214
MIS11 - MIS3	MIS11	6	203.7	0.000
MIS12 - MIS3	MIS12	9	205.1	0.000
MIS4	Assuming model MIS4 to be correct:			
MIS8 - MIS3	MIS8	3	7.0	0.073
MIS12 - MIS3	MIS12	6	203.7	0.000
MIS5	Assuming model MIS5 to be correct:			
MIS6 - MIS5	MIS6	3	1.3	0.720
MIS7 - MIS5	MIS7	1	3.7	0.054
MIS8 - MIS5	MIS8	4	5.3	0.259
MIS9 - MIS5	MIS9	3	195.5	0.000
MIS10 - MIS5	MIS10	6	196.9	0.000
MIS11 - MIS5	MIS11	4	200.6	0.000
MIS12 - MIS5	MIS12	7	202.0	0.000
MIS6	Assuming model MIS6 to be correct:			
MIS8 - MIS6	MIS8	1	3.9	0.047
MIS10 - MIS6	MIS10	3	195.6	0.000
MIS12 - MIS6	MIS12	4	200.7	0.000
MIS7	Assuming model MIS7 to be correct:			
MIS8 - MIS7	MIS8	3	1.6	0.664
MIS11 - MIS7	MIS11	3	196.9	0.000
MIS12 - MIS7	MIS12	6	198.3	0.000
MIS8	Assuming model MIS8 to be correct:			
MIS12 - MIS8	MIS12	3	196.8	0.000
MIS9	Assuming model MIS9 to be correct:			
MIS10 - MIS9	MIS10	3	1.4	0.701
MIS11 - MIS9	MIS11	1	5.1	0.023
MIS12 - MIS9	MIS12	4	6.6	0.161
MIS10	Assuming model MIS10 to be correct:			
MIS12 - MIS10	MIS12	1	5.1	0.023
MIS11	Assuming model MIS11 to be correct:			
MIS12 - MIS11	MIS12	3	1.4	0.701

For the MIS2 model the IFI (0.922), TLI (0.914) and CFI (0.921) fit measures are all within the recommended range for good fit (Vandenberg & Lance, 2000:44). The RMSEA (0.039) is excellent compared to the 0.05 cut-off criterion. Despite the large sample size, the CMIN/df=2.7 is below 3, indicating good overall model fit (Hinkin, 1998:114). In the nested model comparisons in Table 8-16, it shows that model MIS2 is a suitable model, since the Chi-square difference between MIS2 and MIS1 (MIS2–MIS1) is not significant with $p=0.721$. Therefore, the model reveals non-significant differences across gender in model MIS2, and the MIS1 model is therefore not refuted as a plausible explanation of the observed covariance matrix.

In Table 8-17 the maximum likelihood estimated regression weights and intercepts across gender groups are displayed for the SEM model. The relationship between the various scales and ITQ are considered for statistical significance, the strength of the relationship and the direction of the relationship. The relationship between *Compensation* (the 9-item scale) is significant and negative with *Intention to Quit* for both males and females in the sample. The relationship is slightly stronger for females. Thus if satisfaction with *Compensation* is lower, the withdrawal intentions or *Intention to Quit* score of the employees becomes stronger. The regression weight between the *Manager Relationship* and ITQ scale is significant, and negative for females only and thus the stronger the score is, the lower the ITQ score for females in the sample. However, for males, this relationship is not significant. There is a negative relationship between satisfaction with *Institutional Practices* and ITQ, which is strongly significant for males in the sample and less so for females. Therefore males who are dissatisfied with *Institutional Practices* show a stronger *Intention to Quit*. The fact that there is a significant negative relationship for all three sub-scales with *Intention to Quit* as the outcome variable for females; and for two of the three sub-scales for males, lends further support for nomological validity, and demonstrates the moderating role of gender on the relationships between the sub-scales of the TRS and ITQ.

Table 8-17: ML estimated regression weights and intercepts across gender groups for MIS2

			Standardised regression weights		Unstandardised regression weights				Intercepts	
			Male	Female	Male		Female		Male	Female
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
ITQ	<---	Compensation	-0.249	-0.261	-0.367	0.002	-0.405	***	7.592	6.379
ITQ	<---	Man_Relationship	0.056	-0.123	0.080	0.506	-0.186	0.027		
ITQ	<---	Inst_Practices	-0.432	-0.114	-1.153	***	-0.319	0.062		
Financial	<---	Compensation	0.902	0.920	1.000		1.000		0.000	0.000
Benefits	<---	Compensation	0.701	0.704	0.770	***	0.770	***	1.130	1.130
Recognition	<---	Compensation	0.879	0.819	1.006	***	1.006	***	0.670	0.670
Man_Support	<---	Man_Relationship	0.943	0.938	1.000		1.000		0.000	0.000
Appraisal_Feedback	<---	Man_Relationship	0.941	0.945	1.010	***	1.010	***	-0.339	-0.339
Inst_Leadership	<---	Inst_Practices	0.908	0.910	1.000		1.000		0.000	0.000
Diversity_Respect	<---	Inst_Practices	0.710	0.715	0.692	***	0.692	***	0.931	0.931
HR_Practices	<---	Inst_Practices	0.886	0.909	0.750	***	0.750	***	0.782	0.782
Talent_Development	<---	Inst_Practices	0.886	0.928	1.037	***	1.037	***	-0.254	-0.254
G1	<---	ITQ	0.889	0.880	1.000		1.000		0.000	0.000
G2	<---	ITQ	0.757	0.768	0.874	***	0.874	***	-0.106	-0.106
G3	<---	ITQ	0.899	0.900	1.032	***	1.032	***	0.235	0.235
B8	<---	Financial	0.803	0.778	1.000		1.000		0.000	0.000
B7	<---	Financial	0.819	0.776	0.957	***	0.957	***	-0.190	-0.190
B6	<---	Financial	0.747	0.716	0.981	***	0.981	***	0.596	0.596
B5	<---	Financial	0.795	0.737	0.930	***	0.930	***	0.211	0.211
B1	<---	Financial	0.699	0.668	0.816	***	0.816	***	0.276	0.276
B2	<---	Benefits	0.772	0.771	1.000		1.000		0.000	0.000
B3	<---	Benefits	0.877	0.840	1.057	***	1.057	***	-0.398	-0.398
B4	<---	Recognition	0.753	0.797	1.000		1.000		0.000	0.000
B9	<---	Recognition	0.785	0.809	0.939	***	0.939	***	-0.235	-0.235
C1	<---	Man_Support	0.905	0.856	1.000		1.000		0.000	0.000

			Standardised regression weights		Unstandardised regression weights				Intercepts	
			Male	Female	Male		Female		Male	Female
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
C2	<---	Man_Support	0.864	0.841	0.914	***	0.914	***	0.619	0.619
C3	<---	Man_Support	0.923	0.907	1.070	***	1.070	***	-0.421	-0.421
C4	<---	Man_Support	0.697	0.730	0.751	***	0.751	***	0.960	0.960
C5	<---	Man_Support	0.850	0.861	1.018	***	1.018	***	-0.214	-0.214
C6	<---	Appraisal_Feedback	0.860	0.812	1.000		1.000		0.000	0.000
C7	<---	Appraisal_Feedback	0.882	0.851	1.003	***	1.003	***	0.009	0.009
C8	<---	Appraisal_Feedback	0.912	0.904	1.038	***	1.038	***	0.171	0.171
C9	<---	Appraisal_Feedback	0.899	0.894	1.057	***	1.057	***	0.018	0.018
F8	<---	Inst_Leadership	0.841	0.877	1.000		1.000		0.000	0.000
F9	<---	Inst_Leadership	0.844	0.872	0.918	***	0.918	***	0.264	0.264
F10	<---	Inst_Leadership	0.844	0.879	0.952	***	0.952	***	0.095	0.095
F11	<---	Inst_Leadership	0.790	0.792	0.999	***	0.999	***	0.005	0.005
F6	<---	Diversity_Respect	0.769	0.805	1.000		1.000		0.000	0.000
F7	<---	Diversity_Respect	0.764	0.786	0.960	***	0.960	***	0.254	0.254
F1	<---	HR_Practices	0.677	0.668	1.000		1.000		0.000	0.000
F2	<---	HR_Practices	0.757	0.681	1.138	***	1.138	***	-0.662	-0.662
F3	<---	HR_Practices	0.724	0.689	1.068	***	1.068	***	-0.553	-0.553
F4	<---	HR_Practices	0.663	0.649	0.987	***	0.987	***	-0.189	-0.189
F5	<---	HR_Practices	0.590	0.638	0.983	***	0.983	***	-0.173	-0.173
F12	<---	Talent_Development	0.859	0.861	1.000		1.000		0.000	0.000
F13	<---	Talent_Development	0.845	0.806	0.946	***	0.946	***	0.151	0.151
F14	<---	Talent_Development	0.667	0.653	0.857	***	0.857	***	0.276	0.276

A comparison of the model-implied means across gender for the three scales, obtained from the SEM model is shown in Table 8-18.

Table 8-18: Model-implied means across gender (as estimated in Model MIS2)

	Means		Variances	
	Male	Female	Male	Female
Compensation	2.707	2.707	1.184	1.184
Man_Relationship	4.397	4.397	1.248	1.248
Inst_Practices	2.728	2.728	0.361	0.361

In Model MIS2 the means, as well as the variances of the latent variables are constrained equal and therefore in model MIS 2, it can be assumed that on average males and females hold similar views towards all three subscales at the mean level. However, at the slope level and intercept level, model MIS2 suggests differences as reported in Table 8-20.

The covariances and correlations between the three second-order latent variables representing each of the three sub-scales in the SEM model were constrained equal in the moderation analysis across gender groups, and these are shown in Table 8-19.

Table 8-19: Estimated covariances and correlations across gender based on model MIS2

			Covariances		Correlations	
			Male	Female	Male	Female
Compensation	<-->	Man_Relationship	0.631	0.631	0.519	0.519
Compensation	<-->	Inst_Practices	0.382	0.382	0.584	0.584
Man_Relationship	<-->	Inst_Practices	0.448	0.448	0.668	0.668

Since all these correlations are below 0.7, it can be inferred that the scales measure different constructs and this provides support for discriminant validity.

In Table 8-20 the variances and squared multiple correlations are provided. SMC results for the items range between 0.308 for item F5 (male group) which is an item

pertaining to affirmative action and 0.851 for item C3 (male group) “*my line manager has my best interests at heart*”.

Table 8-20: Estimated error variances and squared multiple correlations by gender for model MIS2

	Variances			Squared Multiple Correlations	
	Male	Female		Male	Female
ey1	1.714	2.323	ITQ	0.331	0.183
ex1	0.264	0.212	Financial	0.817	0.848
ex2	0.726	0.712	Benefits	0.491	0.496
ex3	0.355	0.589	Recognition	0.771	0.670
ex4	0.156	0.170	Man_Support	0.889	0.880
ex5	0.165	0.152	Appraisal_Feedback	0.886	0.894
ex6	0.077	0.075	Inst_Leadership	0.824	0.828
ex7	0.170	0.165	Diversity_Respect	0.504	0.511
ex8	0.056	0.043	HR_Practices	0.785	0.826
ex9	0.106	0.063	Talent_Development	0.785	0.861
e1	0.307	0.305	F1	0.458	0.446
e2	0.249	0.369	F2	0.573	0.463
e3	0.267	0.311	F3	0.525	0.474
e4	0.320	0.329	F4	0.440	0.421
e5	0.468	0.347	F5	0.348	0.407
e6	0.237	0.183	F6	0.591	0.649
e7	0.226	0.193	F7	0.583	0.618
e8	0.182	0.130	F8	0.707	0.770
e9	0.149	0.115	F9	0.713	0.761
e10	0.161	0.116	F10	0.712	0.773
e11	0.264	0.258	F11	0.624	0.627
e12	0.176	0.157	F12	0.738	0.741
e13	0.177	0.217	F13	0.714	0.650
e14	0.452	0.445	F14	0.445	0.426
be1	1.010	1.153	B1	0.489	0.447
be2	0.966	0.965	B2	0.596	0.594
be3	0.477	0.660	B3	0.770	0.705
be4	1.187	1.023	B4	0.566	0.635
be5	0.732	1.020	B5	0.632	0.543
be6	1.109	1.278	B6	0.557	0.512
be7	0.656	0.843	B7	0.669	0.603
be8	0.802	0.913	B8	0.644	0.604
be9	0.854	0.831	B9	0.616	0.655
ce1	0.310	0.516	C1	0.819	0.733
ce2	0.397	0.490	C2	0.747	0.708
ce3	0.281	0.350	C3	0.851	0.823
ce4	0.835	0.698	C4	0.486	0.533
ce5	0.557	0.511	C5	0.723	0.742
ce6	0.509	0.737	C6	0.739	0.659
ce7	0.414	0.545	C7	0.778	0.725
ce8	0.315	0.341	C8	0.831	0.818
ce9	0.383	0.399	C9	0.807	0.799
ge1	0.683	0.831	G1	0.790	0.774
ge2	1.456	1.509	G2	0.574	0.590
ge3	0.649	0.711	G3	0.808	0.810

In Table 8-20 it emerges that there is an additional distinction between males and females when model MIS2 is considered. The percentage of variability that can be explained for males (SMC=0.331) is 33.1%; whereas the variability explained for females is 18.3%. This results suggest that the relationships between the TRS and the ITQ does not fully account for retention factors important to females. Such aspects may be related to additional flexibility, school holidays, and other aspects that were not part of the TRS.

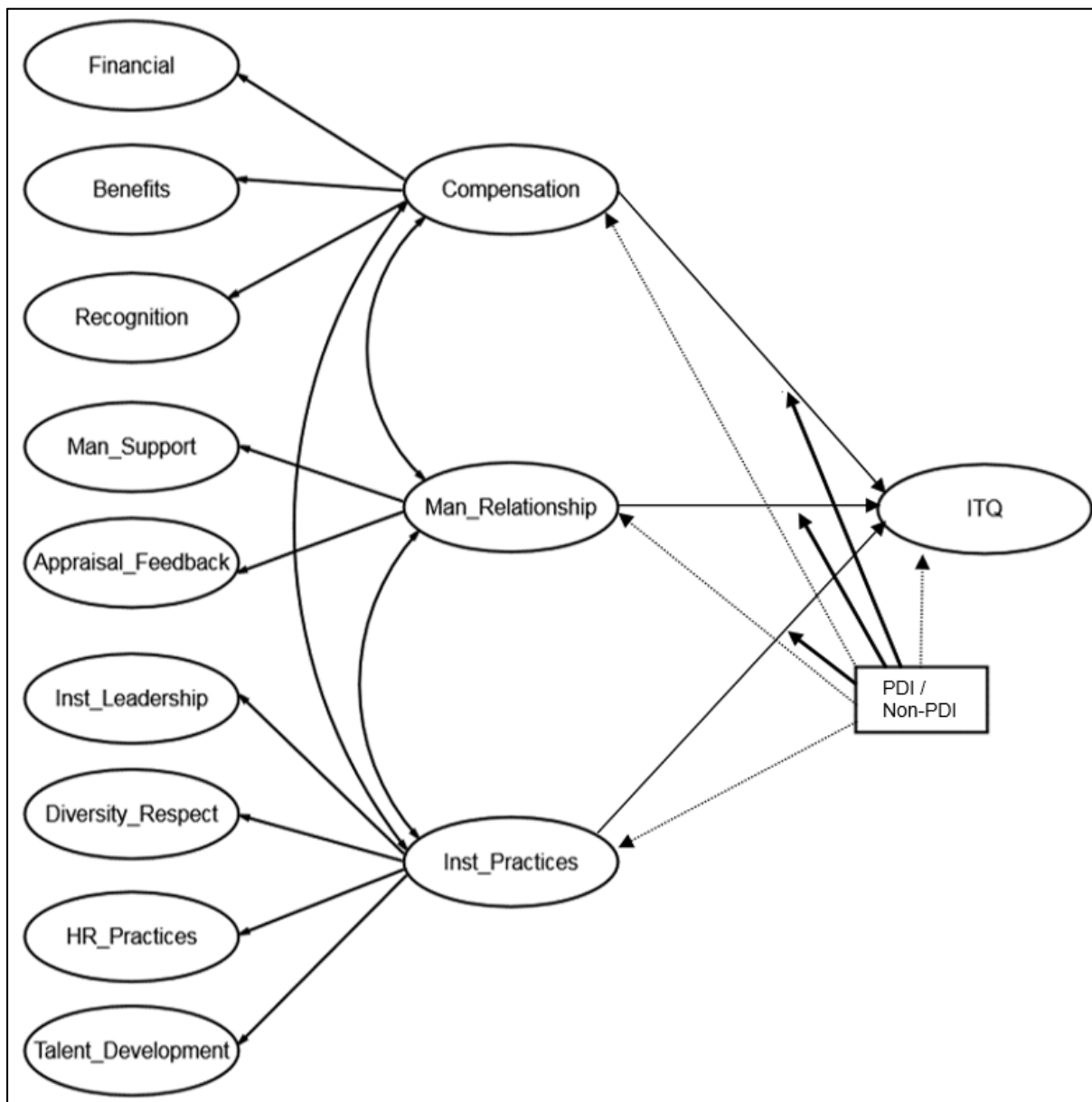
In summary, the SEM model tested across gender groups produced good fit measure results and acceptable invariance constraints were reasonable to impose. The results lend support for nomological validity of the Talent Retention Scale due to the significant negative relationship between *Intention to Quit* as an independent measure and the three sub-scales of the Talent Retention Scale for females and for two of the three sub-scales for males. Gender moderates the relationship between the 2CFA Talent Retention Scale and ITQ. In addition, the finding that the Estimates of the Standardised Regression weights at an item level are all at least above 0.5 and ideally 0.7 or higher (Hair *et al.*, 2010:688) can be regarded as support for convergent validity. Support for discriminant validity was provided in Table 8-19 as the scales appear to measure different constructs and the correlations are below 0.7.

In the next section, the results of examining the moderating role of the employment equity group on the relationships between the higher-order constructs of the 2CFA Talent Retention model and ITQ are reported.

8.5 AN EXAMINATION OF THE MODERATING ROLE OF EMPLOYMENT EQUITY GROUPS ON THE RELATIONSHIP BETWEEN THE TALENT RETENTION MODEL AND ITQ

Following the same method as described in section 8.4, the relationships between Compensation and ITQ, Management Relationship and ITQ as well as Institutional Practices and ITQ were investigated for being moderated by PDI/non-PDI as shown in Figure 8-4.

Figure 8-4: Conceptual diagram of the MIS models tested (PDI/non-PDI)



The results of the twelve MIS models are reported in Table 8-21 while the nested model comparisons across PDI/non-PDI groups are displayed in Table 8-22. The IFI, TLI and CFI fit measures for the MIS1 model are within the recommended range for good fit (Vandenberg & Lance, 2000:44). The RMSEA is small and good considering the 0.05 cut-off criterion (Schermelleh-Engel, 2003). Despite the large sample size, the CMIN/df ratio is below 3 which is traditionally indicative of good overall model fit (Hinkin, 1998:114).

Table 8-21: Model fit summary of the moderation analysis across PDI/non-PDI groups

CMIN	NPAR	CMIN	Df	P	CMIN/df	AIC
MIS1	172	3431.6	1158	0.000	2.963	3775.6
MIS2	169	3456.0	1161	0.000	2.977	3794.0
MIS3	171	3437.6	1159	0.000	2.966	3779.6
MIS4	168	3461.7	1162	0.000	2.979	3797.7
MIS5	169	3447.1	1161	0.000	2.969	3785.1
MIS6	166	3471.4	1164	0.000	2.982	3803.4
MIS7	168	3454.9	1162	0.000	2.973	3790.9
MIS8	165	3480.6	1165	0.000	2.988	3810.6
MIS9	166	3635.0	1164	0.000	3.123	3967.0
MIS10	163	3659.4	1167	0.000	3.136	3985.4
MIS11	165	3652.5	1165	0.000	3.135	3982.5
MIS12	162	3676.9	1168	0.000	3.148	4000.9
Baseline Comparisons	IFI	TLI	CFI	PCFI	BCC	BIC
MIS1	0.911	0.903	0.911	0.837	3802.9	-111.8
MIS2	0.910	0.902	0.910	0.839	3820.8	-96.6
MIS3	0.911	0.903	0.911	0.838	3806.8	-108.9
MIS4	0.910	0.902	0.910	0.839	3824.4	-93.9
MIS5	0.911	0.903	0.910	0.839	3812.0	-105.5
MIS6	0.910	0.902	0.910	0.840	3829.8	-90.4
MIS7	0.910	0.903	0.910	0.839	3817.6	-100.7
MIS8	0.910	0.902	0.909	0.841	3836.8	-84.2
MIS9	0.904	0.895	0.903	0.834	3993.4	73.3
MIS10	0.903	0.895	0.902	0.836	4011.3	88.5
MIS11	0.903	0.895	0.903	0.834	4008.7	87.7
MIS12	0.902	0.894	0.902	0.836	4026.7	102.9
RMSEA	RMSEA	LO 90	HI 90	PCLOSE		
MIS1	0.041	0.040	0.043	1.000		
MIS2	0.042	0.040	0.043	1.000		
MIS3	0.041	0.040	0.043	1.000		
MIS4	0.042	0.040	0.043	1.000		
MIS5	0.041	0.040	0.043	1.000		
MIS6	0.042	0.040	0.043	1.000		
MIS7	0.041	0.040	0.043	1.000		
MIS8	0.042	0.040	0.043	1.000		
MIS9	0.043	0.041	0.045	1.000		
MIS10	0.043	0.042	0.045	1.000		
MIS11	0.043	0.042	0.045	1.000		
MIS12	0.043	0.042	0.045	1.000		

The nested model comparisons in Table 8-22, assuming the MIS1 model to be correct, reveal statistically significant lack of fit, when more constraints are imposed on the model over and above those in model MIS1.

Table 8-22: Nested model comparisons across PDI/non-PDI groups

Model	df	CMIN	P
Assuming model MIS1 to be correct:			
MIS2	3	24.4	0.000
MIS3	1	6.0	0.014
MIS4	4	30.1	0.000
MIS5	3	15.5	0.001
MIS6	6	39.8	0.000
MIS7	4	23.3	0.000
MIS8	7	49.0	0.000
MIS9	6	203.4	0.000
MIS10	9	227.8	0.000
MIS11	7	220.9	0.000
MIS12	10	245.3	0.000
Assuming model MIS2 to be correct:			
MIS4	1	5.8	0.016
MIS6	3	15.4	0.001
MIS8	4	24.6	0.000
MIS10	6	203.4	0.000
MIS12	7	220.9	0.000
Assuming model MIS3 to be correct:			
MIS4	3	24.1	0.000
MIS7	3	17.3	0.001
MIS8	6	43.0	0.000
MIS11	6	214.9	0.000
MIS12	9	239.3	0.000
Assuming model MIS4 to be correct:			
MIS8	3	18.9	0.000
MIS12	6	215.2	0.000
Assuming model MIS5 to be correct:			
MIS6	3	24.3	0.000
MIS7	1	7.8	0.005
MIS8	4	33.5	0.000
MIS9	3	187.9	0.000
MIS10	6	212.3	0.000
MIS11	4	205.4	0.000
MIS12	7	229.8	0.000
Assuming model MIS6 to be correct:			
MIS8	1	9.2	0.002
MIS10	3	188.0	0.000
MIS12	4	205.5	0.000
Assuming model MIS7 to be correct:			
MIS8	3	25.7	0.000
MIS11	3	197.6	0.000
MIS12	6	222.0	0.000
Assuming model MIS8 to be correct:			
MIS12	3	196.3	0.000
Assuming model MIS9 to be correct:			
MIS10	3	24.4	0.000
MIS11	1	17.5	0.000
MIS12	4	41.9	0.000
Assuming model MIS10 to be correct:			
MIS12	1	17.5	0.000
Assuming model MIS11 to be correct:			
MIS12	3	24.4	0.000

Therefore, for the moderation analysis, model MIS1 seems to offer the most plausible model that relates the TRS to the ITQ measure.

In Table 8-23 the maximum likelihood estimated regression weights and intercepts across PDI/non-PDI employment equity groups are displayed for the SEM model, using the MIS1 model constraints. The relationship between the various scales and ITQ are considered for statistical significance, the strength of the relationship and the direction of the relationship. The correlations between ITQ and the three sub-scales are significant and negative as would be expected theoretically. *Compensation* (the 9-item scale) shows a significant and negative relationship with ITQ for both the PDI and non-PDI groups in the sample. Thus if satisfaction with *Compensation* is lower, the withdrawal intentions or *Intention to Quit* score of the employees becomes higher. The regression weights between ITQ and the *Manager Relationship* scale are not significant. There is a negative relationship between *Institutional Practices* and ITQ, which is highly significant for the non-PDI group in the sample and less so for the PDI group. Therefore employees in the non-PDI group who are dissatisfied with *Institutional Practices* show a stronger *Intention to Quit*. The fact that there is a significant negative relationship for two of the three sub-scales with *Intention to Quit* as an independent measure lends support for concurrent criterion validity.

The estimates of the standardised regression weights at an item level are all at least above 0.5 and ideally 0.7 or higher (Hair *et al.*, 2010:688). These results can be regarded as supporting evidence for convergent validity.

Table 8-23: ML estimated regression weights and intercepts across PDI and non-PDI groups for model MIS1

			Standardised regression weights		Unstandardised regression weights				Intercepts	
			PDI	non-PDI	PDI		non-PDI		PDI	non-PDI
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
ITQ	<---	Compensation	-0.194	-0.368	-0.288	***	-0.601	***	6.397	7.790
ITQ	<---	Man_Relationship	-0.094	-0.121	-0.137	0.112	-0.194	0.090		
ITQ	<---	Inst_Practices	-0.164	-0.213	-0.445	0.011	-0.637	0.006		
Financial	<---	Compensation	0.942	0.887	1.000		1.000		0.000	0.000
Benefits	<---	Compensation	0.737	0.661	0.779	***	0.779	***	1.078	1.078
Recognition	<---	Compensation	0.823	0.824	0.982	***	0.982	***	0.730	0.730
Man_Support	<---	Man_Relationship	0.937	0.946	1.000		1.000		0.000	0.000
Appraisal_Feedback	<---	Man_Relationship	0.943	0.950	1.020	***	1.020	***	-0.384	-0.384
Inst_Leadership	<---	Inst_Practices	0.919	0.893	1.000		1.000		0.000	0.000
Diversity_Respect	<---	Inst_Practices	0.689	0.738	0.683	***	0.683	***	0.962	0.962
HR_Practices	<---	Inst_Practices	0.872	0.943	0.736	***	0.736	***	0.826	0.826
Talent_Development	<---	Inst_Practices	0.904	0.946	1.042	***	1.042	***	-0.271	-0.271
F8	<---	Inst_Leadership	0.856	0.881	1.000		1.000		0.000	0.000
F9	<---	Inst_Leadership	0.866	0.858	0.920	***	0.920	***	0.259	0.259
F10	<---	Inst_Leadership	0.856	0.900	0.964	***	0.964	***	0.065	0.065
F11	<---	Inst_Leadership	0.783	0.803	1.001	***	1.001	***	0.002	0.002
F6	<---	Diversity_Respect	0.790	0.805	1.000		1.000		0.000	0.000
F7	<---	Diversity_Respect	0.782	0.770	0.962	***	0.962	***	0.240	0.240
F1	<---	HR_Practices	0.647	0.713	1.000		1.000		-0.681	-0.681
F2	<---	HR_Practices	0.697	0.694	1.143	***	1.143	***	-0.578	-0.578
F3	<---	HR_Practices	0.682	0.710	1.073	***	1.073	***	0.000	0.000
F4	<---	HR_Practices	0.655	0.654	1.006	***	1.006	***	-0.248	-0.248
F5	<---	HR_Practices	0.663	0.547	1.004	***	1.004	***	-0.238	-0.238
F12	<---	Talent_Development	0.857	0.864	1.000		1.000		0.000	0.000

			Standardised regression weights		Unstandardised regression weights				Intercepts	
			PDI	non-PDI	PDI		non-PDI		PDI	non-PDI
			Estimate	Estimate	Estimate	P	Estimate	P	Estimate	Estimate
F13	<---	Talent_Development	0.819	0.812	0.947	***	0.947	***	0.150	0.150
F14	<---	Talent_Development	0.636	0.693	0.859	***	0.859	***	0.270	0.270
C6	<---	Appraisal_Feedback	0.816	0.834	1.000		1.000		0.000	0.000
C7	<---	Appraisal_Feedback	0.843	0.879	0.995	***	0.995	***	0.048	0.048
C8	<---	Appraisal_Feedback	0.904	0.911	1.032	***	1.032	***	0.197	0.197
C9	<---	Appraisal_Feedback	0.891	0.905	1.053	***	1.053	***	0.029	0.029
C1	<---	Man_Support	0.865	0.870	1.000		1.000		0.000	0.000
C2	<---	Man_Support	0.838	0.864	0.919	***	0.919	***	0.597	0.597
C3	<---	Man_Support	0.900	0.927	1.074	***	1.074	***	-0.445	-0.445
C4	<---	Man_Support	0.705	0.785	0.768	***	0.768	***	0.868	0.868
C5	<---	Man_Support	0.856	0.869	1.028	***	1.028	***	-0.262	-0.262
B4	<---	Recognition	0.771	0.803	1.000		1.000		0.000	0.000
B9	<---	Recognition	0.791	0.801	0.938	***	0.938	***	-0.250	-0.250
B2	<---	Benefits	0.763	0.792	1.000		1.000		0.000	0.000
B3	<---	Benefits	0.838	0.869	1.052	***	1.052	***	-0.375	-0.375
B8	<---	Financial	0.775	0.783	1.000		1.000		0.000	0.000
B7	<---	Financial	0.775	0.798	0.958	***	0.958	***	-0.205	-0.205
B6	<---	Financial	0.725	0.717	0.986	***	0.986	***	0.570	0.570
B5	<---	Financial	0.753	0.748	0.939	***	0.939	***	0.173	0.173
B1	<---	Financial	0.682	0.676	0.829	***	0.829	***	0.238	0.238
G1	<---	ITQ	0.848	0.937	1.000		1.000		0.000	0.000
G2	<---	ITQ	0.754	0.788	0.874	***	0.874	***	-0.141	-0.141
G3	<---	ITQ	0.889	0.931	1.037	***	1.037	***	0.159	0.159

The estimated model-implied means and variances across PDI/non-PDI for the three scales obtained from the SEM model, specifically MIS1, is shown in Table 8-24.

Table 8-24: Model-implied means and variances across PDI/non-PDI

Means	Means		Variances	
	PDI	non-PDI	PDI	non-PDI
Compensation	2.633	2.909	1.176	1.176
Man_Relationship	4.370	4.468	1.222	1.222
Inst_Practices	2.678	2.848	0.351	0.351

The PDI group has a lower mean score than the non-PDI group on all three scales which implies less satisfaction with *Compensation* practices; lower satisfaction with the *Manager Relationship*; as well as lower satisfaction with *Institutional Practices* for previous disadvantaged individuals. However, the overall higher score for *Manager Relationship* still reveals an overall positive relationship with their direct line manager.

The model implied estimated covariance and correlations, which were equally constrained in model MIS1, between the sub-scales following the SEM analysis across PDI/non-PDI groups are reported in Table 8-25:

Table 8-25: Estimated covariances and correlations across PDI/non-PDI groups

	Covariances		Correlations	
	PDI	non-PDI	PDI	non-PDI
Compensation <--> Man_Relationship	0.607	0.607	0.507	0.507
Compensation <--> Inst_Practices	0.362	0.362	0.564	0.564
Man_Relationship <--> Inst_Practices	0.439	0.439	0.670	0.670

All the correlations are below 0.7 which suggest that across employment equity groups, it can be reasonably assumed that the three sub-scales measure different or distinctive constructs, and the interrelationships between these constructs can be

assumed to be similar across PDI and non-PDI groups. These results lend further support for the discriminant validity of the constructs in the TRS.

In Table 8-26 the estimated error variances and squared multiple correlations across PDI/non-PDI groups are presented.

Table 8-26 Variances and squared multiple correlations across PDI/non-PDI groups

	Estimated Variances			Squared Multiple Correlations	
	PDI	non-PDI		PDI	non-PDI
ey1	2.207	1.994	ITQ	0.148	0.364
ex1	0.148	0.317	Financial	0.888	0.787
ex2	0.601	0.919	Benefits	0.543	0.437
ex3	0.540	0.538	Recognition	0.677	0.678
ex4	0.170	0.145	Man_Support	0.878	0.894
ex5	0.158	0.137	Appraisal_Feedback	0.890	0.903
ex6	0.065	0.089	Inst_Leadership	0.844	0.798
ex7	0.181	0.137	Diversity_Respect	0.474	0.544
ex8	0.060	0.024	HR_Practices	0.760	0.890
ex9	0.085	0.045	Talent_Development	0.817	0.895
e1	0.347	0.207	B1	0.465	0.456
e2	0.346	0.301	B2	0.582	0.628
e3	0.330	0.242	B3	0.702	0.756
e4	0.337	0.289	B4	0.595	0.644
e5	0.322	0.504	B5	0.567	0.559
e6	0.207	0.163	B6	0.525	0.514
e7	0.202	0.191	B7	0.601	0.637
e8	0.151	0.127	B8	0.601	0.613
e9	0.118	0.134	B9	0.625	0.641
e10	0.141	0.096	C1	0.749	0.756
e11	0.263	0.243	C2	0.701	0.747
e12	0.168	0.144	C3	0.811	0.859
e13	0.206	0.197	C4	0.497	0.616
e14	0.507	0.340	C5	0.732	0.756
ce1	0.467	0.441	C6	0.666	0.695
ce2	0.500	0.390	C7	0.710	0.772
ce3	0.375	0.260	C8	0.818	0.830
ce4	0.833	0.503	C9	0.794	0.819
ce5	0.539	0.466	F1	0.419	0.508
ce6	0.716	0.617	F2	0.485	0.481
ce7	0.578	0.412	F3	0.466	0.504
ce8	0.340	0.308	F4	0.429	0.428
ce9	0.411	0.345	F5	0.439	0.299
be1	1.048	1.222	F6	0.624	0.649
be2	0.947	0.968	F7	0.612	0.592
be3	0.618	0.585	F8	0.733	0.775
be4	1.139	0.922	F9	0.750	0.735
be5	0.892	1.038	F10	0.733	0.810
be6	1.163	1.373	F11	0.613	0.644
be7	0.807	0.782	F12	0.735	0.747
be8	0.880	0.945	F13	0.670	0.660
be9	0.882	0.823	F14	0.404	0.481
ge1	1.014	0.435	G1	0.719	0.878
ge2	1.499	1.464	G2	0.569	0.621
ge3	0.737	0.519	G3	0.791	0.867

The SMC results for the items range between 0.299 for item F5 (non-PDI group) which is an item relating to satisfaction with affirmative action and 0.878 for item G1 (non-PDI group) which is an item on the Intention to Quit scale, “*I think a lot about leaving the organisation*”. The SMC results for ITQ for the non-PDI group explains a larger percentage of the variability in the model, compared to the PDI group which only explains 14.8% of the variability in the model. It seems therefore that there may be additional talent retention matters that were not sufficiently represented for the PDI group in the model.

In summary, the SEM model tested across PDI/non-PDI groups produced moderate to good fit measure results, although invariance was not established due to significant differences between the groups found in the nested model comparisons. The results lend support for nomological validity of the Talent Retention Scale due to the significant negative relationship between *Intention to Quit* as an independent measure and two of the three sub-scales of the Talent Retention Scale (*Compensation* and *Institutional Practices*). In addition, the finding that the estimates of the standardised regression weights are higher than 0.7 (Hair *et al.*, 2010:688) can be regarded as support for convergent validity. Support for discriminant validity was provided in Table 8-25 as the scales appear to measure different constructs and the correlations are below 0.7 (Garson, 2011).

When the model implied means are considered, the PDI group is generally less satisfied with *Compensation and Recognition*; *Manager Relationship* and *Institutional Practices* than the PDI group (Table 8-24). However the effects of *Compensation and Recognition*, *Manager Relationship* and *Institutional Practices* are significantly different for the PDI group and the non-PDI group on ITQ. These factors have less of an impact on ITQ for the PDI group and more of an impact on the non-PDI group as seen in the amount of variability explained for each group with ITQ (Table 8-26), and the relationships between the sub-scales and ITQ are smaller for the non-PDI group than for the PDI group.

8.6 SUMMARY OF OVERALL MEASUREMENT SCALE MODEL

The established scale measuring withdrawal intentions (Cohen, 1993) was named *Intention to Quit* in this study and descriptive statistics, CFA, reliability statistics and invariance testing across gender and employment equity groups were conducted for the general education sample, and the results for each sub-scale were reported in Chapter 7.

Chapter 8 explored the plausibility of a comprehensive second-order Talent Retention Scale, and a thorough investigation of the psychometric properties of the three sub-scales, using multiple group second-order confirmatory factor analysis. Subsequently, the nomological validity was assessed using the comprehensive Talent Retention Scale, and by modelling the TRS as antecedent of the outcome variable *Intention to Quit*. Specifically, the antecedent variables at the first order level were:

- Financial, Benefits, Recognition (as part of Compensation and Recognition)
- Manager Support, Appraisal and Feedback (as part of *Manager Relationship*)
- Institutional Leadership, Diversity and Respect, HR Practices, Talent Development (as part of Institutional Practices).

An overall structural and measurement model for all three measurement scales that make up the Talent Retention Scale was constructed using 2CFA and SEM. The overall model lends support for nomological validity, convergent and discriminant validity. The scale and factors related to each other in a theoretically expected manner which supports the first part of nomological validity as described by Flynn & Percy (2001). The items also loaded strongly onto the scale factors, and the factors loaded onto the sub-scales. In addition, a SEM model was constructed with *Intention to Quit* as an independent measure. The results showed that the Talent Retention Scale (Compensation and Recognition, Manager Relationship and Institutional Practices) showed a significant negative relationships with *Intention to Quit*. Therefore, for the entire sample, it can be assumed that the proposed Talent

Retention Scale seems to be useful to predict ITQ, and the model fits the data adequately.

Sections 8.4 and 8.5 reported the findings of the possible moderating roles of gender or PDI/non-PDI groups on the relationships between the 2CFA Talent Retention Scale with ITQ. Gender was found to moderate the relationship between the 2CFA Talent Retention Scale and ITQ. The results lend support for nomological validity of the Talent Retention Scale due to the significant negative relationship between Intention to Quit as an independent measure and the three sub-scales of the Talent Retention Scale for females and for two of the sub-scales for males. With regards to the moderating effect of EE-group on the relationship between the factors and ITQ, the effects of *Compensation and Recognition*, *Manager Relationship* and *Institutional Practices* are significantly different for the PDI group and the non-PDI group on ITQ.

CHAPTER 9: DISCUSSION OF RESULTS OF GDE STUDY

The GDE results are reported in Chapters 6 to 8. In this chapter, the results are firstly discussed for the demographic and contextual variables. This is followed by a discussion of the results of each of the sub-scales of the Talent Retention Scale including the corresponding links between the items of the three sub-scales that are part of the Talent Retention Scale, and the open-ended questions. This is followed by a discussion of the results for *Intention to Quit* as it pertains to the GDE sample. The final discussion centres on the results for *job search* and *most likely reasons to leave*.

9.1 DEMOGRAPHIC AND CONTEXTUAL VARIABLES

The GDE acknowledges that it faces resource constraints in the “area of attracting and retaining scarce skills in mathematics, science and technology teachers in rural and township locations” (GDE, 2012: 155). Gauteng as a province has the highest growth in population due to ongoing migration to the province with 1.8 million learners and a total of 52 055 educators recorded in 2011 in Public Ordinary Schools. (GDE, 2012: 120).

Gauteng East district is one of 15 school districts in Gauteng Province and historically disadvantaged schools comprise an estimated 76% of current schools in this district. Grade 12 pass rates in Gauteng East for the 2010 and 2011 years ranged from 45% at some schools to 100% at the highest with an average of 78%. (Pienaar & McKay, 2014:110).

The respondents sampled have some similarities with the Gauteng Department of Education’s summary of its population. The gender ratio in the GDE was 71 females to 29 males (GDE, 2012:47) while in the current sample from Gauteng East it was 74 females to 26 males. The PDI group (Black, Coloured and Indian employees) was the largest group in the sample and comprised 763 respondents or 68% of the sample. Although current race data for the educators in Gauteng was not readily

available, other research has identified that teachers in South Africa were composed of a larger share of females and black workers when compared to the general workforce estimating an average of 69% African and 71% females (van der Berg & Burger, 2010:2016). In this study, 809 (73.3%) educators participated; heads of department made up 17.5% of the sample (201 respondents) while 93 deputy principals and principals participated (8.4% of sample) and 43 respondents declined to provide an educational job title. The majority of respondents were experienced teachers as they had been at their current schools for more than six years (63.8%). Research comparing teachers to the broader labour force identified that teachers were usually older persons who had worked for the same employer for much longer than the average South African worker, estimating an average of 12.4 years (van der Berg & Burger, 2010:2016).

The majority of respondents (90%) were permanent employees with 10% being temporary while fixed-term contracts only made up 0.4% of the sample. Prior research in education in Gauteng found that the higher the percentage of temporary educators employed at a school, the lower the achievement of pupils in the matriculation examinations at that school (Fleisch, 2004). The average percentage of temporary teachers in the Fleisch (2004) study was 7.5%. For confidentiality reasons, educators were not linked to specific schools so the proportion of temporary educators per school was not tracked although it raises questions as to whether the 10% temporary teachers in Gauteng East was unique to this district or whether this percentage has been increasing over time.

The single largest group of educators (20.1%) reported mathematics as their area of specialisation, followed by foundation phase (13.4%) and English (11.8%). The remaining educators reported a diverse spread of subjects.

In summary, the average respondent in the study was an experienced, black, female educator who spoke an indigenous African language. She was married or in a relationship, had a diploma and was permanently employed at a primary school.

9.2 COMPENSATION AND RECOGNITION

The one-factor model found in the HEI study, did not prove adequate for the GDE data. The exploratory factor analysis (EFA) for Split Sample 1 for the Compensation and Recognition scale items resulted in three factors which were labelled *Compensation* (B8, B7, B6, B5 and B1); *Benefits* (B3 and B2) and *Emotional Recognition* (B4 and B9). The three factors explained adequate variance and made sense from a substantive point of view. The items had strong loadings on the specific factors, no cross-loadings were found, and it was not required to delete any items. Based on these EFA results which produced the above hypothesised three factor structure, a CFA was conducted on Split Sample 2 for the Compensation and Recognition items. The results were acceptable. Three sets of invariance testing were conducted for the Compensation and Recognition items using the split samples group, a male/female group and a PDI/non-PDI group. Even with the most restrained model, the factor structure fitted well and the proposed factor structure from Split Sample 1 replicated in Split Sample 2. Measurement invariance results indicated that males and females perceived the questions/items in a similar way and it was reasonable to assume that measurement equivalence is supported across gender groups. The invariance testing across PDI/non-PDI employment equity groups revealed an overall moderate fit which implied that there were some differences and some similarities between the model and the reality of the sample (Field, 2009: 33).

The moderate fit implied that the Compensation and Recognition scale might require additional items in order to more accurately measure the concepts in a way so that the results are comparable across employment equity groups. Internal consistency reliability was assessed by means of Cronbach's coefficient alpha. Following the EFA in Split Sample 1, and the CFA in Split Sample 2, a Cronbach's alpha was calculated for each of the three factors identified. These scores ranged between 0.764 on a two-item factor and 0.868 on a five-item factor and can be regarded as acceptable using the guidelines provided by Field (2009:681).

It can therefore be concluded from the results presented in section 7.2 that the Compensation and Recognition scale is a valid and reliable measure and may be included in the Talent Retention Scale. The scale identified that, on average, employees were not satisfied with compensation and benefits. A benefit of the current research is that the instrument also quantified how many respondents are dissatisfied as well as the intensity of their agreement or disagreement. The model-implied means indicated that males reported the strongest dissatisfaction with Compensation and the PDI group reported the strongest dissatisfaction with Compensation, although this result should be viewed cautiously, due to the fact that measurement invariance was not clearly established. Compensation items were cross-referenced at other points in the TRS.

The results of the ranking question from section C of scale “*top five most likely reasons to leave*” highlighted that being unhappy about financial compensation was identified as the most likely reason that employees in the sample would consider leaving their institution (see section 6.4.2) and leaving for more pay in another company as the second most likely reason. Compensation emerged as a potential turnover factor and less so as a potential retention factor for the current sample.

The results of the descriptive statistics for the Compensation and Recognition scale in section 7.2.1 indicated that 72% of respondents considered their basic salary to be inadequate. More than half of respondents expressed a degree of dissatisfaction with their pension benefits (58.6%) and their medical aid benefits (53.9%). These results were not unforeseen and the National Planning Commission (2012: 283) acknowledged that the “flat wage gradient deters highly skilled people from entering or staying in teaching”. Although young teachers (aged 22) might be earning similar wages to workers their age, with similar years of education in the private and public sector, by the age of 40, workers in the private sector earned 96% more and those in the public sector earned an estimated 24% more than teachers with post-secondary qualifications (van der Berg & Burger, 2010:25).

The most encouraging results were to the item, “*I am praised and thanked for the work that I do*” and just over half of the respondents (51%) agreed with this

statement although conversely 49% of respondents did not. Emotional recognition is a potential employee retention factor in the present study. Emotional recognition as described in this scale seems to be aligned theoretically with psychodynamic work theory. Employees wished to be thanked for their commitment and contributions at work with symbolic rewards and expressions of gratefulness (Brun & Dugas, 2008). Esteeming the value of employee expertise and capabilities and recognizing the contribution of employees were identified as a factor that promoted the retention of top talent in the broader organisational context (Kerr-Phillips & Thomas, 2009).

The SEM modelling between *Compensation and Recognition* and *Intention to Quit* revealed statistically significant findings in that the more negative *Compensation and Recognition* is perceived to be, the higher the *Intention to Quit* for both employment equity groups, and both males and females in the sample as shown in Tables 8-17 and 8-23.

Qualitative findings from the *Compensation and Recognition* open-ended responses provided numerous passionate comments as to why teachers should receive more pay and improved recognition. Additionally, respondents provided various ideas and suggestions on how compensation should be restructured with reference specifically to bonuses and pay for exceptional performance. There is a perception that hard work is not rewarded as voiced by a respondent: “*Incentives - Bonus when learners achieve high grades. For 7 years my matrics had a 100% pass rate for my subject = I got NOTHING!!!*”

The idea that educators in scarce subjects who are performing well should be selectively rewarded was proposed by the Centre for Development and Enterprise (CDE, 2011) while the National Planning Commission (NPC, 2012:35) proposed to “link teacher pay to learner performance improvements” although they additionally acknowledged the highly controversial nature of performance based incentives. The Department of Basic Education reported that certain employees were receiving performance based incentives (DBE, 2014) but criteria for these incentives and the extent or reasons were not made public in their annual report.

9.3 RELATIONSHIP WITH MANAGER/SUPERVISOR/DIRECT LINE MANAGER

The EFA for the Management Support items resulted in two factors, which were labelled *Manager Support* and *Appraisal and Feedback*. The factors explained adequate variance and were conceptually distinct. The items showed acceptable loadings, and no item was deleted. CFA using Split Sample 2 was able to confirm the two-factor model. Even with the most restrained model the factor structure fitted reasonably well and the proposed factor structure from Split Sample 1 replicated in Split Sample 2. Invariance testing across male, female and revealed that the two groups perceived the questions in a similar way, although measurement invariance was not strongly supported for the Employment Equity group.

The Cronbach's alpha ratings of internal consistency reliability for the two factors across the entire sample were 0.925 for *Manager Support* and 0.928 for *Appraisal and Feedback* and could be regarded as good (Field, 2009:681). It can therefore be concluded that the scale is a valid and reliable measure, and may be included in the Talent Retention Scale, although more attention should be paid to the fact that the items seem to be interpreted differently by the PDI versus non-PDI groups.

Following the 2CFA SEM modelling *Management Support* was referred to as *Manager Relationship*. The results, on average, showed that the majority of respondents agreed that the direct line management support they received was adequate and that they were satisfied with the quality of the relationship.

These findings were supported by the descriptive statistics for *Management Support* reported in section 7.3.1. The adequacy of perceived line management support was identified as a potential retention factor for the respondents in the present sample. The three most encouraging items pertaining to *Management Support* were that 85% of respondents reported that they could communicate easily with their line manager; 80% of respondents reported that their line manager communicated easily and clearly, while 79% stated that they could trust their line manager.

The SEM modelling between *Manager Relationship* and *Intention to Quit* did reveal a slight statistically significant finding for females and non-PDI groups in that the more negative *Manager Relationship* is perceived to be, the higher the *Intention to Quit* as shown in Tables 8-17 and 8-23. However, the relationships for males and PDI groups between *Manager Relationship* and *Intention to Quit* were not significant.

This appears to confirm indications from the literature that the perceived supervisor support relationship contributes distinctly and independently to employee outcomes such as turnover intentions (Kuvaas & Dysvik, 2010).

Qualitative findings from the open-ended questions regarding manager or supervisor support in the GDE sample were presented in section 6.5.4 and identified that characteristics of good managers who had positive relationships with their subordinates included leadership traits and behaviours such as professionalism, dedication, treating staff with respect, empathy, trustworthiness, fairness, supportive to employees, good communication, good listening skills and involving staff in the solving of problems. However, a poor relationship with the manager may emerge as a turnover factor in future studies as there were respondents who expressed frustration at favouritism, autocratic styles, lack of respect and unfairness from their line managers. This is apparently not limited to this district alone, as the South African Council of Educators reported having to refer complaints about favouritism, victimization and conditions of service to the DBE for resolution (SACE, 2013).

Qualitative findings from the *motivation to stay* question reported in section 6.5.6 provided an additional reference point, as the second most substantial theme from educators in this sample involved positive work relationships especially those educators with managers who inspired them, expressed appreciation and created a positive work environment. This finding aligns with other research in the field of organisation behaviour, which regard supervisory leadership as the leading factor associated with constructs such as organisation commitment and work satisfaction (Guest and Conway, 2004).

In conclusion, the results of the *Manager Relationship* scale confirm the decision to measure the adequacy of direct line management/supervisory support and can be included in future measures of retention of educators, HODs and principals.

9.4 SATISFACTION WITH INSTITUTIONAL PRACTICES

Results of the exploratory factor analysis on Split Sample 1 produced a four-factor pattern matrix which was labelled as follows:

- *Institutional Leadership* includes leadership, strategy, values and communication from leadership.
- *HR Practices* includes support from HR department, changes and restructuring, affirmative action, opportunity to engage in customer service projects, sufficient access to information.
- *Talent Development* includes mentorship opportunities, talent management practices, funding to attend conferences.
- *Diversity and Respect* includes satisfaction with sufficient cultural diversity and sufficient respect for my culture.

The four factors explained adequate variance for the measurement, and were conceptually distinct and representing a different aspect of the domain of institutional practices. The items showed acceptable loadings, and no items were deleted.

Based on the hypothesised four-factor structure a CFA was conducted for Split Sample 2. Results of the CFA on Split Sample 2 revealed good standardised loading estimates that were above the ideal limit of 0.7 (Hair *et al.*, 2010:673) for *Institutional Leadership*, *Diversity and Respect* and two of the *Talent Development* items (mentorship and talent management practices). The factor *HR Practices* produced loadings above 0.5 which could be regarded as acceptable (Hair *et al.*, 2010). Invariance testing across Split Sample 1 and Split sample 2 produced good CFI results that were above the ideal 0.95; TFI results ranged between 0.93 and 0.95 (which was acceptable) and good IFI results that were above the ideal 0.95 (Byrne, 2010:78-79). RMSEA results are sufficiently small and meet the criteria for acceptable fit (Vandenberg and Lance, 2000:44). Even with the most restrained

model the factor structure fitted well and the proposed factor structure from Split Sample 1 replicated in Split Sample 2. Invariance testing across gender and PDI/non- PDI groups revealed a moderate fit. It also seemed that more attention should be paid in future to develop items that are less susceptible to measurement invariance across PDI/non-PDI groups.

Cronbach's coefficient alpha or internal consistency reliabilities were good and above the 0.7 recommendation for all four constructs in Split Sample 1, Split Sample 2 and the entire sample (Hair *et al.*, 2010:125). *Institutional Leadership* was the construct with the highest reliabilities as the results were all 0.9 or above.

The CFA results and reliability results indicated that the four-factor structure is acceptable and the *Institutional Practices* scale can be considered valid and reliable, and therefore also suitable for inclusion in a more comprehensive Talent Retention Scale.

When comparing the model implied means and variances of *Institutional Practices*, it emerged that males and females in the sample appeared to have similar views on *Institutional Leadership, Diversity and Respect, HR Practices and Talent Development*. The PDI group displayed less satisfaction with all four institutional factors when compared with the non-PDI group although the results need to be interpreted with caution due to the fact that measurement invariance was not clearly established for the PDI/non-PDI groups.

The SEM modelling between *Institutional Practices* and *Intention to Quit* revealed statistically significant findings in that the more negative *Institutional Practices* is perceived to be, the higher the *Intention to Quit* for both employment equity groups, and males and females in the sample as shown in Tables 8-17 and 8-23. The results for males are highly significant and slightly significant for females.

There were some links between the descriptive statistics of the Institutional Practices items reported in section 7.5.1 and the qualitative responses to the open-ended

questions reported in section 6.5. The descriptive statistics revealed that the item with the highest mean (closest to satisfied) was *sufficient respect for my culture in the institution* (2.97). The two items that revealed the most dissatisfaction were “*changes and restructuring in the institution*” and “*funding to attend conferences from the institution*”. The concepts in these items were also commented on in the qualitative responses reported in section 6.5.5 with changes to the curriculum, new policies and practices, inadequate transport costs for conferences and confusion regarding who were allowed to attend conferences. It was not clear why some employees were allowed to attend conferences/workshops and other employees were not. The policy around this needs to be communicated to the educators and any misunderstandings clarified. If management does have the discretion to prevent some employees from attending or receiving development training, there should be a system where employees can request it directly or the district can intervene if educators don’t receive training and development.

Considering the qualitative responses to the open-ended question “*Does the institution need to make any changes in order to keep talented employees?*” that is reported in section 6.5.7, revealed that compensation, incentives and recognition remained the single biggest institutional change request by employees. Close to a third of employees who responded to this question (32%) expressed the need for these changes. Qualitative findings from this question further revealed teachers asking for help with discipline issues among school children. They also requested help with supporting their pupils who have learning problems and emotional problems. Educators reported being overwhelmed with the demands of providing medical, social and emotional support to learners, in addition to high administrative and educational workloads. The need for more caring and support for struggling learners has been highlighted by other research (Nel, Müller & Rheeders, 2011). The qualitative research finds agreement with Muthukrishna (2002) in that the key to providing support for special learning needs may be to provide support to educators.

Sixty percent of the public ordinary schools are non-fee-paying schools and thus there are no SGB-funded educators at these schools (GDE, 2012). As reported in section 6.5.5 and 6.5.7 in the present research, educators expressed their frustration

at the large classes because it impacts on their ability to support their learners adequately, especially children that need more help with learning. A teacher may be required to teach classes where up to 40% of a class faces barriers to learning such as ADHD and emotional barriers due to family problems (Nel *et al.*, 2011). In addition, large classes can result in a slow pace of learning because the teacher ends up working at the pace of the struggling learners (Hoadley, 2012). A slow pace of learning and limited instructional time in turn results in the curriculum not being covered adequately (Hoadley, 2012). Frustration with inadequate instructional time is reported in the qualitative findings for educators in Gauteng East but is mostly expressed together with frustration about too much administration.

Although the GDE reported that average class size in “Public Ordinary Schools” in 2011 was 36 learners per class, the annual report further conceded that in the poorest schools, the class sizes ranged between 41–44 learners, as there are no SGB teachers in the poorest schools (GDE, 2012:44). In the present research, some individual teachers reported being frustrated by class sizes between 44 and 52 students which implied that there were exceptions to the averages. The present research would support the strategic goals of the DBE which plans to ensure that “*excessively large classes are avoided*” by utilising available teachers effectively (DBE, 2014:43). Research on Grade 12 pass rates in 561 schools in Gauteng found that “*small class sizes generally result in better matriculation pass rates*” referring to learner-teacher ratios of 1:25 or less (Pienaar & McKay, 2014:118). Educators in the present study would welcome a policy that educators are utilised in the area in which they are skilled and qualified as this emerges as a recurring frustration in the qualitative findings.

9.5 INTENTION TO QUIT

Confirmatory factor analysis for Cohen’s (1993) withdrawal intentions scale with revised wording, resulted in one factor that was labelled *Intention to Quit* and the results were reported in section 7.5. The factor explained adequate variance for the measure. The items showed acceptable loadings, and no items were deleted. The

reliability analyses showed high reliabilities (0.885) for the *Intention to Quit* scale and its items. The results are in line with previous research that also found the *Intention to Quit* scale to be a reliable measure in the South Africa context (Du Plessis *et al.*, 2010; Veldtman, 2011). It can therefore be concluded that the *Intention to Quit* scale using the modified wording is a valid and reliable measure, and may be included in the overall Talent Retention Scale. However, the slight lack of measurement invariance across PDI/non-PDI groups require further investigation. Overall, Black, Coloured and Indian males considered leaving the organisation more strongly than females or White employees when the means were compared. The results of the *Intention to Quit* scale indicated that 40% of respondents are currently looking for work outside of their organisation and 53.8% of respondents think a lot about leaving the organisation. Although the GDE reported average annual turnover of 9.2% for the 2011 year (GDE, 2012:67) the *Intention to Quit* scale helps to highlight that 61.7% of employees in the present sample agreed to the statement: “*When possible I will leave this organisation*”. Thus it may just be difficulty with finding other work that prevents them from leaving and not job satisfaction or intrinsic motivation that is keeping turnover low. Although this finding only indicated an intention to quit, it is important to note that intentions can eventually lead to actual turnover (Zhao *et al.*, 2007). Ironically, there were indications that educators with the highest qualifications will be drawn to leave the profession and move to alternative public sector work while the least productive and educated public sector workers might be attracted to teaching (van den Berg & Burger, 2010).

In section 6.5.6 the qualitative question placed next to the *Intention to Quit* scale was reported as “*what motivates you to stay at your current institution*”. This question elicited responses from 621 employees that provided a total of 875 reasons for staying that could be construed as potential retention factors. The single largest motivating factor identified was “*making a difference*”. Teachers who believe that they make a difference in the lives of the children they teach, enjoy the work itself and believe they make a difference to the future of the country, accounted for 43% of responses. This could be classified as intrinsic motivation following the description by classic theorists such as Herzberg (in Bassett-Jones & Lloyd, 2005) or Maslow (1943). Following this was a job satisfaction theme but one based on a *positive work*

environment characterised by *good relationships with supervisors and peers* (21% or 185 responses). This aligns with research done by Du Plessis *et al.* (2010) on perceived supervisor support which has a significant and negative relationship with intention to quit. Limited alternative job options preventing turnover would support the theory of labour market factors moderating employee turnover (O'Reilly, 1991). The theme of *limited choice and lack of options* emerged for 19% or 169 respondents in the present study and could explain the high response rate (61.7%) to the intention to quit scale item "*when possible I will leave the organisation*".

The benefits usually assumed to be associated with teaching (school holidays) were a motivating factor for 5% of the respondents only. Factors influencing personal lifestyle were a motivating factor in 5% or 42 responses. These motivating factors included living close to the school at which they work and the benefits such as school holidays, medical aid and subsidies. There were individual respondents who were motivated by the career development opportunities although this was a minority response (3% of responses).

9.6 JOB SEARCH AND MOST LIKELY REASONS TO LEAVE

The GDE reported that the largest groups of employees to leave, were those younger than 29 years (31.3%) and those older than 60 who were of pensionable age (35%) (GDE, 2012: 29). In contrast, the Department of Basic Education reported that only 13% (436) of the total voluntary resignations in the year 2013 were in the category younger than 30 years (DBE, 2014:93). The risk of turnover for young employees was highlighted in the present research, since 27% of the age group 20–29 years were considering leaving education and had applied for jobs outside of education. The GDE annual report provided some indication that the intention to quit of those younger than 30 years might translate into actual quitting (GDE, 2012:29). The present study found that employees who had been working for less than a year in their current school (42%) expressed their intentions to quit by having engaged in active *job search* outside of education. This raised questions about adequate preparation, adequate support and mentoring and/or disillusionment with teaching among new teachers at an institution. Gravett, Henning and Eiselen (2011) found

that new teachers felt inadequately prepared for the exacting social reality of teaching in South African schools or the practical challenges of education. They recommended “pre-service” courses that would support education graduates to prepare for the realities of teaching, including skills in maintaining classroom discipline, teaching large classes, dealing with social realities of students from poor communities and communicating with parents. New teachers should be allowed to teach the subject content that they studied as well as teaching the age group that they studied for, in order to facilitate their entry into education (Gravett *et al.*, 2011).

The need to attract and retain young teachers, especially those teaching languages, mathematics and science was highlighted by other researchers, as two-thirds of teachers nationally are aged 40 years and older (CDE, 2011:4). The need for retention of young educators was further highlighted in the present research where 75.2% of respondents were older than 40 years and 27% of respondents under the age of 29 years admitted to having applied for jobs outside of education. The *most likely reasons to leave* selected by employees in the age group 22–29, included more pay (49.5%); promotion (56.2%); or a career change (42.9%) - while only 30.5% of those aged 22–29 provided retirement as a likely reason to leave. This might provide an indication that the remaining 69.5% of respondents in this age group did not see themselves as staying in education until retirement age. The DBE acknowledges the importance of attracting young, motivated, suitably qualified educators into the teaching profession and have made the recruitment of educators under the age of 30 a key goal for the 2014/2015 year with one of the strategies being the Funza Lushaka bursary scheme (DBE, 2014:43).

Although there is an often cited idiom *that employees leave a manager*, in the present study good relationships with colleagues and supervisors emerged as a retention factor and motivation for staying rather than as a turnover factor. In response to the question “*what motivates you to stay*” it emerged as the second strongest category. In contrast, when employees were asked to rank their *most likely reasons to leave*, the item “*unhappy about the people I have to work with*” emerged as 15th out of 18 options and was selected by only 14% of respondents.

9.7 COMPREHENSIVE HIGHER ORDER MODEL FOR TALENT RETENTION

In Chapter 8, a second-order CFA was conducted on the total Talent Retention Scale in order to examine the plausibility of higher order explanations of the latent constructs and to investigate the nomological validity of the scale. In the 2CFA analysis in section 8.2, the higher order model was found to fit adequately across gender and fit moderately well across PDI/non-PDI groups. The 2CFA model produced more positive results than the first order CFA across PDI/non-PDI groups. Regression scores above 0.5 were obtained for the estimates of the standardised regression coefficients (Hair *et al.*, 2010:688) and this provided support for convergent validity. At the 2CFA level the majority of correlations were below 0.7 which implied that the scales measured different constructs and thus lent support for discriminant validity. Moderate correlations were found for *Manager Relationship* and *Institutional Practices* for males in the sample (0.736) for the PDI group (0.718). In the overall scale model all SMC results were above 0.3 as required (Tabachnick & Fidell, 2001) with the exception of an item pertaining to affirmative action (F5) which may require rewording in future research. Examination of the variances revealed acceptable results and there were no major concern with error variances or item variances.

As part of establishing nomological validity the scale was tested against an independent measure, namely Cohen's (1993) *withdrawal intentions scale* which was called *Intention to Quit* (ITQ). The resultant SEM model tested favourably across gender groups, produced good fit measure results and acceptable invariance was established. The results lend support for nomological validity of the Talent Retention Scale due to the significant negative relationships identified between *Intention to Quit* as an outcome variable when related to the three sub-scales of the Talent Retention Scale. Analysis of error variances and SMC results revealed that no items were required to be deleted.

9.8 SUMMARY

The GDE study produced substantial quantitative and qualitative data that was analysed and reported on in Chapters 6 to 8. In Chapter 9, the results of the demographic and contextual variables were discussed. This was followed by a discussion of the results of each of the new sub-scales of the Talent Retention Scale (*Compensation and Recognition, Manager Relationship and Institutional Practices*). The discussion included establishing a link between the psychometric data and the qualitative results of the open-ended questions. This was followed by a discussion of the results for Intention to Quit and finally, on the results for *job search* and *most likely reasons to leave*. The second order confirmatory factor results and SEM modelling were discussed briefly in this chapter, however, the detailed results were dealt with in Chapter 8. In Chapter 10, the conclusions about the Talent Retention Scale are presented as well as a summary of the scale development process in both the HEI and GDE study. This is followed by the limitations of the study and recommendations for future research.

CHAPTER 10: CONCLUSIONS AND RECOMMENDATIONS

The **primary research objective** of the research was the development of a talent retention scale. The research methodology was based on the scale development process of DeVellis (1991) and Hinkin (1995). The talent retention scale was intended as a multi-item measurement scale for employee retention utilising a mixed method research strategy. In this chapter a summary of the scale development results (primary research objective) are followed by the conclusions regarding the secondary research objectives, limitations of the study, recommendations for future study and contributions of the study.

10.1 SCALE DEVELOPMENT PROCESS - STEPS 1 TO 5

The first step in the scale development process required that the parameters of the construct be established. This was done in two ways, firstly by establishing a theoretical basis to develop the items by reviewing the existing literature and these results are presented in Chapter 3. Secondly, the parameters of the construct were established through qualitative inquiry where the first set of primary data was generated through semi-structured interviews with key participants in a sample of six industries in the South African context. These results are presented in Chapter 4 and were included the qualitative data collection process, qualitative data analysis and findings from key participant interviews which were used to generate the items. As part of the scale development process, the scale and measurement format were determined, psychometric analyses were conducted and validation items were considered.

10.2 SCALE DEVELOPMENT PROCESS - STEPS 6 TO 8

Steps 6–8 in the scale development process required a developmental study to be conducted; item analysis and validation to be carried out and for the length of the scale be evaluated (DeVellis, 1991; Hinkin, 1995). In addition, it is recommended best practice (Hinkin, 1998) that Steps 6–8 be replicated and for this reason the

developmental study was conducted in two distinct samples. The developmental study in higher education is reported in Chapter 5 and the developmental study in general education is reported in Chapters 6 to 9. Due to the large sample size in the general education sample a comprehensive psychometric analysis was conducted which included a comprehensive multiple-group SEM analysis. A comparison and contrast of the two developmental studies will be summarised and discussed in order to obtain an overall view of the outcome of the scale development process.

10.2.1 Data collection approach

Both studies utilised paper-based questionnaires in order to gain respondent confidence in the anonymity of responses. The HEI study had the option of electronic responses and it was hoped that this would have improved the response rate although not a single person opted for utilising the electronic responses. Electronic responses were not an option in the GDE sample as internet access was a limitation for educators and institutions in addition to anonymity concerns that respondents may have towards web-based surveys.

Scale items and open-ended questions were similar for both samples. Slight changes in the format of the Yes/No responses for the *job search* items were made in the GDE study in an attempt to improve clarity. It is recommended that future researchers include the item from the HEI study “*No, I have never looked for another job*” (Addendum D) as an additional line item while retaining the Yes/No format for the remaining *job search* items as utilised in the GDE study (Addendum E).

The Institutional Practices scale for the HEI sample contained three additional items that were omitted from the general education sample due to a lack of relevance in the context. These items were:

- *Funding for Research Publications from the Institution*
- *Research funding from External Bodies such as the National Research Foundation (NRF)*
- *Funding from the Institution for Professional Registrations.*

It is possible that the omission of the three items from the institutional factors scale which were context specific could affect the factor analysis of the items. Future researchers should consider the contextual relevance for the specific sample and decide to include or omit these items.

10.2.2 Descriptive results

Compensation practices were found to be less than satisfactory for 52.7% of the HEI sample. The most problematic compensation practice for the HEI sample was that the bonus structure did not adequately reflect the employee's contribution to the organisation. In particular, 72% of respondents in the GDE sample considered their basic salary to be inadequate. The majority of employees in the HEI sample perceived adequate emotional recognition (57% of sample) which contradicted the findings in the GDE sample where 62% of respondents disagreed and perceived the emotional recognition as inadequate.

Regarding the relationship with their manager, the results showed that overall the majority of respondents in both the HEI and GDE sample agreed that the direct line management support they received was adequate and that they were generally satisfied with the quality of the relationship with their manager. Some of the most encouraging findings with regards to management support were that in the HEI sample 90% of employees reported that they could communicate easily with their line manager and 85% of the GDE sample agreed with the statement. Additionally, 79% of GDE respondents and 84% of HEI respondents stated that they could trust their line manager. However, findings also showed scope for improvement of performance appraisal and feedback practices in both samples.

The majority of HEI respondents indicated being satisfied with general institutional practices, funding opportunities, and diversity and community service practices. With regards to the *Diversity and Respect* factor, the results of both the HEI sample and GDE sample, expressed as percentages of the respondents who were satisfied with these institutional practices are displayed in Table 9-1.

Table 10-1: Diversity and Respect item results expressed as percentages

Extent of employee satisfaction	Percentage satisfied - HEI sample	Percentage satisfied GDE sample
<i>sufficient respect for my culture in the institution</i>	77%	83%
<i>sufficient cultural diversity</i>	68%	75%
<i>satisfaction with affirmative action</i>	60%	63%

On an item level, the HEI respondents indicated the most dissatisfaction with the *talent management practices* of their institutions and *mentorship opportunities* for academic staff whereas the GDE respondents reported the most dissatisfaction with the items *changes and restructuring in the institution* and *funding to attend conferences from the institution*.

The results of the Intention to Quit scale items in the HEI sample showed that 48% of respondents indicated slight to strong agreement with the statement “*when possible I will leave this organisation*” while 37% indicated that they were thinking about leaving the organisation and 29% were at the time searching for employment outside of the organisation. In comparison, the results of the Intention to Quit scale items in the GDE sample revealed that that 61.7% of employees agreed with “*When possible I will leave this organisation*”; 53.8% of respondents thought “*a lot about leaving the organisation*” and 40% of respondents were at the time looking for work outside of their organisation. The turnover intentions were more strongly expressed by the GDE respondents than the HEI respondents.

10.2.3 Validation analysis

Sampling adequacy and sphericity results are shown in Table 10-2. All the Bartlett test results were non-significant and supported further factor analysis. The KMO results for both samples, were all above 0.8 and can be regarded as good (Field, 2009:788).

Table 10-2: KMO Summary – HEI and GDE samples

Scale	HEI sample	GDE sample
Compensation and Recognition	0.801	0.873
Management Support / <i>Manager Relationship</i>	0.891	0.925
Satisfaction with Institutional Practices	0.882	0.937

The **factor analysis** results differed in the two samples. Initially, the *Compensation and Recognition* scale and *Management Support* scale were developed as single factor scales and EFA among the HEI sample resulted in single factors for each of these scales. However, for the GDE sample, confirmatory factor analysis did not yield acceptable results. Using the split sample methodology described in the introduction to Chapter 7, an EFA was conducted on one half of the GDE sample and a CFA was conducted on the second half of the GDE sample and the identified factors are summarised in Table 10-3. In the HEI sample, EFA for the *Institutional Practices* scale resulted in three factors. However, for the GDE sample a four-factor structure was found to be most suitable. A summary of the similarities and differences in the factor analyses for the HEI sample and GDE sample are displayed in Table 10-3.

Table 10-3: Factor analysis summary for developmental study

Scale	No of Factors HEI	Factors identified HEI study (EFA)	No of factors GDE	Factors identified GDE study (CFA)
Compensation and Recognition	1	Compensation and Recognition	3	1. Compensation 2. Benefits 3. Emotional Recognition
Management Support/<i>Manager Relationship</i>	1	Management Support	2	1. Manager Support 2. Appraisal and Feedback
Satisfaction with Institutional Practices	3	1. General Institutional Practices 2. Institutional Funding Opportunities 3. Diversity and Community Service	4	1. Institutional Leadership 2. HR Practices 3. Talent Development 4. Diversity and Respect
Intention to Quit	1	Intention to Quit	1	Intention to Quit

A possible interpretation for the different factors identified in the two contexts is that the HEI institutional context is quite different from the general education context in South Africa. The HEI institutions and employees operate in a more privileged environment than the GDE environment in terms of resources. The majority of schools in the GDE (60%) are non-fee paying schools (GDE, 2012) and their resources, buildings, environment are in some cases in quite a desperate state. Qualitative comments in GDE study indicate that in some schools there are buildings in a state of disrepair, lack of heating, internet access; libraries; insufficient classrooms, seating, lack of toilet paper, lack of toilets and sanitation (see section 6.5). There are potentially also additional emotional differences and challenges between the two contexts with teachers in basic education having to deal with socio-economic difficulties of learners and schools based within low income neighbourhoods which may include drug abuse, teenage pregnancy, violence and physically ill pupils (see section 6.5). In contrast in the HEI sample these are often handled by professional services within the institution. The contextual differences are further clarified when considering the findings from the *Intention to Quit* scale (see section 10.2.2) where turnover intentions are more strongly expressed by the GDE sample (61.7%) than the HEI respondents (48%). The differences in the two contexts are further highlighted in Table 10-7 where “*Would leave for a career change*” emerged as one of the top five reasons for the GDE sample in contrast to the HEI sample where it was only ranked 11th. This potentially indicates disillusionment with the teaching profession for the GDE sample.

There is also a difference in the way in which the salary scales in general education compare with the private sector. As discussed in section 9.2, young teachers (aged 22) might be earning similar wages to workers their age, with similar years of education in the private and public sector, but by the age of 40, workers in the private sector earned 96% more and those in the public sector earned an estimated 24% more than teachers with post-secondary qualifications (van der Berg & Burger, 2010:25). In contrast, a report by Higher Education South Africa (2014:51) identified that junior lecturers and lecturers had **better** monthly earnings when compared with workers in the private sector at the same post-grade but earned less than public sector workers in comparable post-grades. In the higher post-grades (professor,

associate professor) the remuneration of academic staff in 2012 “was **better** than the remuneration of comparable staff in the public and private sectors (HESA, 2014:51). Thus the more challenging and complex situation in the GDE may result in a wider range of differences in the way that compensation and recognition, management support and satisfaction with institutional factors are viewed in the two contexts and the more complex situation in GDE may explain why more factors were found in the GDE study when compared to the HEI study.

Internal consistency reliability was assessed by means of Cronbach’s coefficient alpha. In the HEI study Cronbach’s alpha reliabilities ranged between 0.783 and 0.934 for the different scales and factors. In the GDE study, more factors were identified and therefore the number of items per factor was lower which can affect the reliability of the scale (Field, 2009). Cronbach’s alpha reliabilities ranged between 0.764 and 0.928 for the scale factors. All the internal consistency reliabilities are acceptable for this study using the recommendation of Field (2009:681). Results are summarised in Table 10-4.

Table 10-4: Summary of Cronbach’s coefficient alpha scores in developmental study

HEI Study			
Scale	Factors HEI Study	No of items	Cronbach’s alpha
Compensation and Recognition	Compensation and Recognition	9	0.881
Management support	Management support	9	0.934
Institutional Practices	General Institutional practices	9	0.923
	Institutional Funding	4	0.836
	Diversity and Community Service	4	0.783
Intention to Quit	Intention to Quit	3	0.914
GDE Study			
Scale	Factors GDE Study	No of items	Cronbach’s alpha
Compensation and Recognition	Compensation	5	0.859
	Benefits	2	0.789
	Recognition	2	0.765
Manager Relationship	Manager Support	5	0.925
	Appraisal and Feedback	4	0.928
Institutional practices	Institutional Leadership	4	0.906

Scale	Factors GDE Study	No of items	Cronbach's alpha
	Diversity and Respect	2	0.764
	HR Practices	5	0.801
	Talent Development	3	0.813
Intention to Quit	Intention to Quit	3	0.885

In conclusion, it appears that internal consistency reliabilities for the scale have been established in two different samples.

No invariance testing was conducted in the HEI sample due to the limited sample size. Invariance testing was conducted in the GDE sample in order to determine if there was measurement invariance across various groups (gender, employment equity, split samples). Measurement invariance assessment may help to identify if respondents from different groups or different cultures “interpret a given measure in a conceptually similar manner” and is suitable for “multi-item composite scales” (Vandenberg & Lance, 2000:5). The invariance testing in the present study produced mixed results. In the analyses in Chapters 7 and 8, when the measurement invariance analyses were considered as *acceptable* it was based on the generally accepted recommendations that IFI, TLI and CFI fit measures are above 0.9 or closer to 0.95 which can be considered ideal (Byrne, 2010:78-79; Vandenberg & Lance, 2000:44; Hu & Bentler, 1999). It also means that RMSEA fit measures are below 0.08 as the upper limit of reasonable fit (Vandenberg & Lance, 2000:44). In addition, in order for measurement invariance to be considered *acceptable*, the nested model comparisons need to produce non-significant results when the measurement intercepts model is (M2) is evaluated against the measurement weights model (M1), as well as against the configural invariance model (M0). This evaluation is based on consideration of the Δ CMIN and corresponding Δ df and (M2-M0) and (M2-M1). However, it should be taken into account that a large sample size can affect the results of CMIN and CMIN/df, and therefore also of the likelihood ratio tests, Δ CMIN with Δ df; and this needs to be considered in the evaluation criteria (Byrne, 2010:76). A summary of the results of the measurement invariance testing using a CFA framework is summarised in Table 10-5.

Table 10-5: Summary of invariance testing results in GDE sample

Scale	Split Samples	Male/Female	PDI/non-PDI
Compensation and Recognition	ME/I – Good	ME/I – Good	Good IFI, CFI TLI not ideal (0.875) RMSEA (acceptable 0.074) scalar and metric invariance not clearly established
Management Support	Good IFI, TLI, CFI RMSEA not ideal	IFI, CFI TLI good (0.898) RMSEA not ideal scalar and metric invariance not clearly established	Good IFI, CFI TLI good(0.897) RMSEA not ideal scalar and metric invariance not clearly established
Satisfaction with Institutional Practices	ME/I – Good	ME/I- Good	Good IFI, TLI, CFI Good RMSEA scalar and metric invariance not clearly established
Intention to Quit	Not applicable as no split sample analysis was required	Good IFI, TLI, CFI Good RMSEA scalar and metric invariance not clearly established	Good IFI, TLI, CFI Good RMSEA scalar and metric invariance not clearly established

Even though acceptable results for IFI, TLI, CFI and RMSEA were obtained for Institutional Practices and Intention to Quit, the nested model comparisons still produced some significant differences at the measurement intercepts level. However, authors such as Vandenberg and Lance (2000:44) pointed out that “a statistically significant chi-square value can incur even though there are only minor differences between the groups’ factor patterns” and Schermelleh-Engel *et al.* (2003:33) cautioned that in large samples “plausible models might be rejected based on a significant χ^2 [CMIN] statistic even though the discrepancy between the sample and the model-implied covariance matrix is actually irrelevant.” Using the rationale proposed by Little *et al.* (2007) and Strasheim (2014) invariance was regarded as acceptable whenever IFI, TLI, CFI and RMSEA fit measures were good.

Measurement equivalence was not clearly established for the *Management Support* scale. For the *Compensation* scale measurement equivalence was not clearly established across the PDI/non-PDI employment equity grouping. This suggests that the two major employment equity groups in the sample perceive the items and latent constructs in the *Compensation* scale and *Management Support* scale differently and may conceptualise the constructs differently. The differences between the PDI/non-PDI groups in the substantive analysis for *Compensation and Management Support* should thus be interpreted with caution. This would also apply to gender differences in the *Management Support* scale. Some of the proposed remedies for a lack of measurement invariance includes developing a different scale for each culture or modifying the items in the existing scale. There is also the possibility that the scale can be used as is and to accept that expected group differences will occur in further research using the scale (Vandenberg & Lance, 2000). Cheung and Rensvold (2002:252) stated that metric invariance "... need not be seen merely as an obstacle that must be surmounted before the equality of latent means can be assessed; rather it should be seen as a source of potentially interesting and valuable information about how different groups view the world".

Invariance testing using second order CFA (Chapter 8) in the comprehensive Talent Retention Scale fitted adequately over males and females and fitted reasonably well across PDI/non-PDI groups. In the psychometric analysis of the comprehensive Talent Retention Scale, the 2CFA model in Chapter 8 produced more favourable results compared to the first order CFA across PDI/non-PDI groups that were reported in Chapter 7. As part of evaluating the nomological validity of the comprehensive scale, the more complex Talent Retention Scale used as antecedent of Cohen's (1993) *Withdrawal Intentions Scale* which was called *Intention to Quit (ITQ)* in this study. The results lent support for nomological validity of the Talent Retention Scale due to the significant negative relationships (and a few non-significant) relationships between the three sub-scales of the Talent Retention Scale and *Intention to Quit (ITQ)*. Analysis of error variances and SMC results revealed that no items were required to be deleted.

As part of the nomological validity assessment, the moderating roles of gender or PDI/non-PDI groups on the relationships between the 2CFA Talent Retention model with ITQ respectively were also evaluated. Gender was found to moderate the relationship between the 2CFA Talent Retention model and ITQ. The results lend support for nomological validity of the Talent Retention Scale due to the significant negative relationship between *Intention to Quit* as an independent measure and the three sub-scales of the Talent Retention Scale for females and for two of the sub-scales for males. With regards to the moderating effect of employment equity group on the relationship between Talent Retention Scale factors and ITQ, the effects of *Compensation and Recognition*, *Manager Relationship* and *Institutional Practices* were found to be significantly different for the PDI group and the non-PDI group on ITQ.

10.2.4 Analysis of job search and most likely reasons to leave

Due to the difference in format discussed in section 6.4.1, the response option “No” was not available for the GDE study. However, it is still informative to examine the similarities and differences between the HEI sample and GDE sample based on *job search and most likely reasons to leave*. These results are presented in Table 10-6.

Table 10-6: Analysis of job search in HEI and GDE samples

Have you ever looked for another job?	% YES HEI Study	% YES GDE
Yes, in the same institution in a different section	17.0	27.4
Yes, applied for a promotion in the same institution	28.1	33.5
Yes, at another academic institution	31.4	40.2
Yes, in another organisation(not in academia/education)	24.2	28.5
Yes, but I only placed my CV on the web	6.5	11.7
No, but I have been headhunted by another organisation	24.2	23.1
No, but I have been approached by a recruiting agency	11.1	14.5
No	25.5	*

* no responses available for GDE study

In brief, it appeared that the GDE sample engaged in more active *job search* than the HEI sample both within their current institutions, within other education institutions and outside of education. Cross-tabulations were done in the GDE sample with gender and employment equity and the results seem to concur with international tendencies that fewer males remain in the teaching profession (OECD, 2005). Males in the GDE sample declared their intention to leave the profession more strongly than females did, applied for more jobs outside of education, and were least likely to stay in their jobs until retirement. In the South African context the group of males most likely to leave general education were the PDI group (Black, Coloured and Indian educators). The risk of turnover for young employees was emphasised in the GDE sample as 27% of the age group 20–29 years were considering leaving education and had applied for jobs outside of education.

The similarities and differences between the results of the ranking scale *Top 5 most likely reasons to leave* for the HEI and GDE samples are shown in Table 10-7.

Table 10-7: Comparison HEI and GDE samples –most likely reasons to leave

HEI Study		GDE Study	
Ranked order for most likely reasons to leave	% YES	Ranked order for most likely reasons to leave	% YES
Unhappy about financial compensation	54.2	Unhappy about financial compensation	56.2
Would leave for a promotion	46.4	Would leave for more pay in another company	51.6
Unhappy about career development opportunities	41.2	Would leave for a promotion	51.1
Retirement	41.2	Retirement	48.7
Would leave for more pay in another company	38.6	Would leave for a career change	35
Would leave for personal reasons such as family responsibilities	30.1	Would leave to start my own business	26.7
Unhappy about company policies	26.1	Would leave for ill health/disability	25.3
Would leave for ill health/disability	24.2	Would leave for a job closer to home	23.9
Would leave to study further	21.6	Unhappy about career development opportunities	23.2
Would leave if my spouse was transferred	19.6	Unhappy about the job itself	22.3
Would leave for a career change	19.6	Unhappy about company policies	20.9
Would only leave if I was retrenched	18.3	Unhappy about the number of hours I am required to work	15.4
Would leave to start my own	17.6	Would leave for personal reasons	15

HEI Study		GDE Study	
business		such as family responsibility	
Unhappy about the job itself	16.3	Would leave if my spouse was transferred	14.9
Would leave for a job closer to home	16.3	Unhappy about the people I have to work with	14.5
Unhappy about the number of hours I am required to work	15.7	Unhappy about training opportunities	14
Unhappy about the people I have to work with	12.4	Would leave to study further	13.6
Unhappy about training opportunities	9.8	Would only leave if I was retrenched	10.5

Results from the ranking scale (*Top 5 reasons that you would leave your job*) indicated that the number one reason that employees in both the HEIs and public schools in the GDE sample would leave their jobs was “*Unhappy about financial compensation*”. The HEI sample appeared to prioritise career development opportunities more highly than the GDE group whereas leaving for a promotion featured in the top five reasons of both samples. Retirement featured in the same ranking position although more of the GDE group intended to stay until they retired. “*Would leave for a career change*” emerged as one of the top five reasons for the GDE sample in contrast to the HEI sample where it was only ranked 11th. This potentially indicates disillusionment with the teaching profession for the GDE sample.

10.2.5 Qualitative findings from open-ended questions

A mixed method research strategy was followed in both samples. The combination of qualitative and quantitative results produced more valuable findings than either method alone would have generated. Research studies in education are frequently criticised for being small-scale and having limited generalizability (Hoadley, 2012). However, the open-ended questions in the GDE sample generated extensive qualitative data. The qualitative findings in the GDE study enhanced the understanding of the content domain and the quantitative results alone would not have been able to communicate the passionate emotions and diverse views of the educators. Qualitative findings produced a breadth of retention and turnover factors that would not have emerged should only the closed scale items have been used.

While conversely, quantitative results provided confirmation of statistically significant differences between the male/female groups and PDI/non-PDI groups with regards to turnover and retention which would not have been possible if only a qualitative study had been carried out.

In contrast, despite the scale items having been similar in the HEI study, very limited qualitative information was received. This was due to the scale being included as one of six research studies in the SANPAD project, which probably resulted in respondent fatigue and thus minimal, incomplete comments.

10.2.6 Validity summary

In order for a scale to be regarded as valid, various forms of validity need to be considered and these were defined and discussed in section 2.5. The validity findings for the proposed Talent Retention Scale are summarised in Table 10-8.

Table 10-8: Summary of validity findings

Validity type	Method	Applied in HEI	Applied in GDE	Comment
Content validity	Literature review	Yes	Yes	Helped to establish theoretical parameters of talent retention
	Qualitative interviews	Yes	Yes	Helped to define the content area of talent retention
	Item Generation process	Yes	Yes	Clear links established between theory, content area and items
	Expert validation	Yes	No	Panel of academics and content area specialists involved in first draft of the scale before HEI study
Construct validity including:				“The extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure” (Hair <i>et al.</i> , 2010: 686).
Face Validity	Pre-test of scale prior to EFA and CFA	Yes	No	Distributed to 18 respondents who were asked for feedback on clarity of items before HEI study only
Convergent validity	Standardised Estimates or factor loadings during CFA	No	Yes	CFA not done in HEI sample CFA in GDE sample showed adequate Standardised Estimates above 0.5 at least and ideally 0.7

Validity type	Method	Applied in HEI	Applied in GDE	Comment
				or higher (Hair <i>et al.</i> , 2010:688). Results can be regarded as support for convergent validity Additional support during 2CFA and SEM for overall scale
Discriminant validity	Correlation matrixes	Only in Institutional Practices scale	Yes	Low correlations among constructs when the factor correlation matrixes are examined (Byrne, 2010). General support for discriminant validity except for Management Support scale Additional support during 2CFA and SEM for overall scale model
Nomological Validity/Criterion Validity	Matrix of construct correlations in SEM 2CFA testing	No	Yes	Relationship between scale constructs and intention to quit as an independent measure was established in SEM modelling of the overall scale (Chapter 8)

Hinkin (1998:105) cautioned against stating that **content validity** has been proven as "... it is not possible to measure the complete domain of interest", however items can be regarded as reasonable or "adequate" in their representation of the construct. Content validity in this study can be regarded as adequate based on the results summarised in Table 10-8 with the understanding that establishing content validity is a partly subjective process (Hensley, 1999). The components making up construct validity include face validity, convergent validity, discriminant validity and nomological or criterion validity (Leedy & Ormrod, 2005). **Face validity** was established in the pre-test process but it is important to acknowledge that this process is subject to the responses of the panel conducting the pre-test (Stanton *et al.*, 2002) and that different responses might be received from a different panel given different instructions. **Convergent validity** was established in the GDE sample where CFA was done based on the standardised estimates of the estimated factor loadings or measurement weights. **Discriminant validity** can be tested when there is more than one factor in a scale. In the HEI sample only *Institutional Practices* was a multi-factor scale. Low correlations of the factor correlation matrixes lent support for discriminant validity in the factors of the GDE scale, with the exception of *Management Support*. **Nomological validity** was not established in the HEI sample

as CFA was not conducted. In the GDE sample nomological validity was supported during a second order CFA to model the comprehensive Talent Retention Scale, and SEM with *Intention to Quit* as the outcome variable. Second order CFA was conducted on the total Talent Retention Scale in order to determine if there were higher order explanations of the latent constructs and to establish nomological validity. The 2CFA model was found to fit well across gender, and fit moderately well across PDI/non-PDI groups. The 2CFA model produced more favourable results than the first order CFA across PDI/non-PDI groups. In brief, construct validity was adequate for the comprehensive Talent Retention Scale based on the results in the GDE sample, with the exception of the *Management Support* scale which seems to need further work either in terms of items and/or factors. The reality is that the establishment of construct validity is a “never ending process” (Anastasi, 1986:4) even if the available validity data is deemed acceptable. Satisfaction with *Compensation and Recognition* and satisfaction with *Institutional Practices* had a strong negative relationships with Intention to Quit, lending support for nomological validity of the Talent Retention Scale (TRS).

10.3 CONCLUSIONS REGARDING SECONDARY RESEARCH OBJECTIVES

In addition to the primary research objective various secondary research objectives were stated for this study. The first one was to *describe how employee talent retention is defined, identified, measured and monitored in a sample of organisations represented by key participants.*

This objective was covered in the thematic analysis in Chapter 4 where *talent* was defined, identified, measured and monitored at different stages of the employee life cycle and is summarised in Figure 4-1. As a result of the qualitative research talent was defined as an exclusive group of employees who can be identified in different ways including qualifications and experience, scarce skills, specific knowledge, roles or positions, level of actual performance or potential performance and can be further developed to meet the contextual needs of a specific organisation within the socio-political context of South Africa.

The types of organisational data required to measure and monitor turnover and therefore employee retention were identified as data collected prior to employee resignation; data that is collected following employee resignation; data concerned with monitoring the actual cost of turnover and lastly, factual industry data about turnover. The types of organisational data required to manage turnover and retention were presented in Figure 4-3. In order for retention management strategies to be implemented successfully, organisations need to collect organisational data, educate management about the content, meaning and value of the data and additionally educate employees. Talent retention has the potential to become a synergistic process as employees and management need to understand that they contribute to the organisational data on retention by providing ideas and feedback about retention strategies and can also benefit from the data because it may contain information on proposed new strategies and existing strategies (Figure 4-2).

The next secondary research objective was *to explore and identify factors which may contribute to turnover and retention of academic employees in higher education.*

These factors were described in Chapter 5 and included the items and results of the *Compensation and Recognition scale*, *Management Support scale* and *Institutional Practices scale*. To determine if employees were engaged in active *job search* and thus potential turnover, direct questions were asked and the results were discussed in section 5.4.5 and summarised in Table 10.6. Further turnover and retention factors were highlighted by the *most likely reasons to leave* ranking questions which are discussed in section 5.4.5 and summarised in Table 10.7.

The third secondary research objective was *to explore and identify factors which may contribute to turnover and retention of educators and school leaders in basic or general education.*

The turnover and retention results for basic or general education are presented in Chapters 6–9. The exploratory results of the open-ended questions were presented in Chapter 6. In addition, the quantitative active *job search* and *most likely reasons to leave* ranking questions produced further potential turnover and retention factors which are discussed in section 6.4 and summarised in Table 10.6 and Table 10.7.

The results of the *Compensation and Recognition* scale, *Management Support* scale and *Institutional Practices* were presented in Chapter 7 and highlighted potential turnover and retention factors. The relationships between these turnover and retention factors and intention to quit as an outcome variable were presented in Chapter 8. In addition, the moderating roles of gender as well as employment equity group were investigated on the relationships between the Talent Retention Scale and Intention to Quit were examined.

The fourth secondary research objective was *to conduct an in-depth psychometric analysis of the scale*.

The results were only available for the sample from general education. The in-depth psychometric analyses included EFA, CFA, reliability analyses and invariance testing that were conducted for each of the sub-scales of the Talent Retention Scale and the results were presented in Chapter 7. Second order CFA and SEM for the overall measurement scale with Intention to Quit as an outcome variable was conducted in Chapter 8 in order to evaluate the nomological validity of the Talent Retention Scale.

The final secondary research objective was *to propose changes to the scale for future consideration including practical considerations should the scale be utilised in alternative environments*. The proposed changes to the scale follow subsequently in sections 10.4.1 and 10.5.

10.4 LIMITATIONS OF THE STUDY

This research study has certain limitations that are important to highlight. Firstly, the research design involved a cross-sectional time-frame that only provided a limited “snapshot” of the sample’s views at the time of the research (Saunders *et al.*, 2007:148). In contrast, episodic or longitudinal measurement would be the ideal method to determine the diagnostic potential of a scale as it provides additional data from the same sample group using the same research design (Steel, 2002:347). Episodic measurement was not done due to practicality, feasibility and anonymity requirements as the consent conditions of the study required anonymous and

confidential participation. From a feasibility and practicality point of view the institutions involved agreed to a single measurement episode only and organisational consent for multiple measurement episodes would need to be considered in future research.

The definition of talent that emerged during the qualitative stage of scale development is that talent refers to an exclusive group of employees who can be identified in different ways including qualifications and experience, scarce skills, specific knowledge, roles or positions, level of actual performance or potential performance and can be further developed to meet the contextual needs of a specific organisation within the socio-political context of South Africa. However, the academic institutions in which the quantitative research was conducted did not explicitly identify their talent pool to either the researcher or the employees. Thus employees do not necessarily know if they are talented or not and performance appraisal information linked to respondents was not available. In the context of education it appears that the **roles** of employees, their **qualifications and experience** helps to define talented employees as essential to meeting organisational objectives. Thus educators and academic employees by virtue of their roles, experience and qualifications are the key to fulfilling the organisational objectives of delivering quality education. There is a strong emphasis on **potential** talent as part of scarce skills due to the aging population and the drive to recruit young educators who have no performance track record or experience and are only defined as talent based on their educational qualifications and the roles they are selected into.

Further, this research made use of self-report measures which have the potential to result in measurement error and common method bias due to influencers such as social desirability, acquiescent biases or transient mood states (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Spector, 1994). CFA takes measurement error into account and is thus recommended as part of data analysis. Additional sources of objective organisational data may improve the validity of the findings. Anonymity concerns resulted in the survey data not being integrated with performance appraisal data and thus top and poor-performing employees were not distinguishable.

Scale items can produce a limited range of responses as employees can only respond to questions that are asked in the questionnaire. To this end, an attempt to provide the opportunity for an additional range of responses and to clarify employees' understanding of the concepts, several open-ended questions were included in the scale. There was a very low response rate to the open-ended questions in the HEI study and the few responses received were not adequate for thematic analysis. This is unfortunate as these answers may have provided additional insights into the turnover and retention of academic staff at HEIs. The Talent Retention Scale was called an "*employee retention survey*" at the time and was placed fifth in a booklet with six other scales as part of the SANPAD project. Respondent fatigue possibly had an effect on the response rate to the open-ended questions in the HEI study. In contrast, the GDE study participants provided extensive responses to the open-ended questions that are reported in section 6.5.

The results of the HEI sample can only be generalised to academics, and not to employees in other organisations. The HEI sample size was not sufficient to conduct a complete psychometric analysis of the turnover intentions and the various retention factors of the sample. The HEI study alone could not adequately meet the criteria for determining the validity and reliability of the measurement scale and the developmental study with a larger sample suitable for additional statistical analysis was required.

Although the GDE sample was large ($n=1148$), it was obtained from a single district in the GDE and the remaining 14 school districts were not sampled. Future research studies would be advised to use random sampling techniques that incorporate all 15 districts in Gauteng in order to be able to generalise the results to Gauteng. The GDE data by itself can also not be considered to be representative of all the departments of education in all the provinces in South Africa.

The majority of respondents in the GDE sample were from primary schools (63%), with 27.3% from secondary schools and 8% of the sample are from LSEN schools (Learners with Special Educational Needs). An approximated ratio of seven primary school teachers to three high school teachers obtained in the current study does not

correspond to the ratio of five primary school teachers to four secondary school teachers in public ordinary schools in Gauteng in 2011, approximated from 28 969 primary teachers to 23 044 secondary teachers (GDE, 2012:28). This has implications in that the present sample had a larger component of primary school teachers when compared to the actual ratio and this may influence the interpretation and generalisability of the results.

HR practices as an emergent factor in this study are not necessarily the same as the HR practices mentioned by other researchers and although there is some overlap with regards to performance appraisals, access to information and communication from leadership, the factors are not equivalent (Guest & Conway, 2011; Huselid, 1995; Theron & Dodd, 2011).

10.4.1 Limitations of the study necessitating scale improvements

The final step in the scale development process requires that the scale be revised based on the outcome of the results and the length of the scale be reconsidered (Hinkin, 1998). Although the quantitative analysis in Chapters 7 and 8 are a key component of this scale revision, the scale improvements required are summarised here.

Analysis of high levels of missing data in the GDE sample in three of the questions led the researcher not to include the variables for *academic area of specialisation*, *teaching/administrative workload* and *professional registration categories* in cross-tabulations. Improvements to the layout and format of the questionnaire may reduce numbers of these missing variables:

- Utilising tick box categories for academic area of specialisation so that scarce skills analysis and intention to quit can be cross-tabulated;
- Structuring the question on teaching-administration load more clearly;
- Utilising tick box categories with specified professional registration categories in order to create less confusion.

The scale contains both 6-point and 4-point Likert scale formats. The 6-point scale format was chosen to facilitate subtle differentiation in the strength of satisfaction or dissatisfaction on items pertaining to compensation and relationship with line management (Section A.1 and A.2 in Addendum E). The 4-point scale format was chosen to encourage stronger opinions on institutional factors (Section B.3) but during the EFA and CFA analysis, it is acknowledged that a 4-point scale is less than ideal and in retrospect it would have been preferable to utilise a 6-point scale throughout.

An item construction error has been identified in the *Management Support* scale (HEI study) where two of the items contained dual constructs. Future versions of the scale should consider splitting these items into two or alternatively measuring only one of the constructs while retaining the same number of items. The items that would require revision in further versions of the scale are:

- C8: My line manager communicates regularly and clearly
- C9: My line manager gives timely and constructive feedback

First order CFA results and invariance testing indicated that the scale needs additional refinement especially with regards to the *Manager Relationship* sub-scale and specifically as the results indicate a lack of measurement equivalence for the PDI/non-PDI groups in the study. Vandenberg (2002:145-146) points out that if a scale fails to produce invariance there are different options a researcher can take in the future:

- adding new items, modifying existing items or removing items and then re-testing the scale to find out if the invariance has improved;
- developing a different scale for each of the groups;
- in addition, the lack of measurement equivalence can imply that differences between the two groups may be expected in future research and could be used as “hypothesis testing tools” to determine conceptual differences with regards to the construct being measured (Vandenberg, 2002:146). Thus future research with regards to talent retention constructs between Black, Coloured and Indian

employees in one group and White employees in another group could expect differences between the two groups when using the Talent Retention Scale.

The fit measure results following first order CFA produced contradictory results with some good results (IFI and CFI), but at times TLI marginal and RMSEA are marginal and this raises concerns about the fit of the two-factor structure in the *Manager Relationship* scale. It can imply that as a newly developed scale there is still room for improvement in the items and factor structure. The *Manager Relationship* scale produced relatively high correlations among factors which may be expected due to the nature of the two factors (*Appraisal and Feedback*, *Manager Support*) and an initial large eigenvalue. Although these two factors are conceptually distinct, the high correlations found in the sample may be due to the fact that performance management and formal appraisal and feedback is not institutionalised in basic education. Therefore, feedback and appraisal is done informally, and it may be that the relationship with the factor *Manager Support* is highly correlated within the context of this study, due to the informal nature of *Appraisal and Feedback*. After more replications of the scale in similar contexts, there may be sufficient evidence on whether *Manager Support* is distinctive from *Appraisal and Feedback*, or whether it is advisable to collapse the factors into a single factor, should the empirical results in the follow-up study support it.

In contrast, the overall measurement scale and 2CFA produced consistently good results for model fit and invariance testing. However, fit measures do respond favourably in more complex models. Therefore, although the more complex model utilised in the 2CFA process provided a better fit to the data, and the simplified scales were not clearly adequate, it should not prevent the use and further refinement of the sub-scales as independent measures. In the comprehensive Talent Retention Scale, more items can be considered as indicators of the first order latent variables, and specifically, the item pertaining to affirmative action (F5) requires rewording.

10.5 RECOMMENDATIONS FOR FURTHER RESEARCH

The item corrections and scale modifications discussed in the limitations to the study in section 10.4 should be considered in further versions of the scale. If any scale modifications including the deletion or addition of items are made in future research, it is recommended that an EFA is conducted again prior to CFA or SEM analysis in line with the recommendation of Worthington and Whittaker (2006).

Future research studies may benefit from including factual information in the form of performance appraisal results, when those are available, so that these could be linked to individual employees, as this would be helpful in determining whether the employees with higher levels of intention to quit are high-performing employees or not. This may be possible if the sample is pre-selected from a pool of high-performing employees only and if the organisations involved are willing to disclose whether or not they regard all employees as talented or only a select few. If employees are willing to be identified or tracked through a unique research number it may be possible to conduct episodic or longitudinal measurement and determine whether intention to quit translates into actual turnover. Episodic measurement would make it possible to determine if the routine, systematic questioning of employees at regular intervals, as recommended by Smither (2003:20), can determine whether talented employees are at risk of leaving.

The talent retention scale could be administered to a larger sample of academics in higher education in order to confirm the validity and reliability of the scale for this context. Further research using qualitative methods on the psychological dimension of turnover and retention of academics is recommended as the open-ended questions in the HEI study were not thoroughly completed.

A key limitation of cross-sectional research based on surveys is that the results can only be used to test theory and not to build theory (Shah & Corley, 2006:1822). The open-ended questions in the Talent Retention Scale can help identify additional retention and turnover variables that can contribute to theory building and that would

not have been identified from the scale results alone. It is recommended that future research includes the open-ended question results in the refinement of the Talent Retention Scale.

Two of the open-ended questions provided similar results and in order to prevent respondent fatigue in future assessments, only one of the two is necessary. It is recommended that the item “*What does your institution need to do to keep you as an employee?*” be retained in its present form and in its present position (prior to the Institutional Practices scale) as it elicited a more diverse range of responses than the clarification question after the Institutional Practices scale which stated “*where applicable please elaborate on the issues above that you are extremely dissatisfied with*” (Addendum E).

Future researchers would be required to adjust the Institutional Practices scale depending on the context of the research, to exclude or include applicable items such as satisfaction with “*funding for research publications from the institution; research funding from external bodies such as the National Research Foundation (NRF); funding from the institution for professional registrations*”. The Talent Retention Scale could then be administered to employees in a variety of different organisations to determine if the validity and reliability of findings will apply in different contexts.

The scale in its present form contains a 6-point Likert scale format in Section A and a 4-point scale format in Section B.3. It is recommended that further versions of the scale are adapted to use a 6-point Likert scale throughout.

Concurrent validity could be further established by administering existing talent retention measurement instruments to a sample at the same time as the TRS. The only existing scale administered was Cohen’s (1993) withdrawal intentions scale.

10.6 CONTRIBUTIONS OF THE PRESENT STUDY

The developmental study in higher education and in general education makes important contributions on a theoretical, methodological, and practical level. The major theoretical contribution of this study is the addition of sound empirical evidence for the turnover and retention factors that could encourage academics and educators in South Africa to leave or stay in education, as well as their current level of satisfaction with HR and institutional practices and direct line management support.

The research provides mixed results in the two factor theory of Herzberg (in Bassett-Jones & Lloyd, 2005) that labelled extrinsic satisfaction factors as 'hygiene' factors and included compensation, pay and the context in which the job is performed. Intrinsic satisfaction is referred to as 'motivators' and referred to the satisfaction that the employee obtains from the job itself. Support for intrinsic satisfaction occurs in the qualitative data obtained in the GDE sample and provides insight into the motivating factors that keep employees working in education, despite strong dissatisfaction with compensation (a hygiene factor). The quantitative results mostly provide support for 'hygiene factors' or extrinsic satisfaction. The Compensation scale results indicate that in the HEI study 56% of employees disagree with the adequacy of their basic salary and this is even more pronounced in the GDE study where 72% of employees view their basic salary as inadequate. Quantitative results in both the HEI and GDE studies using the ranking scale in the section, *most likely reasons to leave*, found that extrinsic satisfaction (rewards, recognition and advancement) were important to at least half of the HEI sample and that dissatisfaction with compensation was the major reason cited for intention to leave the organisation (54.2%). This trend was even more pronounced in the GDE sample where compensation emerged both as a likely push factor for 56.2% of respondents (*unhappy about compensation*) and a pull factor for 51.6% of respondents (*would leave for more pay in another company*). The research in the HEI sample supports previous research highlighting the turnover propensity of academics in South African HEIs (CHE, 2008; HESA, 2011; Pienaar & Bester, 2008; Robyn, 2012).

The findings of the majority of respondents appear to align with decision Path 4 of the Unfolding Model of Turnover as described by Lee *et al.* (1996:28). In Path 4 there is no psychological shock but the employee is dissatisfied with their job and may search for and evaluate other job alternatives, the decision speed is controlled and avoiding turnover is possible (Lee *et al.*, 1996; Harman *et al.*, 2007; Morrell *et al.*, 2001). In this research study various reasons for dissatisfaction were identified and it may be possible to remedy this dissatisfaction and prevent turnover.

From a methodological point of view, the research provides evidence that the new Talent Retention Scale is a valid and reliable measure. It measures what it sets out to measure, namely, the factors that contribute to the retention of academics in South African HEIs and retention of educators in general education. The combination of qualitative and quantitative data and analysis is valuable in understanding the domains of education and employee turnover and retention. It was possible to develop a scale in the South African context using items that are normally used in retrospective questioning as well as items that determine the risk of turnover.

In the HEI study, only exploratory factor analysis was done. In the GDE sample confirmatory factor analysis and invariance testing produced acceptable results but the Management support scale requires additional work on its items. In the GDE sample, the Talent Retention Scale was tested against an existing measure, namely Cohen's (1993) *Withdrawal Intentions Scale* that was called *Intention to Quit (ITQ)* in this study. Significant negative relationships were identified between the three subscales of the Talent Retention Scale: *Compensation and Recognition*, *Manager Relationship* and *Institutional Practices* as antecedent variables, and *Intention to Quit* as an outcome variable.

From a practical point of view, the research highlighted numerous turnover risks and potential retention factors that higher education and general education management and administration should attend to if they want to retain their key academic staff. The Talent Retention Scale if administered to employees in education concurrently with the Intention to Quit scale (Cohen, 1993) can help to determine whether academic employees and educators are at risk of leaving.

The recommendations from this study are that the National Government revisits and increases the budget allocation for academic salaries and general education salaries. The salary structures of talented, top-performing educators should be re-evaluated in line with the recommendations of the National Planning Commission (NPC, 2012) and the Centre for Development and Enterprise (CDE, 2011). In addition, HEIs should focus on designing suitable incentives and perks for academic staff, and offer fair and equitable bonus structures. Inadequate compensation may have emerged as the number one reason employees may leave their jobs in the future but it is not the only thing that can be changed in order to retain educators. Supervisors and line managers in HEIs and general education would benefit from receiving leadership development training in the following areas to improve employee retention:

- providing emotional recognition to employees;
- conducting fair performance appraisals;
- clear communication skills;
- constructive feedback skills;
- knowledge about the behaviours and attributes of good leaders and managers;
- clarification on the talent development processes available;
- clarification on effective implementation of HR practices .

In addition, HEIs should endeavour to create suitable job descriptions for academic staff members, with clear and measurable performance outputs in order to improve the performance management system as a retention factor. Career-path development and mentorship for academics should be more robust and reinforced for academic institutions. Finally, although HEIs and general education emphasises the importance of employment equity practices, these should be applied in a manner that would benefit all racial groups and not allow for discriminatory practices.

In general education, district management and departmental management should be aware of the findings relating to *Institutional Practices* and *Intention to Quit* as this could serve as a retention factor if managed correctly. Dissatisfaction with talent management policies that were expressed by 49% of the HEI sample could be investigated further and addressed by HR and institution management and this may assist in reducing voluntary turnover.

Education in South Africa has to manage turnover and retention of academics and quality educators as a strategic imperative, and early diagnosis of intention to quit and the factors that would encourage employees to leave or stay can provide valuable management information. This in turn can assist higher education and general education with management decisions that increase the retention of key employees.

10.7 CONCLUSIONS

Talent management is just as critical for schools as it is for business and should be a strategic priority in education (Davies & Davies, 2010). Education in South Africa faces numerous challenges. “Of 100 pupils that start school, only 50 will make it to Grade 12, 40 will pass, and only 12 will qualify for university” (Spaull, 2013:3). High quality educators are vital in the transmission of knowledge and improvement of learning outcomes (OECD, 2005) and teachers are essential in the upliftment and development of South Africa (National Planning Commission, 2012). One of the strategic goals to address teacher quality has been stated as “Improve the professionalism, teaching skills and subject knowledge of teachers throughout their entire careers and striving for a teacher workforce that is healthy and enjoys a sense of job satisfaction” (DBE, 2014:43). General education feeds higher education and the poorer the quality of student outcomes the more difficult it becomes to develop the next generation of high quality educators and academics. The current research highlights concerns about job satisfaction in education and the risk that employees would leave as soon as possible or when alternative opportunities become available as indicated by 48% of the employees in the HEI sample and 62% of employees in the GDE sample. The risk for the turnover of potential talent or young, newly

qualified educators, has been confirmed in this research in that 27% of educators in the age group 20–29 years were considering leaving education and had applied for jobs outside of general education. Thirty-five percent of respondents in general education indicated that they “*Would leave for a career change*” when asked to provide likely reasons for leaving. This potentially indicates disillusionment with the teaching profession for these respondents from the general education sample.

The results showed that the Talent Retention Scale, with higher order dimensions *Compensation and Recognition; Manager Relationship* and *Institutional Practices* showed significant negative relationships with *Intention to Quit*. Therefore, for the entire sample, it can be assumed that the proposed Talent Retention Scale seems to be useful to predict *Intention to Quit*, and the model fits the data adequately.

The research highlighted a potential retention factor in that the majority of employees in both samples were satisfied with the support and quality of the relationship with their direct manager. In addition the strongest motivating factor for staying in general education (43% of responses) centred on “*making a difference*” in the lives of children they educate, and making a difference to the future of South Africa by staying in the field of education. The present research lends support to the theory that the reasons employees leave and the reasons employees stay may not be the same (Harman *et al.*, 2007:53; Tanova & Holtom, 2008:1554).

The primary research objective of the study was to develop a scale for measuring talent retention in the South African context. Using a mixed methods research strategy, the contextual parameters for the scale instrument were provided through theory and qualitative interviews with key respondents from South African organisations and informed the items in the scale. Support for the validity and reliability of the scale was quantitatively assessed in a sample of employees from higher education and a different sample in general education. The investigation of the role of gender and employment equity groups on the strength of the relationship between the TRS sub-scales and ITQ, produced results which suggested that both gender and employment equity group moderated the relationships between the sub-

scales *Compensation and Recognition; Manager Relationship; Institutional Practices* and ITQ.

The academic contribution of this study lies partly in the mixed methods research strategy that was applied in this research that demonstrates that qualitative and quantitative research can bring about a more thorough understanding of the construct being studied than either research approach alone. A further academic contribution lies in the comprehensive assessment of the Talent Retention Scale, which is proposed as a suitable scale for talent management in an educational environment. The scale may also be useful in other contexts, however, it is strongly recommended that item content should be critically evaluated for their suitability in other contexts. On a practical level, this study contributed an understanding of the most critical factors that require policy and practical changes to ensure talent is retained within education institutions. Although the scale has some limitations, the Talent Retention Scale has contributed to the body of knowledge in organisational behaviour and talent retention.

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ADDENDUM A: DATA COLLECTION INSTRUMENT: SEMI-STRUCTURED INTERVIEWS



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DATE

Interview Schedule for Semi-structured interview with key participants

This interview forms part of an academic research study conducted by Marguerite Theron, Doctoral student in Organisational Behaviour, from the Department Human Resource Management at the University of Pretoria.

Thank you for agreeing to assist with the development of an employee retention measurement tool. You have been selected to participate due to your knowledge, experience and skills in the areas of employee turnover and/or employee retention. There are no correct or wrong answers to these questions. The questions merely

provide a broad structure for our discussion. The value of this discussion lies in your open, honest opinion on employee retention.

Do you have any questions or concerns before we start with the interview?

I hereby give my informed consent to take part in the research project

X

Research respondent
Title

How does your organisation identify talented employees that they would like to retain?

What happens when an employee resigns from the organisation?

Is any exit management research conducted? If so, how and what happens to the results? What is your opinion on the value of the exit management research? What is the exit management research used for?

How would you describe your organisations current retention management strategy? In your opinion, what works well to help keep top-performing employees?

If you were designing an employee retention tool, which questions would you like to see asked? Which questions do you think would add value to employee retention research?

What organisational level data (facts, figures, trends) do you think is needed to measure and manage employee turnover?

Do you have any further comments about employee turnover or employee retention?

Do you have any questions about the research process and your involvement in it?

Thank you again for agreeing to assist with the development of an employee retention measurement tool as part of academic research

ADDENDUM B: INFORMED CONSENT SURVEY QUESTIONNAIRE



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+27(0)12-420-3574

DATE

Dear Employee

You are invited to participate in a confidential survey. This survey forms part of an academic research study conducted by Marguerite Theron, doctoral student in Organisational Behaviour from the Department Human Resource Management at the University of Pretoria.

Your answers will assist in developing an employee retention measurement instrument aimed at retaining top-performing employees in your organisation and similar organisations. Your organisation has agreed to participate in this study as they require accurate information on how to keep top-performing, talented employees. Please answer the questions as completely and honestly as possible.

The results obtained from the electronic survey will be sent to Ms Theron who will ensure the confidentiality of your response.

Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.

On the first page of the survey you are given the option:

I consent to participate in the survey:

Yes

No

The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request. The Human Resources Department at your organisation will be given group results and feedback only.

Please contact my supervisor, Dr. N. Barkhuizen at: Tel. 012 420 6311 or e-mail nicolene.barkhuizen@nwu.ac.za if you have any questions or comments regarding the study.

Yours sincerely

Marguerite Theron

Cel 0826591051

Email: margueritet@telkomsa.net

ADDENDUM C: INFORMED CONSENT GAUTENG DEPARTMENT OF EDUCATION



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DATE

For Attention: All Principals
Gauteng East District
Gauteng Department of Education

Dear Sir or Madam

We are inviting you and the educators at your school to participate in a confidential survey. This survey forms part of an academic research study conducted by Marguerite Theron, doctoral student in Organisational Behaviour from the Department *Human Resource Management* at the University of Pretoria. This research has been approved by the Gauteng Department of Education and the letter of approval is attached.

The questions will assist in validating an employee retention measurement instrument aimed at retaining top-performing employees in your school and similar educational institutions. The Gauteng Department of Education and specifically Gauteng East District has agreed to participate in this study as they require accurate information on how to keep top-performing, talented employees. Please answer the questions as completely and honestly as possible.

The results obtained from the survey will be sent to Ms Theron who will ensure the confidentiality of your response. Your participation in this study is very important to

us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.

On the first page of the survey you are given the option:

I consent to participate in the survey:

- Yes
- No

The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request. The Gauteng Department of Education will be given group results and feedback only.

Please contact my supervisor, Dr.Yvonne du Plessis (012 420 3108) if you have any questions or comments regarding the study.

Yours sincerely

Marguerite Theron

Cel 0826591051

Email: margueritet@telkomsa.net

**ADDENDUM D: CONSENT AND SURVEY USED FOR
HEI STUDY**

SANPAD RESEARCH PROJECT: Higher Education Attraction, Retention and Development

The Department of Human Resource Management, University of Pretoria is conducting a research project on the Attraction, Development and Retention of Academic Talent for Sustainability in South African Higher Education Institutions in collaboration with the Vrije University, Amsterdam, The Netherlands. The project is funded by The South Africa-Netherlands Research Programme on Alternatives in Development (SANPAD).

January 2011 – June 2013



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**UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA**

Dear Respondent,

The Department of Human Resource Management, University of Pretoria is conducting a research project on the “**Attraction, Development and Retention of Academic Talent for Sustainability in South African Higher Education Institutions**” in collaboration with the Vrije University, Amsterdam, The Netherlands. The project is funded by The South Africa-Netherlands Research Programme on Alternatives in Development (SANPAD).

The main objective of this research project is to identify the factors and practices that attract, develop and retain academic staff members in South African Higher Education Institutions. We would like to invite you to participate in this very important project.

All information will be treated confidentially and will for no reason other than the purpose of this study be distributed or used. We function under a code of ethics that forbids us to distribute or use information otherwise. So please be honest with your responses, as it will help to ensure the success of this project.

This research project has been approved by the Vice Chancellor of the University of Pretoria, Prof Cheryl De la Rey and the Vice-Principal: Research and Postgraduate Education, Professor Stephanie Burton. This research project is further supported by Higher Education South Africa.

How we would like you to complete the questionnaire:

- ⇒ Please complete **all the questionnaires**.
- ⇒ In cases where you have to complete the information in writing, please print text clearly.
- ⇒ Please use a **black pen**.
- ⇒ Please give your first and natural answer – try not to dwell too long on each question.
- ⇒ Please base your answers on how you most recently felt (+/- the last 3 months), unless the question asked you to do otherwise.

I hereby fully consent to participate in this study.

Yes

No

For any further enquiries please feel welcome to contact any of the following project team members:

Prof Nicolene Barkhuizen Project leader nicolene.barkhuizen@nwu.ac.za	Prof Yvonne Du Plessis yvonne.duplessis@up.ac.za	Prof Karel Stanz karel.stanz@up.ac.za
---	--	--

1.

Biographical Questionnaire

1. Please state the **city/ town** and **university** where you are currently working:

1.1 City/ Town

1.2 University

2. **Gender**

Male 1 Female 2

3. Please indicate your **Ethnicity**

Black	<input style="width: 20px; height: 20px;" type="text"/> 1
Coloured	<input style="width: 20px; height: 20px;" type="text"/> 2
Indian/ Asian	<input style="width: 20px; height: 20px;" type="text"/> 3
White	<input style="width: 20px; height: 20px;" type="text"/> 4
Other	<input style="width: 20px; height: 20px;" type="text"/> 5

4. **2.** 3. Please indicate your **home language**:

Afrikaans	<input style="width: 20px; height: 20px;" type="text"/> 1	English	<input style="width: 20px; height: 20px;" type="text"/> 2	SePedi	<input style="width: 20px; height: 20px;" type="text"/> 3	SeSotho	<input style="width: 20px; height: 20px;" type="text"/> 4	SeTswana	<input style="width: 20px; height: 20px;" type="text"/> 5	SiSwati	<input style="width: 20px; height: 20px;" type="text"/> 6
TshiVenda	<input style="width: 20px; height: 20px;" type="text"/> 7	IsiZulu	<input style="width: 20px; height: 20px;" type="text"/> 8	IsiNdebele	<input style="width: 20px; height: 20px;" type="text"/> 9	IsiXhosa	<input style="width: 20px; height: 20px;" type="text"/> 10	XiTsonga	<input style="width: 20px; height: 20px;" type="text"/> 11	Other	<input style="width: 20px; height: 20px;" type="text"/> 12

5. **5.** Please state your **age**: (in years)

6. Please indicate your **marital status**:

Single/ widow/ widower	<input style="width: 20px; height: 20px;" type="text"/> 1
Engaged/ in a relationship	<input style="width: 20px; height: 20px;" type="text"/> 2
Married	<input style="width: 20px; height: 20px;" type="text"/> 3
Divorced	<input style="width: 20px; height: 20px;" type="text"/> 4
Separate	<input style="width: 20px; height: 20px;" type="text"/> 5

7. Please indicate your **highest level of education/qualification**

Bachelor's Degree	<input style="width: 20px; height: 20px;" type="text"/> 1
4 year Degree or Honours	<input style="width: 20px; height: 20px;" type="text"/> 2
Masters Degree	<input style="width: 20px; height: 20px;" type="text"/> 3
Doctoral Degree	<input style="width: 20px; height: 20px;" type="text"/> 4

Biographical Questionnaire

8. Please state your **academic discipline/area of specialisation**.

9. Please indicate the **department** in which you are currently working:

10. Do you hold any **professional registrations**? Yes 1 No 2

If yes, please specify.

11. Please indicate your **job title**:

Junior lecturer 1 Lecturer 2 Senior lecturer 3 Associate professor 4 Professor 5

12. As an academic staff member of your university, how would you categorise your main job? Please put a cross in one box only which best describes the type of work you do

Academic Researcher 1 Academic Lecturing 2 Or both research and lecturing? 3

13. How many years have you been working at your current institution?

14. How many years have you been employed in your current job title?

15. How many chances of job promotions have you had in the past five years in your career?

16. On what basis are you employed?

Permanent	Temporary	Fixed-term	Hourly paid
1	2	3	4

17. Please give a rough estimate of the total number of hours you work in a typical week:

Up to 10 (1)	11 – 20 (2)	21 – 30 (3)
31 – 40 (4)	41 – 50 (5)	51 or more (6)

F. Employee Retention
⇒ **Survey**

The purpose of this survey is to determine the factors that may influence you to stay at your institution. Please complete all the statements as it applies to you.

SECTION A: FACTORS THAT WOULD ENCOURAGE YOU TO STAY

A 1: This part aims to determine how you feel about your compensation and recognition for the work that you do.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:							
6	7. Statements	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
8	9.	1	2	3	4	5	6
1	My basic salary is adequate	1	2	3	4	5	6
2	My medical aid benefits are adequate	1	2	3	4	5	6
3	My pension benefits are adequate	1	2	3	4	5	6
4	I am praised and thanked for the work that I do	1	2	3	4	5	6
5	I am fairly compensated for the work that I do	1	2	3	4	5	6
6	The bonus structure is fair	1	2	3	4	5	6
7	The incentives and perks make my job worthwhile	1	2	3	4	5	6
8	The bonus structure reflects my contribution to the institution	1	2	3	4	5	6
9	I get adequate emotional recognition for the work that I do	1	2	3	4	5	6

Any additional comments regarding your current compensation and recognition at your institution (Please write/print clearly)

A 2: The following part pertains to how you would you rate your relationship with your supervisor/manager or direct line manager.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:							
1 11. Statements		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1 13.		1	2	3	4	5	6
1	I trust my direct line manager	1	2	3	4	5	6
2	I can communicate easily with my line manager	1	2	3	4	5	6
3	My line manager has my best interests at heart	1	2	3	4	5	6
4	Other people in our team work well with my line manager	1	2	3	4	5	6
5	My line manager supports my individual career development	1	2	3	4	5	6
6	My line manager conducts regular performance appraisals	1	2	3	4	5	6
7	My line manager conducts fair performance appraisals	1	2	3	4	5	6
8	My line manager communicates regularly and clearly	1	2	3	4	5	6
9	My line manager gives timely and constructive feedback	1	2	3	4	5	6

Any additional comments regarding your current relationship with your line manager at your institution:

Any additional comments regarding what your institution need to do to keep you as an academic employee?

SECTION B: FACTORS THAT MAY INFLUENCE YOU TO LEAVE

B 1: Have you ever looked for another job? Please choose the appropriate answer below by ticking in the box next to it.

		Yes	No
1	In the same institution in a different section	1	2
2	Applied for a promotion in the same institution	1	2
3	...at another academic institution	1	2
4	... in another organisation(not in academia)	1	2
5	... but only placed my CV on the web	1	2
6	I have been headhunted by another organisation	1	2
7	I have been approached by a recruiting agency	1	2

If you have answered yes to any of the above options please specify why:

B 2: If you ever think of leaving your institution what would be the most likely reasons?
(please choose your top 5 reasons)

1	Unhappy about financial compensation	
2	Unhappy about company policies	
3	Unhappy about career development opportunities	
4	Unhappy about training opportunities	
5	Unhappy about the job itself	
6	Unhappy about the number of hours I am required to work	
7	Unhappy about the people I have to work with	
8	Would leave for a promotion	
9	Would leave for more pay in another company	
10	Would leave for a job closer to home	
11	Would leave for a career change	
12	Would leave to start my own business	
13	Retirement	
14	Would only leave if I was retrenched	
15	Would leave for ill health/ disability	
16	Would leave for personal reasons such as family responsibility	
17	Would leave if my spouse was transferred	
18	Would leave to study further	

Does the institution need to make any changes in order to keep talented employees? If yes, please specify what needs to be done:

B 3: To what extent are you satisfied with the following factors in your institution?

1		Extremely Dissatisfied	Dissatisfied	Satisfied	Extremely Satisfied
15. Statements		1	2	3	4
1	Sufficient access to information in order to do my job	1	2	3	4
2	Support from the HR department	1	2	3	4
3	Changes and restructuring in the institution	1	2	3	4
4	Opportunity to engage in community service projects	1	2	3	4
5	Affirmative action	1	2	3	4
6	Sufficient cultural diversity in the institution	1	2	3	4
7	Sufficient respect for my culture in the institution	1	2	3	4
8	Institutional leadership	1	2	3	4
9	Institutional values	1	2	3	4
10	Institutional strategy	1	2	3	4
11	Communication from leadership	1	2	3	4
12	Talent management policies in the institution	1	2	3	4
13	Mentorship opportunities for academic staff	1	2	3	4
14	Funding to attend conferences from the Institution	1	2	3	4
15	Funding for Research Publications from the Institution	1	2	3	4
16	Research funding from External Bodies such as the National Research Foundation (NRF)	1	2	3	4
17	Funding from the Institution for Professional Registrations	1	2	3	4

Where applicable please elaborate on the issues above that you are extremely dissatisfied with:

B 4: Listed below are statements that reflect your intention to leave the organisation in the near future. Please indicate the degree of your agreement or disagreement with each statement by crossing out the answer that best represents your point of view.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:							
		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	18. Statements	1	2	3	4	5	6
1	I think a lot about leaving the organisation.	1	2	3	4	5	6
2	I am currently searching for employment outside this organisation.	1	2	3	4	5	6
3	When possible, I will leave the organisation.	1	2	3	4	5	6

What motivates you to stay at your current institution?

Would you recommend your current institution to a friend looking for a job?

⇒

Yes 1	No 2
-------	------

We thank you for your time and participation.

ADDENDUM E: CONSENT AND SURVEY USED FOR GENERAL EDUCATION STUDY



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Dear Employee

You are invited to participate in a confidential survey. This survey forms part of an academic research study on Talent Retention conducted by Marguerite Theron, doctoral student in Organisational Behaviour from the Department *Human Resource Management* at the University of Pretoria.

The main objective of this research project is to identify the factors and practices that attract, develop and retain academic staff members in educational institutions. We would like to invite you to participate in this very important project.

Your answers will assist in developing an employee retention measurement instrument aimed at retaining top performing employees in your school and similar educational institutions. The Gauteng Department of Education has agreed to participate in this study as they would benefit from accurate information on how to keep and develop top performing, talented employees. This study has also been approved by CLI: Teacher Development Unit and the Gauteng East District Director.

The results obtained from the survey will be sent to Ms Theron who will ensure the confidentiality of your response. Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences. The Gauteng Education Department will be given group results and feedback only. No individual names or names of schools will be used. All information will be treated confidentially and will for no reason other than the purpose of this study be distributed or used. We function under a code of ethics that forbids us to distribute or use information otherwise. So please be honest with your responses, as it will help to ensure the success of this project.

How we would like you to complete the questionnaire:

- ⇒ Please complete **all the questions**. Please indicate your selection with an **X**.
- ⇒ In cases where you have to complete the information in writing, please print text clearly.
- ⇒ Please give your first and natural answer – try not to dwell too long on each question.
- ⇒ Please base your answers on how you most recently felt (+/- the last 3 months), unless the question asked you to do otherwise.
- ⇒ Please place your completed questionnaire in the addressed A5 envelope and seal it before returning.

I hereby fully consent to participate in this study.

Yes	No
-----	----

For any further enquiries please feel welcome to contact any of the following project team members:

Prof Nicolene Barkhuizen nicolene.barkhuizen@nwu.ac.za	Prof Yvonne Du Plessis yvonne.duplessis@up.ac.za	Marguerite Theron margueritet@telkomsa.net
---	---	---

Biographical Questionnaire

1. Please state the **city/ town** and **type of school** where you are currently working:

1.1 City/ Town

1.2 Type of school (e.g. Primary, Secondary, LSEN, Comprehensive, ECD site)

2. Gender

Male

Female

3. Please indicate your **Ethnicity**

Black

Coloured

Indian/ Asian

White

Other

4. Please indicate your **home language**:

Afrikaans

English

SePedi

SeSotho

SeTswana

SiSwati

TshiVenda

IsiZulu

IsiNdebele

IsiXhosa

XiTsonga

Other

5. Please state your **age**: (in years)

6. Please indicate your **marital status**:

Single/ widow/ widower

Engaged/ in a relationship

Married

Divorced

Separated

Addendum D

7. Please indicate your highest level of education/qualification

- Diploma
Bachelor's Degree
4 year Degree or Honours
Master's Degree
Doctoral Degree
Other qualification: Please specify

A
1
2
3
4

8. Please state your academic discipline/area of specialisation. (For example, Maths, Science, Grade R, Special needs etc.)

9. Do you hold any professional registrations? Yes 1 No 2

If yes, please specify.

10. Please indicate your job title:

Educator	1	Head of Dept	2	Deputy Principal	3	Principal	4	Office based official	5
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Other : _____

11. As a staff member of your institution, how would you categorise your main job? Please put a cross in one box only which best describes the type of work you do

Teaching	1	Administration	2	Or both teaching and administration?	3
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12. How many years have you been working at your current institution?

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13. How many years have you been employed in your current job title?

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14. On what basis are you employed?

Permanent 1	Temporary 2	Fixed-term 3	Hourly paid 4
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15. Please give a rough estimate of the total number of hours you work in a typical week:

Up to 10 (1)	11 – 20 (2)	21 – 30 (3)
31 – 40 (4)	41 – 50 (5)	51 or more (6)

Employee Retention Survey

The purpose of this survey is to determine the factors that may influence you to stay at your institution. Please complete all the statements as it applies to you.

SECTION A: FACTORS THAT WOULD ENCOURAGE YOU TO STAY

A 1: This part aims to determine how you feel about your compensation and recognition for the work that you do.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:							
Statements		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
		1	2	3	4	5	6
1	My basic salary is adequate	1	2	3	4	5	6
2	My medical aid benefits are adequate	1	2	3	4	5	6
3	My pension benefits are adequate	1	2	3	4	5	6
4	I am praised and thanked for the work that I do	1	2	3	4	5	6
5	I am fairly compensated for the work that I do	1	2	3	4	5	6
6	The bonus structure is fair	1	2	3	4	5	6
7	The incentives and perks make my job worthwhile	1	2	3	4	5	6
8	The bonus structure reflects my contribution to the institution	1	2	3	4	5	6
9	I get adequate emotional recognition for the work that I do	1	2	3	4	5	6

Any additional comments regarding your current compensation and recognition at your institution (Please write/print clearly)

A 2: The following part pertains to how you would you rate your relationship with your supervisor/manager or direct line manager.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Statements		1	2	3	4	5	6
1	I trust my direct line manager	1	2	3	4	5	6
2	I can communicate easily with my line manager	1	2	3	4	5	6
3	My line manager has my best interests at heart	1	2	3	4	5	6
4	Other people in our team work well with my line manager	1	2	3	4	5	6
5	My line manager supports my individual career development	1	2	3	4	5	6
6	My line manager conducts regular performance appraisals	1	2	3	4	5	6
7	My line manager conducts fair performance appraisals	1	2	3	4	5	6
8	My line manager communicates regularly and clearly	1	2	3	4	5	6
9	My line manager gives timely and constructive feedback	1	2	3	4	5	6

Any additional comments regarding your current relationship with your line manager at your institution:

Any additional comments regarding what your institution needs to do to keep you as an employee?

SECTION B: FACTORS THAT MAY INFLUENCE YOU TO LEAVE

B 1: Have you ever looked for another job? Please choose the appropriate answer below by ticking in the box next to it.

Yes No

1	In the same institution in a different section	1	2
2	Applied for a promotion in the same institution	1	2
3	Applied for a job at another academic institution	1	2
4	Applied for a job in another organisation(not in academia/education)	1	2
5	I have only placed my CV on the web	1	2
6	I have been headhunted by another organisation	1	2
7	I have been approached by a recruiting agency	1	2

If you have answered yes to any of the above options please specify why:

B2: If you ever think of leaving your institution what would be the most likely reasons? (**Please choose your top 5 reasons by marking your choices with an X**)

1	Unhappy about financial compensation	
2	Unhappy about company policies	
3	Unhappy about career development opportunities	
4	Unhappy about training opportunities	
5	Unhappy about the job itself	
6	Unhappy about the number of hours I am required to work	
7	Unhappy about the people I have to work with	
8	Would leave for a promotion	
9	Would leave for more pay in another company	
10	Would leave for a job closer to home	
11	Would leave for a career change	
12	Would leave to start my own business	
13	Retirement	

14	Would only leave if I was retrenched	
15	Would leave for ill health/ disability	
16	Would leave for personal reasons such as family responsibility	
17	Would leave if my spouse was transferred	
18	Would leave to study further	

Does the institution need to make any changes in order to keep talented employees? If yes, please specify what needs to be done:

B 3: To what extent are you satisfied with the following factors in your institution?

Statements		Extremely Dissatisfied	Dissatisfied	Satisfied	Extremely Satisfied
		1	2	3	4
1	Sufficient access to information in order to do my job	1	2	3	4
2	Support from the HR department	1	2	3	4
3	Changes and restructuring in the institution	1	2	3	4
4	Opportunity to engage in community service projects	1	2	3	4
5	Affirmative action	1	2	3	4
6	Sufficient cultural diversity in the institution	1	2	3	4
7	Sufficient respect for my culture in the institution	1	2	3	4
8	Institutional leadership	1	2	3	4
9	Institutional values	1	2	3	4
10	Institutional strategy	1	2	3	4
11	Communication from leadership	1	2	3	4
12	Talent management policies in the institution	1	2	3	4
13	Mentorship opportunities for academic staff	1	2	3	4
14	Funding to attend conferences from the Institution	1	2	3	4

Where applicable please elaborate on the issues above that you are extremely dissatisfied with:

B 4: Listed below are statements that reflect your intention to leave the organisation in the near future. Please indicate the degree of your agreement or disagreement with each statement by crossing out the answer that best represents your point of view.

Cross <u>one</u> of the six categories from <i>Strongly disagree</i> (1) to <i>Strongly agree</i> (6) for each statement as it applies to you:							
Statements		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
		1	2	3	4	5	6
1	I think a lot about leaving the organisation.	1	2	3	4	5	6
2	I am currently searching for employment outside this organisation.	1	2	3	4	5	6
3	When possible, I will leave the organisation.	1	2	3	4	5	6

What motivates you to stay at your current institution?

Would you recommend your current institution to a friend looking for a job?

Yes 1	No 2
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THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.