

## CHAPTER 10

### PRESENTATION OF RESULTS

#### 10.1 INTRODUCTION

The results of the statistical analysis of data are presented in this chapter. Correlational statistics will be used to ascertain the relationship, if any, between the dimensions of the Survey of Work Values (Wollack et al, 1971), the Internal Control Index (Duttweiler, 1984), the Value Survey Module (Hofstede, 1980), and the Multifactor Leadership Questionnaire (Bass et al, 1997). Inferential statistics, including Student's T-test and one-way analysis of variance will be employed to determine differences, if any, between the differential levels of the main independent variables. The non-parametric tests Mann-Whitney U and Kruskal Wallis one way analysis of variance were also applied in cases where the distribution was clearly not normal. The main independent variables, viz gender, age, home language, religion, educational qualifications, occupational level (rank), population group, and work experience as well as, where applicable, their two-way and/or multiple interactions are also compared and investigated by means of multiple analysis of variance in combination with Scheffé tests.

#### 10.2 STATISTICS OF ASSOCIATION

Methods of correlation are also referred to as statistics of association. Bohrnstedt et al (1988: 491) define the correlation coefficient as “ a measure of association between two continuous variables that estimates the direction and strength of linear relationship”. The definition of Ott et al (1990: 696) is similar: a “measure of linear dependence between two random variables”. The Bravais-Pearson product-moment correlation coefficient, which is the most commonly used method of correlation, is symbolised by  $r_{xy}$  in a sample. This correlation was calculated to investigate the association between the six dimensions of the Survey of Work Values of Wollack et al (1971), the Internal Control Index of Duttweiler (1984), the four dimensions of Hofstede's (1980) Value Survey Module, and the eight leadership dimensions and three leadership outcomes of the Multifactor Leadership Questionnaire (Bass et al, 1997). The results are presented in Table 10.1.

Table 10.1: Bravais-Pearson correlation coefficients: The twenty three dimensions.

		Proud	Involve	Activity	Earnings	Social
Proud	Pearson Correlation	1	.435*	.511*	-.056	-.162*
	Sig. (2-tailed)	.	.000	.000	.206	.000
	N	509	509	509	509	509
Involve	Pearson Correlation	.435*	1	.443*	-.148*	-.072
	Sig. (2-tailed)	.000	.	.000	.001	.107
	N	509	509	509	509	509
Activity	Pearson Correlation	.511*	.443*	1	-.166*	-.173*
	Sig. (2-tailed)	.000	.000	.	.000	.000
	N	509	509	509	509	509
Earnings	Pearson Correlation	-.056	-.148*	-.166*	1	.265*
	Sig. (2-tailed)	.206	.001	.000	.	.000
	N	509	509	509	509	509
Social	Pearson Correlation	-.162*	-.072	-.173*	.265*	1
	Sig. (2-tailed)	.000	.107	.000	.000	.
	N	509	509	509	509	509
Progress	Pearson Correlation	.254*	.217*	.250*	.115*	-.016
	Sig. (2-tailed)	.000	.000	.000	.010	.715
	N	509	509	509	509	509
ICI	Pearson Correlation	.421*	.410*	.441*	-.111*	-.252*
	Sig. (2-tailed)	.000	.000	.000	.012	.000
	N	509	509	509	509	509
PD	Pearson Correlation	.029	.018	.106*	-.058	-.004
	Sig. (2-tailed)	.520	.681	.018	.193	.923
	N	506	506	506	506	506
UA	Pearson Correlation	.104*	.082	.072	-.141*	.000
	Sig. (2-tailed)	.019	.066	.107	.001	.991
	N	509	509	509	509	509
Indiv	Pearson Correlation	-.326*	-.261*	-.262*	.100*	.207*
	Sig. (2-tailed)	.000	.000	.000	.024	.000
	N	509	509	509	509	509
Masc	Pearson Correlation	-.320*	-.224*	-.260*	-.025	.157*
	Sig. (2-tailed)	.000	.000	.000	.580	.000
	N	509	509	509	509	509
InfluenceA	Pearson Correlation	.208*	.323*	.194*	-.018	-.036
	Sig. (2-tailed)	.000	.000	.000	.680	.413
	N	509	509	509	509	509
InfluenceB	Pearson Correlation	.183*	.369*	.211*	-.072	-.028
	Sig. (2-tailed)	.000	.000	.000	.107	.524
	N	509	509	509	509	509

Table 10.1: (Continued)

Motivation	Pearson Correlation	.153*	.311*	.195*	-.062	-.022
	Sig. (2-tailed)	.001	.000	.000	.166	.622
	N	509	509	509	509	509
Stimulation	Pearson Correlation	.201*	.264*	.204*	-.101*	-.086
	Sig. (2-tailed)	.000	.000	.000	.022	.052
	N	509	509	509	509	509
Consider	Pearson Correlation	.265*	.269*	.228*	-.082	-.094*
	Sig. (2-tailed)	.000	.000	.000	.066	.034
	N	509	509	509	509	509
Constructive	Pearson Correlation	.189*	.293*	.197*	.000	-.012
	Sig. (2-tailed)	.000	.000	.000	.992	.781
	N	509	509	509	509	509
Active	Pearson Correlation	.083	.154*	.081	.094*	.078
	Sig. (2-tailed)	.062	.000	.067	.033	.081
	N	509	509	509	509	509
Passive	Pearson Correlation	-.098*	-.166*	-.131*	.095*	.109*
	Sig. (2-tailed)	.027	.000	.003	.031	.013
	N	509	509	509	509	509
Laissez	Pearson Correlation	-.211*	-.298*	-.243*	.009	.085
	Sig. (2-tailed)	.000	.000	.000	.832	.055
	N	509	509	509	509	509
Effort	Pearson Correlation	.162*	.194*	.161*	-.004	.054
	Sig. (2-tailed)	.000	.000	.000	.926	.228
	N	509	509	509	509	509
Effective	Pearson Correlation	.126*	.188*	.142*	-.031	-.010
	Sig. (2-tailed)	.004	.000	.001	.485	.827
	N	509	509	509	509	509
Satisfaction	Pearson Correlation	.182*	.227*	.215*	-.046	.002
	Sig. (2-tailed)	.000	.000	.000	.302	.959
	N	509	509	509	509	509

Table 10.1: (Continued)

		Progress	ICI	PD	UA	Indiv
Proud	Pearson Correlation	.254*	.421*	.029	.104*	-.326*
	Sig. (2-tailed)	.000	.000	.520	.019	.000
	N	509	509	506	509	509
Involve	Pearson Correlation	.217*	.410*	.018	.082	-.261*
	Sig. (2-tailed)	.000	.000	.681	.066	.000
	N	509	509	506	509	509
Activity	Pearson Correlation	.250*	.441*	.106*	.072	-.262*
	Sig. (2-tailed)	.000	.000	.018	.107	.000
	N	509	509	506	509	509
Earnings	Pearson Correlation	.115*	-.111*	-.058	-.141*	.100*
	Sig. (2-tailed)	.010	.012	.193	.001	.024
	N	509	509	506	509	509
Social	Pearson Correlation	-.016	-.252*	-.004	.000	.207*
	Sig. (2-tailed)	.715	.000	.923	.991	.000
	N	509	509	506	509	509
Progress	Pearson Correlation	1	.291*	.022	.015	-.173*
	Sig. (2-tailed)	.	.000	.628	.741	.000
	N	509	509	506	509	509
ICI	Pearson Correlation	.291*	1	.054	.052	-.370*
	Sig. (2-tailed)	.000	.	.223	.244	.000
	N	509	509	506	509	509
PD	Pearson Correlation	.022	.054	1	.146*	-.014
	Sig. (2-tailed)	.628	.223	.	.001	.755
	N	506	506	506	506	506
UA	Pearson Correlation	.015	.052	.146*	1	-.053
	Sig. (2-tailed)	.741	.244	.001	.	.231
	N	509	509	506	509	509
Indiv	Pearson Correlation	-.173*	-.370*	-.014	-.053	1
	Sig. (2-tailed)	.000	.000	.755	.231	.
	N	509	509	506	509	509
Masc	Pearson Correlation	-.242*	-.320*	-.028	-.013	.764*
	Sig. (2-tailed)	.000	.000	.529	.778	.000
	N	509	509	506	509	509
InfluenceA	Pearson Correlation	.185*	.346*	.057	.044	-.207*
	Sig. (2-tailed)	.000	.000	.201	.323	.000
	N	509	509	506	509	509
InfluenceB	Pearson Correlation	.126*	.324*	.082	.013	-.220*
	Sig. (2-tailed)	.005	.000	.064	.772	.000
	N	509	509	506	509	509

Table 10.1: (Continued)

Motivation	Pearson Correlation	.191*	.245*	.052	.041	-.182*
	Sig. (2-tailed)	.000	.000	.243	.354	.000
	N	509	509	506	509	509
Stimulation	Pearson Correlation	.189*	.327*	.063	.064	-.273*
	Sig. (2-tailed)	.000	.000	.157	.152	.000
	N	509	509	506	509	509
Consider	Pearson Correlation	.126*	.359*	.064	.039	-.236*
	Sig. (2-tailed)	.005	.000	.151	.379	.000
	N	509	509	506	509	509
Constructive	Pearson Correlation	.172*	.271*	.072	-.012	-.203*
	Sig. (2-tailed)	.000	.000	.107	.788	.000
	N	509	509	506	509	509
Active	Pearson Correlation	.041	.082	-.103*	-.147*	-.011
	Sig. (2-tailed)	.351	.066	.021	.001	.797
	N	509	509	506	509	509
Passive	Pearson Correlation	-.090*	-.307*	-.044	-.032	.128*
	Sig. (2-tailed)	.042	.000	.323	.470	.004
	N	509	509	506	509	509
Laissez	Pearson Correlation	-.175*	-.392*	-.027	-.090*	.193*
	Sig. (2-tailed)	.000	.000	.539	.043	.000
	N	509	509	506	509	509
Effort	Pearson Correlation	.154*	.260*	.029	.035	-.145*
	Sig. (2-tailed)	.000	.000	.509	.437	.001
	N	509	509	506	509	509
Effective	Pearson Correlation	.160*	.344*	.055	.004	-.106*
	Sig. (2-tailed)	.000	.000	.218	.920	.016
	N	509	509	506	509	509
Satisfaction	Pearson Correlation	.173*	.304*	.054	.056	-.136*
	Sig. (2-tailed)	.000	.000	.227	.204	.002
	N	509	509	506	509	509

Table 10.1: (Continued)

		Masc	Influe A	Influe B	Motiv	Stim
Proud	Pearson Correlation	-.320*	.208*	.183*	.153*	.201*
	Sig. (2-tailed)	.000	.000	.000	.001	.000
	N	509	509	509	509	509
Involve	Pearson Correlation	-.224*	.323*	.369*	.311*	.264*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Activity	Pearson Correlation	-.260*	.194*	.211*	.195*	.204*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Earnings	Pearson Correlation	-.025	-.018	-.072	-.062	-.101*
	Sig. (2-tailed)	.580	.680	.107	.166	.022
	N	509	509	509	509	509
Social	Pearson Correlation	.157*	-.036	-.028	-.022	-.086
	Sig. (2-tailed)	.000	.413	.524	.622	.052
	N	509	509	509	509	509
Progress	Pearson Correlation	-.242*	.185*	.126*	.191*	.189*
	Sig. (2-tailed)	.000	.000	.005	.000	.000
	N	509	509	509	509	509
ICI	Pearson Correlation	-.320*	.346*	.324*	.245*	.327*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
PD	Pearson Correlation	-.028	.057	.082	.052	.063
	Sig. (2-tailed)	.529	.201	.064	.243	.157
	N	506	506	506	506	506
UA	Pearson Correlation	-.013	.044	.013	.041	.064
	Sig. (2-tailed)	.778	.323	.772	.354	.152
	N	509	509	509	509	509
Indiv	Pearson Correlation	.764*	-.207*	-.220*	-.182*	-.273*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Masc	Pearson Correlation	1	-.191*	-.192*	-.200*	-.229*
	Sig. (2-tailed)	.	.000	.000	.000	.000
	N	509	509	509	509	509
InfluenceA	Pearson Correlation	-.191*	1	.617*	.580*	.525*
	Sig. (2-tailed)	.000	.	.000	.000	.000
	N	509	509	509	509	509
InfluenceB	Pearson Correlation	-.192*	.617*	1	.590*	.585*
	Sig. (2-tailed)	.000	.000	.	.000	.000
	N	509	509	509	509	509

Table 10.1: (Continued)

Motivation	Pearson Correlation	-.200*	.580*	.590*	1	.519*
	Sig. (2-tailed)	.000	.000	.000	.	.000
	N	509	509	509	509	509
Stimulation	Pearson Correlation	-.229*	.525*	.585*	.519*	1
	Sig. (2-tailed)	.000	.000	.000	.000	.
	N	509	509	509	509	509
Consider	Pearson Correlation	-.224*	.577*	.575*	.456*	.576*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Constructive	Pearson Correlation	-.236*	.543*	.554*	.530*	.491*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Active	Pearson Correlation	-.072	.307*	.301*	.279*	.220*
	Sig. (2-tailed)	.107	.000	.000	.000	.000
	N	509	509	509	509	509
Passive	Pearson Correlation	.134*	-.138*	-.159*	-.163*	-.233*
	Sig. (2-tailed)	.002	.002	.000	.000	.000
	N	509	509	509	509	509
Laissez	Pearson Correlation	.236*	-.264*	-.233*	-.235*	-.250*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Effort	Pearson Correlation	-.188*	.574*	.501*	.527*	.536*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Effective	Pearson Correlation	-.171*	.505*	.529*	.520*	.507*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Satisfaction	Pearson Correlation	-.182*	.519*	.464*	.494*	.449*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509

Table 10.1: (Continued)

		Consid	Constr	Active	Passive	Laissez
Proud	Pearson Correlation	.265*	.189*	.083	-.098*	-.211*
	Sig. (2-tailed)	.000	.000	.062	.027	.000
	N	509	509	509	509	509
Involve	Pearson Correlation	.269*	.293*	.154*	-.166*	-.298*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Activity	Pearson Correlation	.228*	.197*	.081	-.131*	-.243*
	Sig. (2-tailed)	.000	.000	.067	.003	.000
	N	509	509	509	509	509
Earnings	Pearson Correlation	-.082	.000	.094*	.095*	.009
	Sig. (2-tailed)	.066	.992	.033	.031	.832
	N	509	509	509	509	509
Social	Pearson Correlation	-.094*	-.012	.078	.109*	.085
	Sig. (2-tailed)	.034	.781	.081	.013	.055
	N	509	509	509	509	509
Progress	Pearson Correlation	.126*	.172*	.041	-.090*	-.175*
	Sig. (2-tailed)	.005	.000	.351	.042	.000
	N	509	509	509	509	509
ICI	Pearson Correlation	.359*	.271*	.082	-.307*	-.392*
	Sig. (2-tailed)	.000	.000	.066	.000	.000
	N	509	509	509	509	509
PD	Pearson Correlation	.064	.072	-.103*	-.044	-.027
	Sig. (2-tailed)	.151	.107	.021	.323	.539
	N	506	506	506	506	506
UA	Pearson Correlation	.039	-.012	-.147*	-.032	-.090*
	Sig. (2-tailed)	.379	.788	.001	.470	.043
	N	509	509	509	509	509
Indiv	Pearson Correlation	-.236*	-.203*	-.011	.128*	.193*
	Sig. (2-tailed)	.000	.000	.797	.004	.000
	N	509	509	509	509	509
Masc	Pearson Correlation	-.224*	-.236*	-.072	.134*	.236*
	Sig. (2-tailed)	.000	.000	.107	.002	.000
	N	509	509	509	509	509
InfluenceA	Pearson Correlation	.577*	.543*	.307*	-.138*	-.264*
	Sig. (2-tailed)	.000	.000	.000	.002	.000
	N	509	509	509	509	509
InfluenceB	Pearson Correlation	.575*	.554*	.301*	-.159*	-.233*
	Sig. (2-tailed)	.000	.000	.000	.000	.000



N	509	509	509	509	509
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Table 10.1: (Continued)

Motivation	Pearson Correlation	.456*	.530*	.279*	-.163*	-.235*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Stimulation	Pearson Correlation	.576*	.491*	.220*	-.233*	-.250*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Consider	Pearson Correlation	1	.502*	.178*	-.218*	-.279*
	Sig. (2-tailed)	.	.000	.000	.000	.000
	N	509	509	509	509	509
Constructive	Pearson Correlation	.502*	1	.329*	-.157*	-.241*
	Sig. (2-tailed)	.000	.	.000	.000	.000
	N	509	509	509	509	509
Active	Pearson Correlation	.178*	.329*	1	.055	.004
	Sig. (2-tailed)	.000	.000	.	.218	.924
	N	509	509	509	509	509
Passive	Pearson Correlation	-.218*	-.157*	.055	1	.498*
	Sig. (2-tailed)	.000	.000	.218	.	.000
	N	509	509	509	509	509
Laissez	Pearson Correlation	-.279*	-.241*	.004	.498*	1
	Sig. (2-tailed)	.000	.000	.924	.000	.
	N	509	509	509	509	509
Effort	Pearson Correlation	.580*	.535*	.219*	-.236*	-.297*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Effective	Pearson Correlation	.540*	.526*	.234*	-.249*	-.309*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509
Satisfaction	Pearson Correlation	.525*	.508*	.219*	-.167*	-.303*
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	509	509	509	509	509

Table 10.1: (Continued)

		Effort	Effect	Satisf
Proud	Pearson Correlation	.162*	.126*	.182*
	Sig. (2-tailed)	.000	.004	.000
	N	509	509	509
Involve	Pearson Correlation	.194*	.188*	.227*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Activity	Pearson Correlation	.161*	.142*	.215*
	Sig. (2-tailed)	.000	.001	.000
	N	509	509	509
Earnings	Pearson Correlation	-.004	-.031	-.046
	Sig. (2-tailed)	.926	.485	.302
	N	509	509	509
Social	Pearson Correlation	.054	-.010	.002
	Sig. (2-tailed)	.228	.827	.959
	N	509	509	509
Progress	Pearson Correlation	.154*	.160*	.173*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
ICI	Pearson Correlation	.260*	.344*	.304*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
PD	Pearson Correlation	.029	.055	.054
	Sig. (2-tailed)	.509	.218	.227
	N	506	506	506
UA	Pearson Correlation	.035	.004	.056
	Sig. (2-tailed)	.437	.920	.204
	N	509	509	509
Indiv	Pearson Correlation	-.145*	-.106*	-.136*
	Sig. (2-tailed)	.001	.016	.002
	N	509	509	509
Masc	Pearson Correlation	-.188*	-.171*	-.182*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
InfluenceA	Pearson Correlation	.574*	.505*	.519*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
InfluenceB	Pearson Correlation	.501*	.529*	.464*

	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509

Table 10.1: (Continued)

Motivation	Pearson Correlation	.527*	.520*	.494*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Stimulation	Pearson Correlation	.536*	.507*	.449*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Consider	Pearson Correlation	.580*	.540*	.525*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Constructive	Pearson Correlation	.535*	.526*	.508*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Active	Pearson Correlation	.219*	.234*	.219*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Passive	Pearson Correlation	-.236*	-.249*	-.167*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Laissez	Pearson Correlation	-.297*	-.309*	-.303*
	Sig. (2-tailed)	.000	.000	.000
	N	509	509	509
Effort	Pearson Correlation	1	.619*	.606*
	Sig. (2-tailed)	.	.000	.000
	N	509	509	509
Effective	Pearson Correlation	.619*	1	.664*
	Sig. (2-tailed)	.000	.	.000
	N	509	509	509
Satisfaction	Pearson Correlation	.606*	.664*	1
	Sig. (2-tailed)	.000	.000	.
	N	509	509	509

\*  $p \leq 0.05$ 

Table 10.1 shows low but significant positive as well as negative correlations between all the dimensions in general. The dimension Power Distance (*PD*) of the Value Survey Module (Hofstede, 1980) has low but significant correlations with Activity (Activity Preference) of the Survey of Work Values (Wollack *et al.*,

1971). With regards to the association between the four dimensions of the Value Survey Module, viz Power Distance, Uncertainty Avoidance (*UA*), Individualism (*Indiv*) and Masculinity (*Masc*), Power Distance has a very low but significant correlation ( $r = 0.146$ ;  $p=0.00$ ;  $p \leq 0.05$ ), with Uncertainty Avoidance. Uncertainty Avoidance has no significant relationship ( $\geq 0.05$ ) with any of the other three dimensions. Individualism and Masculinity have a high positive ( $0.764$ ) and significant correlation ( $p = 0.000$ ;  $p \leq 0.05$ ). Masculinity has a general negative significant correlation with nearly all the dimensions of the Survey of Work Values as does the dimension Individualism. Also, Individualism and Masculinity have low, negative but significant relationships with Internality (*IC*). As regards the twelve dimensions of the Multifactor Leadership Questionnaire (MLQ), Power Distance has a low, negative but significant correlation ( $r = -0.104$ ;  $p = 0.020$ ;  $p \leq 0.05$ ) with Active Management-by-Exception (*Active*). Also, Uncertainty Avoidance has a low, negative but significant correlation ( $r = -0.146$ ;  $p = 0.0001$ ,  $p \leq 0.05$ ) with Power Distance. Uncertainty Avoidance correlates low negatively but significant with Laissez Faire leadership ( $r = -0.090$ ;  $p = 0.043$ ;  $p \leq 0.05$ ). Individualism correlates low and negatively but significantly ( $p \leq 0.05$ ) with dimensions Idealised Influence – Attributes (*InfluenceA*), Idealised Influence – Behaviours (*InfluenceB*), Inspirational Motivation, Intellectual Stimulation, Individualised Consideration, Constructive Transaction, Management-by-Exception (passive), Laissez Faire and the three leadership outcomes of the MLQ (Extra Effort, Effectiveness and Satisfaction). Masculinity has a low, negative but significant relationship ( $p \leq 0.05$ ) with all the dimensions of the MLQ, except MBE – Active.

The six factors of the Survey of Work Values, viz Pride in Work (*Proud*), Job Involvement (*Involve*), Activity Preference, Attitude toward Earnings (*Earnings*), Social Status of the Job (*Social*), and Upward Striving (*Progress*) have conspicuous associations. The correlation is in general low, negative as well as positive, and significant. There is, however, no significant correlation between Pride in Work (*Proud*) and Attitude toward Earnings (*Earnings*). The dimension Pride in Work has a significant relationship with all the dimensions of the Multifactor Leadership Questionnaire, except Management-by-Exception (active). Job involvement has generally low, negative as well as positive, significant relationships with all the dimensions of the MLQ. The same applies to Activity Preference, which only has an insignificant correlation with Management-by-Exception (active). In the case of the dimension Attitude toward Earnings of the Survey of Work Values, it has insignificant relationships with all the dimensions of the Multifactor Leadership Questionnaire, except for Intellectual Stimulation (IS) and both active and passive forms of Management-by-Exception. The dimension Social Status of the Job correlates negatively but significantly with Individualised Consideration ( $r = -0.094$ ;  $p = 0.034$ ;  $p \leq 0.05$ ). It also has a positive and significant association with Management-by-Exception (passive) ( $r = 0.109$ ;  $p = 0.013$ ;  $p \leq 0.05$ ). As regards Upward Striving, there are significant ( $p \leq 0.05$ ) and positive

correlations with all five elements of transformational leadership (i.e. Idealised Influence – Attributes, Idealised Influence – Behaviours, Inspirational Motivation, Intellectual Stimulation and Individualised Consideration), Constructive Transaction, Management-by-Exception, Laissez Faire, as well as all three leadership outcomes, viz Extra Effort, Effectiveness and Satisfaction. Management by Exception – Active has an insignificant relationship with Upward Striving ( $p = 0.351$ ;  $p > 0.05$ ).

With remarkably few exceptions, there are positive significant ( $p = 0.05$ ) correlations between the dimensions of the MLQ. There are negative (but significant) relationships between MBE-passive and Idealised Influence – Attributes, Idealised Influence – Behaviours, Inspirational Motivation, Intellectual Stimulation, Individualised Consideration, Constructive Transaction as well as the three leadership outcomes. Also, Laissez Faire correlates negatively with all five dimensions of transformational leadership as well as the three leadership outcomes.

The product-moment correlations for transformational leadership, transactional leadership, the leadership outcomes, and internality were also calculated. These results are presented in Table 10.2.

Table 10.2: Bravais-Pearson correlation coefficients: Leadership and Internality.

		Internality	Transform	Transact	Outcomes
Internality	Pearson Correlation	1	.398*	.011	.347*
	Sig. (2-tailed)	.	.000	.801	.000
	N	509	509	509	509
Transform.	Pearson Correlation	.398*	1	.368*	.745*
	Sig. (2-tailed)	.000	.	.000	.000
	N	509	509	509	509
Transact.	Pearson Correlation	.011	.368*	1	.298*
	Sig. (2-tailed)	.801	.000	.	.000
	N	509	509	509	509
Outcomes	Pearson Correlation	.347*	.745*	.298*	1
	Sig. (2-tailed)	.000	.000	.000	.
	N	509	509	509	509

\*  $p \leq 0.05$

Table 10.2 indicates that transformational leadership<sup>1</sup> has a positive and significant relationship with both internality ( $r = 0.398$ ;  $p = 0.000$ ;  $p$  being  $\leq$

<sup>1</sup> For the calculation of these correlations, transformational leadership was considered to consist of the 5 elements Idealised Influence (Attributes), Idealised Influence (Behaviours), Inspirational

0.05) and the leadership outcomes ( $r = 0.745$ ;  $p = 0.000$ ;  $p$  being  $\leq 0.05$ ). Although transactional leadership too shows a significant positive correlation with the leadership outcomes ( $r = 0.298$ ;  $p = 0.000$ ;  $p$  being  $\leq 0.05$ ), this relationship is much weaker than is the case with transformational leadership. Transactional leadership shows no significant relationship with internality ( $r = 0.011$ ;  $p = 0.801$ ;  $p$  being  $\leq 0.05$ ).

### 10.3 INFERENCE STATISTICS

Pretorius (2004: 146) describes the logic of inferential statistics as revolving around the drawing of a random sample of observations from some population and then calculating the sample statistics with which to estimate population parameters. The two statistical methods of inference used in this study are Student's T-test and One-Way Analysis of Variance. In addition to this, two non-parametric inferential statistics, viz the Mann-Whitney U-test and the Kruskal-Wallis one-way analysis of variance will be used.

#### 10.3.1 GENDER

##### 10.3.1.1 Student's T-test

Student's T-test is used when comparing the means of two samples (independent) – in this case the significant differences, if any, between the two genders on the dimensions of the different questionnaires used, are determined. The results (descriptive statistics) are presented in Table 10.3.

Table 10.3: Statistical inferences - Student's T-test (group statistics).

Variable	Gender	N	Mean	Std Deviation	Std Error Mean
Pride	Male	438	40.5388	4.12140	.19693
	Female	71	40.9296	4.05788	.48158
Involve	Male	438	37.4406	3.83646	.18331
	Female	71	37.4366	3.96316	.47034
Activity	Male	438	37.4338	4.44586	.21243
	Female	71	38.2254	4.21629	.50038
Earnings	Male	438	26.1598	5.60419	.26778
	Female	71	25.9577	5.23296	.62104

Motivation, Intellectual Stimulation and Individualised Consideration. Transactional leadership consists of the elements Constructive Transaction, Management-by-exception (Active) and Management-by-exception (Passive). For a detailed explanation of these leadership elements, see Chapter 5.

Social	Male	438	23.5137	5.22085	.24946
	Female	71	22.2958	4.84737	.57528
Progress	Male	438	34.4543	4.14127	.19788
	Female	71	33.9718	4.25935	.50549
ICI	Male	438	109.5297	11.29641	.53976
	Female	71	109.2254	11.18187	1.32704

Table 10.3: (Continued)

PD	Male	436	8.6972	2.27431	.10892
	Female	70	8.4571	2.10373	.25144
UA	Male	438	9.1644	1.99551	.09535
	Female	71	9.0282	1.86679	.22155
Indiv	Male	438	7.0365	2.20641	.10543
	Female	71	7.3521	2.22389	.26393
Masc	Male	438	11.6393	3.83975	.18347
	Female	71	11.7183	3.73854	.44368
InfluenceA	Male	438	11.6416	2.33897	.11176
	Female	71	12.1127	2.23319	.26503
InfluenceB	Male	438	11.6804	2.32253	.11097
	Female	71	12.1408	2.23796	.26560
Motivation	Male	438	11.7009	2.50300	.11960
	Female	71	12.0423	2.33261	.27683
Stimulation	Male	438	11.8813	2.28307	.10909
	Female	71	11.6338	2.22479	.26403
Consider	Male	438	12.2329	2.65061	.12665
	Female	71	12.6056	2.63753	.31302
Constructive	Male	438	11.7032	2.39728	.11455
	Female	71	11.5775	2.40631	.28558
Active	Male	438	9.6667	3.36741	.16090
	Female	71	9.9014	3.09449	.36725
Passive	Male	438	4.2237	2.74553	.13119
	Female	71	3.6338	3.13615	.37219
Laissez	Male	438	2.6872	2.56099	.12237
	Female	71	2.6056	2.70702	.32126
Effort	Male	438	8.7694	1.97334	.09429
	Female	71	8.7465	2.16279	.25668
Effective	Male	438	9.3950	1.75936	.08407
	Female	71	9.4930	1.63771	.19436
Satisfaction	Male	438	9.7900	1.76456	.08431
	Female	71	9.6338	1.67536	.19883

According to Table 10.3 the means and the standard deviations for male and female respondents are largely equal. The values of the standard deviation show that there is not much difference in variability of the scores of the two groups. As regards the standard error of the mean, Table 10.3 shows that the male group's standard error of the mean is smaller than that of the female group. This difference may be due to the large difference in the size of the two groups (male – N = 438; female – N = 71). However, the standard error depends on both the standard deviation of the sample and the sample size "...as the size of the sample increases the standard error decreases" (Norusis, 1990:160). Therefore, it is clear that as the sample size increases, the higher the possibility will be that the sample mean is not too far from the population mean.

The results of the Levene's Test for Equality of Variance are presented in Table 10.4.

Table 10.4: Student's T-test: Levene's test for equality of variance.

		Levene's Test for Equality of Variances	
		F	Sig.
PRIDE	Equal variances Assumed	.016	.898
INVOLVEMENT	Equal variances Assumed	.059	.809
ACTIVITY	Equal variances Assumed	.263	.608
EARNINGS	Equal variances Assumed	.485	.486
SOCIAL	Equal variances Assumed	1.198	.274
PROGRESS	Equal variances Assumed	.192	.662
PD	Equal variances Assumed	.039	.843
UA	Equal variances Assumed	.055	.814
INDIV	Equal variances Assumed	.486	.486
MASCULINITY	Equal variances assumed	.038	.846



INFLUENCE A	Equal variances Assumed	.083	.773
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Table 10.4: (Continued)

INFLUENCE B	Equal variances assumed	.000	.985
MOTIVATION	Equal variances assumed	.280	.597
STIMULATION	Equal variances assumed Equal variances	.021	.885
CONSIDERATION	Equal variances assumed	.115	.735
CONSTRUCTIVE	Equal variances assumed	.035	.851
ACTIVE	Equal variances assumed	.793	.374
PASSIVE	Equal variances assumed	2.340	.127
LAISSEZ	Equal variances assumed	1.338	.248
EFFORT	Equal variances assumed	4.226	.040*
EFFECTIVENESS	Equal variances assumed	.937	.333
SATISFACTION	Equal variances assumed	.239	.625
INTERNALITY	Equal variances assumed	.003	.958
(p ≤ 0.05)			

Table 10.4 presents the values of the Levene's test for homogeneity of variance. This test tests the assumption that the variances of the two groups (gender in this case) are equal. According to Table 10.4 the F-values are not significant, except for Extra Effort. The non-significance implies that the variances are not significantly different and that the assumption of equal variances is not violated (except for the dimension Extra Effort).

As the values of the Levene's test is insignificant ( $p > 0.05$ ), the values of the equal variances assumed for the t-test (except Extra Effort, where the "equal variances not assumed" value is used) are used. These results are presented in Table 10.5.

Table 10.5: T-test for equality of means – Gender.

		T-test for Equality of Means			
		T	Df	Sig (2-tailed)	Mean Difference
PRIDE	Equal variances Assumed	-.743	507	.458	-.39076
	Equal variances not assumed	-.751	94.942	.454	-.39076
INVOLVEMENT	Equal variances Assumed	.008	507	.993	.00402
	Equal variances not assumed	.008	92.539	.994	.00402
ACTIVITY	Equal variances Assumed	-1.401	507	.162	-.79156
	Equal variances not assumed	-1.456	97.002	.149	-.79156
EARNINGS	Equal variances Assumed	.284	507	.776	.20207
	Equal variances not assumed	.299	97.906	.766	.20207
SOCIAL	Equal variances Assumed	1.841	507	.066	1.21792
	Equal variances not assumed	1.942	98.245	.055	1.21792
PROGRESS	Equal variances Assumed	.907	507	.365	.48251
	Equal variances not assumed	.889	92.748	.376	.48251
INTERNALITY	Equal variances Assumed	.211	507	.833	.30433
	Equal variances not assumed	.212	94.662	.832	.30433

Table 10.5: (Continued)

PD	Equal variances Assumed	.828	504	.408	.24010
	Equal variances not assumed	.876	96.784	.383	.24010
UA	Equal variances Assumed	.538	507	.591	.13621
	Equal variances not assumed	.565	97.796	.574	.13621
INDIVIDUALISM	Equal variances Assumed	-1.117	507	.265	-.31558
	Equal variances not assumed	-1.110	93.739	.270	-.31558
MASCULINITY	Equal variances Assumed	-.161	507	.872	-.07904
	Equal variances not assumed	-.165	95.539	.870	-.07904
INFLUENCE A	Equal variances Assumed	-1.584	507	.114	-.47112
	Equal variances not assumed	-1.638	96.619	.105	-.47112
INFLUENCE B	Equal variances Assumed	-1.557	507	.120	-.46048
	Equal variances not assumed	-1.600	96.106	.113	-.46048
MOTIVATION	Equal variances Assumed	-1.076	507	.283	-.34134
	Equal variances not assumed	-1.132	98.022	.260	-.34134
STIMULATION	Equal variances Assumed	.850	507	.396	.24748
	Equal variances not assumed	.866	95.493	.389	.24748
CONSIDERATION	Equal variances Assumed	-1.100	507	.272	-.37276

	Equal variances not assumed	-1.104	94.391	.272	-.37276
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Table 10.5: (Continued)

CONSTRUCTIVE	Equal variances Assumed	.410	507	.682	.12573
	Equal variances not assumed	.409	93.946	.684	.12573
MBE-ACTIVE	Equal variances Assumed	-.551	507	.582	-.23474
	Equal variances not assumed	-.585	98.869	.560	-.23474
MBE-PASSIVE	Equal variances Assumed	1.645	507	.101	.58994
	Equal variances not assumed	1.495	88.255	.139	.58994
LAISSEZ FAIRE	Equal variances Assumed	.247	507	.805	.08158
	Equal variances not assumed	.237	91.477	.813	.08158
EXTRA EFFORT	Equal variances Assumed	.090	507	.929	.02293
	Equal variances not assumed	.084	89.905	.933	.02293
EFFECTIVENESS	Equal variances Assumed	-.439	507	.661	-.09798
	Equal variances not assumed	-.463	98.091	.645	-.09798
SATISFACTION	Equal variances Assumed	.696	507	.486	.15615
	Equal variances not assumed	.723	96.936	.471	.15615
(p ≤ 0.05)					

As is evident from Table 10.5, the two genders do not differ significantly on any of the work value or leadership dimensions. They also do not differ significantly on internality.

## 10.3.1.2 Mann Whitney U-test

Due to the high discrepancy in size between the two gender samples the non-parametric Mann-Whitney U-test was also done, the results of which are presented in Table 10.6.

Table 10.6: Mann Whitney U-test: Gender.

	<b>Pride</b>	<b>Involvement</b>	<b>Activity</b>	<b>Earnings</b>
Mann-Whitney U	14479.500	15316.500	13981.000	15547.500
Wilcoxon W	110620.500	17872.500	110122.000	111688.500
Z	-.935	-.203	-1.367	-.001
Asymp. Sig. (2-tailed)	.350	.839	.172	.999

	<b>Status</b>	<b>Progress</b>	<b>PD</b>	<b>UA</b>
Mann-Whitney U	13200.000*	14817.000	14270.500	14852.000
Wilcoxon W	15756.000	17373.000	16755.500	17408.000
Z	-2.047	-.639	-.880	-.614
Asymp. Sig. (2-tailed)	.041	.523	.379	.539

	<b>Indiv</b>	<b>Mscul</b>	<b>Influence A</b>	<b>Influence B</b>
Mann-Whitney U	14012.500	15269.500	13805.000	13986.500
Wilcoxon W	110153.500	111410.500	109946.000	110127.500
Z	-1.353	-.244	-1.531	-1.371
Asymp. Sig. (2-tailed)	.176	.807	.126	.170

	<b>Motivation</b>	<b>Stimulation</b>	<b>Consideration</b>	<b>Constructive</b>
Mann-Whitney U	14456.000	14424.000	14094.000	15126.500
Wilcoxon W	110597.000	16980.000	110235.000	17682.500
Z	-.958	-.988	-1.275	-.371
Asymp. Sig. (2-tailed)	.338	.323	.202	.711

	<b>MBE-Act</b>	<b>MBE-Pas</b>	<b>Laissez F</b>	<b>E Effort</b>
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Mann-Whitney U	15124.000	13152.500*	14931.000	15370.500
Wilcoxon W	111265.000	15708.500	17487.000	17926.500
Z	-.371	-2.098	-.545	-.157
Asymp. Sig. (2-tailed)	.710	.036	.585	.875

Table 10.6: (Continued)

	Effectiveness	Satisfaction	Internality
Mann-Whitney U	15139.000	14619.500	15272.000
Wilcoxon W	111280.000	17175.500	17828.000
Z	-.362	-.824	-.241
Asymp. Sig. (2-tailed)	.717	.410	.810
( $p \leq 0.05$ )			

As regards Table 10.6, the Mann-Whitney U-test shows differences between the two gender groups only on the dimensions Social Status and MBE-Passive.

### 10.3.2 OCCUPATIONAL LEVEL

#### 10.3.2.1 One-way analysis of variance

Inferential statistics with dependent variables with more than two levels were done by way of a one-way analysis of variance. It is a statistical test to determine significant differences, if any, between the means for three or more groups. The results of the one-way analysis with Occupational Level as the independent variable are presented in Tables 10.7 and 10.8.

Table 10.7: One-way analysis of variance: Occupational Level – Tests of homogeneity of variance.

	<b>Levene Statistic</b>	<b>df1</b>	<b>df2</b>	<b>Sig</b>
Pride	1.180	4	504	.319
Involvement	1.095	4	504	.358
Activity	3.495	4	504	.008*
Earnings	2.138	4	504	.075
Status	.507	4	504	.730
Progress	1.284	4	504	.275
Internality	1.550	4	504	.187
PD	2.037	4	501	.088
UA	2.808	4	504	.025*
Individualism	2.468	4	504	.044*
Masculinity	1.136	4	504	.339
Influence A	.925	4	504	.449
Influence B	1.052	4	504	.380
Motivation	.958	4	504	.430
Stimulation	1.370	4	504	.243
Consideration	2.086	4	504	.081
Constructive T	.037	4	504	.997
MBE-Active	.604	4	504	.660
MBE-Passive	.812	4	504	.518
Laissez	1.177	4	504	.320
Effort	1.661	4	504	.158
Effective	.356	4	504	.840
(p ≤ 0.05)				

Table 10.7 shows that, except for Activity Preference, Uncertainty Avoidance and Individualism, there are no significant differences in variance between the five occupational ranks. The results for the one-way analysis of variance are presented in Table 10.8.

Table 10.8: One-way analysis of variance – Occupational level.

				Df	F	Sig
<b>Pride</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	.406	.805
				1	1.139	.286
				1	1.567	.211
				3	.019	.996
	Within Groups			504		
	Total			508		
<b>Involvement</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	1.192	.313
				1	2.488	.115
				1	4.254	.040
				3	.171	.916
	Within Groups			504		
	Total			508		
<b>Activity</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	3.860	.004*
				1	11.913	.001
				1	11.453	.001
				3	1.329	.264
	Within Groups			504		
	Total			508		
<b>Earnings</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	5.218	.000*
				1	14.329	.000
				1	19.413	.000
				3	.486	.692
	Within Groups			504		
	Total			508		
<b>Status</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	5.396	.000*
				1	13.815	.000
				1	18.401	.000
				3	1.062	.365
	Within Groups			504		
	Total			508		
<b>Progress</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	1.439	.220
				1	.087	.768
				1	1.884	.171
				3	1.291	.277
	Within Groups			504		
	Total			508		



Table 10.8: (Continued)

<b>ICI</b>	Between	(Combined)		4	5.368	.000*	
	Groups	Linear	Unweighted	1	9.020	.003	
		Term	Weighted		1	16.978	.000
			Deviation		3	1.498	.214
	Within Groups			504			
	Total			508			
<b>PD</b>	Between	(Combined)		4	1.285	.275	
	Groups	Linear	Unweighted	1	.079	.779	
		Term	Weighted		1	1.592	.208
			Deviation		3	1.183	.316
	Within Groups			501			
	Total			505			
<b>UA</b>	Between	(Combined)		4	1.362	.246	
	Groups	Linear	Unweighted	1	1.336	.248	
		Term	Weighted		1	.812	.368
			Deviation		3	1.545	.202
	Within Groups			504			
	Total			508			
<b>Individ</b>	Between	(Combined)		4	3.073	.016*	
	Groups	Linear	Unweighted	1	4.520	.034	
		Term	Weighted		1	9.924	.002
			Deviation		3	.790	.500
	Within Groups			504			
	Total			508			
<b>Masculinity</b>	Between	(Combined)		4	.421	.793	
	Groups	Linear	Unweighted	1	.223	.637	
		Term	Weighted		1	.045	.832
			Deviation		3	.546	.651
	Within Groups			504			
	Total			508			
<b>Influence A</b>	Between	(Combined)		4	.634	.638	
	Groups	Linear	Unweighted	1	.002	.961	
		Term	Weighted		1	.023	.881
			Deviation		3	.838	.473
	Within Groups			504			
	Total			508			

Table 10.8: (Continued)

<b>Influence B</b>	Between	(Combined)		4	.792	.531	
	Groups	Linear	Term	Unweighted	1	.256	.613
				Weighted	1	.991	.320
				Deviation	3	.725	.537
	Within Groups			504			
	Total			508			
<b>Motivation</b>	Between	(Combined)		4	.491	.742	
	Groups	Linear	Term	Unweighted	1	.360	.549
				Weighted	1	.004	.949
				Deviation	3	.653	.581
	Within Groups			504			
	Total			508			
<b>Stimulation</b>	Between	(Combined)		4	2.784	.026*	
	Groups	Linear	Term	Unweighted	1	3.823	.051
				Weighted	1	7.287	.007
				Deviation	3	1.282	.280
	Within Groups			504			
	Total			508			
<b>Consider</b>	Between	(Combined)		4	2.765	.027*	
	Groups	Linear	Term	Unweighted	1	1.652	.199
				Weighted	1	2.556	.110
				Deviation	3	2.834	.038
	Within Groups			504			
	Total			508			
<b>Constructive</b>	Between	(Combined)		4	.470	.758	
	Groups	Linear	Term	Unweighted	1	.047	.829
				Weighted	1	.012	.913
				Deviation	3	.622	.601
	Within Groups			504			
	Total			508			
<b>Active</b>	Between	(Combined)		4	6.793	.000*	
	Groups	Linear	Term	Unweighted	1	14.773	.000
				Weighted	1	25.190	.000
				Deviation	3	.661	.576
	Within Groups			504			
	Total			508			

Table 10.8: (Continued)

<b>Passive</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	.937	.442
				1	1.728	.189
				1	2.533	.112
				3	.404	.750
	Within Groups			504		
	Total			508		
<b>Laissez</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	.696	.595
				1	1.716	.191
				1	2.059	.152
				3	.242	.867
	Within Groups			504		
	Total			508		
<b>Effort</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	1.580	.178
				1	.138	.710
				1	.408	.523
				3	1.971	.117
	Within Groups			504		
	Total			508		
<b>Effective</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	1.487	.205
				1	.118	.731
				1	1.128	.289
				3	1.607	.187
	Within Groups			504		
	Total			508		
<b>Satisfaction</b>	Between Groups	(Combined) Linear Term	Unweighted Weighted Deviation	4	1.014	.400
				1	.622	.431
				1	1.466	.227
				3	.863	.460
	Within Groups			504		
	Total			508		
(* p ≤ 0.05)						

According to Table 10.8 the five groups (occupational level) differ significantly on Activity Preference, Attitude toward Earnings, Social Status of the Job, Individualism, Intellectual Stimulation, Individualised Consideration, MBE-Active and Internality.

Post hoc comparisons were done by means of the Scheffé test to determine which occupational levels (ranks) differ from each other with regards to the above-mentioned eight dimensions. As regards Activity Preference, “Airman to Sergeant” (junior supervisors) differ significantly ( $p = 0.024$ ;  $p$  being  $\leq 0.05$ ) from “Colonel to Lt General” (senior management). The ranks “Airman to Sergeant” differ significantly ( $p = 0.013$ ;  $p$  being  $< 0.05$ ) from the ranks “Major to Lt Colonel” (middle management) and “Flight Sergeant to Warrant Officer Class I” (senior supervisors) differ significantly from “Major to Lt Colonel” ( $p = 0.032$ ;  $p$  being  $< 0.05$ ) with regards to the dimension Attitude towards Earnings. There are significant differences on Social Status of the Job between junior supervisors and “Lieutenant to Captain” (junior management) ( $p = 0.024$ ;  $p$  being  $< 0.05$ ) as well as between junior supervisors and senior management ( $p = 0.022$ ;  $p$  being  $< 0.05$ ). On the dimension Individualism junior supervisors again differ significantly from middle management ( $p = 0.025$ ;  $p$  being  $< 0.05$ ). As regards the dimension Intellectual Stimulation the same result was found – junior supervisors differ significantly from middle management ( $p = 0.032$ ;  $p$  being  $< 0.05$ ). No significant differences (with  $p \leq 0.05$ ) could be found between the five occupational levels with regards to Intellectual Stimulation. On the Activity Preference dimension, both junior supervisors and senior supervisors differ significantly ( $p = 0.001$  and  $p = 0.007$  respectively;  $p$  being  $< 0.05$ ) from middle management. In terms of Internality, junior supervisors differ significantly from senior supervisors ( $p = 0.025$ ;  $p$  being  $< 0.05$ ) and also from middle management ( $p = 0.004$ ;  $p$  being  $< 0.05$ ).

#### 10.3.2.2 Kruskal-Wallis one-way analysis of variance

As the number of respondents in some of the ranks are quite small, viz senior management ( $N=22$ ) when compared to the other categories, i.e. senior supervisors ( $N=230$ ), a non-parametric analysis of variance was also done. To realise the aim of the study, it was decided not to recode this variable. The results of the Kruskal-Wallis one-way analysis of variance are presented in Table 10.9.

Table 10.9: Kruskal-Wallis one-way analysis of variance: Occupational level.

	<b>Pride</b>	<b>Involvement</b>	<b>Activity</b>	<b>Earnings</b>
Chi-Square	1.121	4.103	11.293	23.752
Df	4	4	4	4
Asymp. Sig.	.891	.392	.023*	.000*

	<b>Social</b>	<b>Progress</b>	<b>Internality</b>	<b>PD</b>
Chi-Square	17.344	2.817	19.091	2.298
Df	4	4	4	4
Asymp. Sig.	.002*	.589	.001*	.681

	<b>UA</b>	<b>Indiv</b>	<b>Masculinity</b>	<b>Influence A</b>
Chi-Square	6.991	10.940	1.903	2.549
Df	4	4	4	4
Asymp. Sig.	.136	.027*	.754	.636

	<b>Influence B</b>	<b>Motivation</b>	<b>Stimulation</b>	<b>Consideration</b>
Chi-Square	3.025	1.490	11.205	8.829
Df	4	4	4	4
Asymp. Sig.	.554	.828	.024*	.066

	<b>Constructive</b>	<b>MBE-Active</b>	<b>MBE-Passive</b>	<b>Laissez</b>
Chi-Square	1.941	23.430	4.570	2.866
Df	4	4	4	4
xAp. Sig.	.747	.000*	.334	.581

	<b>Effort</b>	<b>Effective</b>	<b>Satisfaction</b>
Chi-Square	5.505	5.359	4.522
Df	4	4	4
Asymp. Sig.	.239	.252	.340*

(\* p ≤ 0.05)

The non-parametric one-way analysis of variance results in Table 10.9 indicate that the five occupational level groups differ significantly ( $p \leq 0.05$ ) on the same dimensions, except for Individualised Consideration.

### 10.3.3 POPULATION GROUP

#### 10.3.3.1 One-way analysis of variance

A one-way analysis of variance was also done with population group as the grouping variable. The Levene test for homogeneity of variance was done, the results of which are presented in Table 10.10.

Table 10.10: One-way analysis of variance – Levene’s test for homogeneity:  
Population Group.

	Levene Statistic	df1	df2	Sig
Pride	13.614	3	505	.000*
Involvement	4.449	3	505	.004*
Activity	4.751	3	505	.003*
Earnings	.779	3	505	.506
Status	1.305	3	505	.272
Progress	.148	3	505	.931
Internality	3.011	3	505	.030*
PD	.613	3	502	.607
UA	1.609	3	505	.186
Individualism	6.260	3	505	.000*
Masculinity	11.127	3	505	.000*
Influence A	1.177	3	505	.318
Influence B	.404	3	505	.750
Motivation	.898	3	505	.442
Stimulation	3.655	3	505	.013*
Consideration	3.586	3	505	.014*
Constructive T	1.184	3	505	.315
MBE-Active	1.117	3	505	.342
MBE-Passive	2.639	3	505	.049*
Laissez	5.337	3	505	.001*
Effort	3.832	3	505	.010*
Effectiveness	2.133	3	505	.095
Satisfaction	5.584	3	505	.030*

(\* p ≤ 0.05)

According to Table 10.10 there are significant differences in variance as regards Pride in Work, Job Involvement, Activity Preference, Internality, Individualism, Masculinity, Intellectual Stimulation, Individualised Consideration, MBE-Passive, Laissez Faire, Extra Effort, and Satisfaction. Although one-way analysis of variance is not particularly sensitive to violations of homogeneity (equality) of variance when group sizes are nearly similar (Norusis, 1990: 199), the sizes of the different groups in this instance are quite dissimilar and the variances unequal. Therefore a non-parametric (Kruskal-Wallis) analysis of variance was also done. The Kruskal-Wallis test requires less stringent assumptions.

The results of the one-way analysis of variance for the four population groups in the sample are presented in Table 10.11.

Table 10.11: One-way analysis of variance: Population group.

				Df	F	Sig
<b>Pride</b>	Between	(Combined)		3	29.508	.000*
	Groups	Linear	Unweighted	1	2.272	.132
		Term	Weighted	1	31.545	.000
			Deviation	2	28.489	.000
	Within Groups			505		
	Total			508		
<b>Involvement</b>	Between	(Combined)		3	3.440	.017*
	Groups	Linear	Unweighted	1	1.428	.233
		Term	Weighted	1	6.226	.013
			Deviation	2	2.048	.130
	Within Groups			505		
	Total			508		
<b>Activity</b>	Between	(Combined)		3	15.366	.000*
	Groups	Linear	Unweighted	1	3.504	.062
		Term	Weighted	1	26.173	.000
			Deviation	2	9.962	.000
	Within Groups			505		
	Total			508		
<b>Earnings</b>	Between	(Combined)		3	4.173	.006*
	Groups	Linear	Unweighted	1	6.737	.010
		Term	Weighted	1	10.769	.001

		Deviation	2	.876	.417
	Within Groups		505		
	Total		508		

Table 10.11: (Continued)

<b>Status</b>	Between	(Combined)		3	22.042	.000*
	Groups	Linear	Unweighted	1	8.381	.004
			Weighted	1	36.132	.000
		Term	Unweighted	2	14.998	.000
			Weighted	2	14.998	.000
	Within Groups			505		
Total			508			
<b>Progress</b>	Between	(Combined)		3	.908	.437
	Groups	Linear	Unweighted	1	.072	.788
			Weighted	1	.725	.395
		Term	Unweighted	2	.999	.369
			Weighted	2	.999	.369
	Within Groups			505		
Total			508			
<b>Internality</b>	Between	(Combined)		3	10.840	.000*
	Groups	Linear	Unweighted	1	5.695	.017
			Weighted	1	13.193	.000
		Term	Unweighted	2	9.663	.000
			Weighted	2	9.663	.000
	Within Groups			505		
Total			508			
<b>PD</b>	Between	(Combined)		3	1.015	.385
	Groups	Linear	Unweighted	1	.763	.383
			Weighted	1	.009	.925
		Term	Unweighted	2	1.519	.220
			Weighted	2	1.519	.220
	Within Groups			502		
Total			505			
<b>UA</b>	Between	(Combined)		3	2.038	.108
	Groups	Linear	Unweighted	1	.859	.354
			Weighted	1	3.103	.079
		Term	Unweighted	2	1.506	.223
			Weighted	2	1.506	.223
	Within Groups			505		
Total			508			
<b>Individ</b>	Between	(Combined)		3	18.917	.000*
	Groups	Linear	Unweighted	1	9.252	.002
		Term	Weighted	1	29.022	.000



		Deviation	2	13.865	.000
	Within Groups		505		
	Total		508		

Table 10.11: (Continued)

<b>Masculinity</b>	Between	(Combined)		3	12.385	.000*
	Groups	Linear	Unweighted	1	10.356	.001
		Term	Weighted	1	19.761	.000
			Deviation	2	8.698	.000
	Within Groups			505		
	Total			508		
<b>Influence A</b>	Between	(Combined)		3	5.546	.001*
	Groups	Linear	Unweighted	1	.114	.736
		Term	Weighted	1	.260	.610
			Deviation	2	8.189	.000
	Within Groups			505		
	Total			508		
<b>Influence B</b>	Between	(Combined)		3	6.930	.000*
	Groups	Linear	Unweighted	1	1.261	.262
		Term	Weighted	1	.235	.628
			Deviation	2	10.277	.000
	Within Groups			505		
	Total			508		
<b>Motivation</b>	Between	(Combined)		3	6.303	.000*
	Groups	Linear	Unweighted	1	.175	.676
		Term	Weighted	1	9.202	.003
			Deviation	2	4.854	.008
	Within Groups			505		
	Total			508		
<b>Stimulation</b>	Between	(Combined)		3	7.890	.000*
	Groups	Linear	Unweighted	1	3.939	.048
		Term	Weighted	1	.533	.465
			Deviation	2	11.569	.000
	Within Groups			505		
	Total			508		
<b>Consider</b>	Between	(Combined)		3	19.030	.000*
	Groups	Linear	Unweighted	1	2.564	.110
		Term	Weighted	1	6.550	.011

		Deviation	2	25.270	.000
	Within Groups		505		
	Total		508		

Table 10.11: (Continued)

<b>Constructive</b>	Between	(Combined)		3	2.254	.081
	Groups	Linear	Unweighted	1	2.270	.133
		Term	Weighted	1	.749	.387
			Deviation	2	3.006	.050
	Within Groups			505		
	Total			508		
<b>Active</b>	Between	(Combined)		3	3.473	.016*
	Groups	Linear	Unweighted	1	.018	.894
		Term	Weighted	1	1.414	.235
			Deviation	2	4.502	.012
	Within Groups			505		
	Total			508		
<b>Passive</b>	Between	(Combined)		3	1.194	.311
	Groups	Linear	Unweighted	1	.388	.533
		Term	Weighted	1	.333	.564
			Deviation	2	1.625	.198
	Within Groups			505		
	Total			508		
<b>Laissez</b>	Between	(Combined)		3	1.476	.220
	Groups	Linear	Unweighted	1	1.770	.184
		Term	Weighted	1	3.139	.077
			Deviation	2	.644	.526
	Within Groups			505		
	Total			508		
<b>Effort</b>	Between	(Combined)		3	5.950	.001*
	Groups	Linear	Unweighted	1	.002	.969
		Term	Weighted	1	1.248	.264
			Deviation	2	8.301	.000
	Within Groups			505		
	Total			508		
<b>Effective</b>	Between	(Combined)		3	3.919	.009*
	Groups	Linear	Unweighted	1	.075	.784
		Term	Weighted	1	1.542	.215

		Deviation	2	5.108	.006
	Within Groups		505		
	Total		508		

Table 10.11: (Continued)

<b>Satisfaction</b>	Between	(Combined)	3	3.679	.012*
	Groups	Linear	1	.000	.988
		Term	1	.058	.810
			2	5.490	.004
	Within Groups		505		
	Total		508		
(* p ≤ 0.05)					

It is evident from Table 10.11 that there is a wide divergence between the views and attitudes of the four population groups on the various dimensions of the questionnaires. They differ on most dimensions except for Upward Striving (progress), Power Distance, Uncertainty Avoidance, Constructive Transaction, MBE-Passive and Laissez Faire Leadership.

Post hoc comparisons were done by means of the Scheffé test to determine which population groups differ significantly from each other, if any, with regards to the following dimensions:

- Pride in Work
- Job Involvement
- Activity Preference
- Attitude toward Earnings
- Social Status of the Job
- Individualism
- Masculinity
- Idealised Influence – Attributes
- Idealised Influence – Behaviours
- Inspirational Motivation
- Intellectual Stimulation
- Individualised Consideration
- MBE-Active
- Internality
- The three leadership outcomes

As quite significant results for the various population groups were obtained, a table (10.12) with the Scheffé test results is presented in full.

Table 10.12: Scheffé Test: Population group.

Dependent Variable	(I) Population Group	(J) Population Group	Mean Difference	Std. Error	Sig.
<b>Pride</b>	Asian	White	-1.19414	.97130	.680
		African	3.21203	1.04264	.024*
		Coloured	.20745	1.10080	.998
	White	Asian	1.19414	.97130	.680
		African	4.40617	.47170	.000*
		Coloured	1.40159	.58920	.131
	African	Asian	-3.21203	1.04264	.024*
		White	-4.40617	.47170	.000*
		Coloured	-3.00458	.70060	.000*
	Coloured	Asian	-.20745	1.10080	.998
		White	-1.40159	.58920	.131
		African	3.00458	.70060	.000*
<b>Involvement</b>	Asian	White	.00886	.97635	1.000
		African	1.44620	1.04806	.593
		Coloured	.85638	1.10652	.897
	White	Asian	-.00886	.97635	1.000
		African	1.43735	.47416	.028*
		Coloured	.84753	.59227	.563
	African	Asian	-1.44620	1.04806	.593
		White	-1.43735	.47416	.028*
		Coloured	-.58982	.70424	.873
	Coloured	Asian	-.85638	1.10652	.897
		White	-.84753	.59227	.563
		African	.58982	.70424	.873
<b>Activity</b>	Asian	White	-.91383	1.08356	.871
		African	2.43829	1.16315	.223
		Coloured	1.20479	1.22803	.810
	White	Asian	.91383	1.08356	.871
		African	3.35212	.52622	.000*
		Coloured	2.11862	.65730	.016*

	African	Asian	-2.43829	1.16315	.223
		White	-3.35212	.52622	.000*
		Coloured	-1.23350	.78157	.478
	Coloured	Asian	-1.20479	1.22803	.810
		White	-2.11862	.65730	.016*
		African	1.23350	.78157	.478

Table 10.12: (Continued)

<b>Earnings</b>	Asian	White	-1.80909	1.40417	.646
		African	-3.60680	1.50730	.127
		Coloured	-3.57314	1.59138	.170
	White	Asian	1.80909	1.40417	.646
		African	-1.79771	.68192	.075
		Coloured	-1.76404	.85179	.233
	African	Asian	3.60680	1.50730	.127
		White	1.79771	.68192	.075
		Coloured	.03367	1.01283	1.000
	Coloured	Asian	3.57314	1.59138	.170
		White	1.76404	.85179	.233
		African	-.03367	1.01283	1.000
<b>Social</b>	Asian	White	-.21032	1.24841	.999
		African	-4.95174	1.34010	.004*
		Coloured	-2.55718	1.41485	.353
	White	Asian	.21032	1.24841	.999
		African	-4.74142	.60628	.000*
		Coloured	-2.34686	.75730	.023*
	African	Asian	4.95174	1.34010	.004*
		White	4.74142	.60628	.000*
		Coloured	2.39456	.90048	.071
	Coloured	Asian	2.55718	1.41485	.353
		White	2.34686	.75730	.023*
		African	-2.39456	.90048	.071
<b>Progress</b>	Asian	White	1.21134	1.06196	.729
		African	.88054	1.13996	.897
		Coloured	.43750	1.20355	.988
	White	Asian	-1.21134	1.06196	.729
		African	-.33080	.51573	.938
		Coloured	-.77384	.64420	.696
	African	Asian	-.88054	1.13996	.897

		White	.33080	.51573	.938
		Coloured	-.44304	.76599	.953
	Coloured	Asian	-.43750	1.20355	.988
		White	.77384	.64420	.696
		African	.44304	.76599	.953

Table 10.12: (Continued)

<b>Internality</b>	Asian	White	3.51175	2.79812	.665
		African	10.88370	3.00365	.005*
		Coloured	5.18750	3.17119	.445
	White	Asian	-3.51175	2.79812	.665
		African	7.37195	1.35888	.000*
		Coloured	1.67575	1.69738	.807
	African	Asian	-10.88370	3.00365	.005*
		White	-7.37195	1.35888	.000*
		Coloured	-5.69620	2.01829	.048*
	Coloured	Asian	-5.18750	3.17119	.445
		White	-1.67575	1.69738	.807
		African	5.69620	2.01829	.048*
<b>PD</b>	Asian	White	.80014	.57496	.586
		African	.95649	.61709	.494
		Coloured	.52261	.65151	.886
	White	Asian	-.80014	.57496	.586
		African	.15635	.27938	.957
		Coloured	-.27753	.34888	.889
	African	Asian	-.95649	.61709	.494
		White	-.15635	.27938	.957
		Coloured	-.43388	.41465	.778
	Coloured	Asian	-.52261	.65151	.886
		White	.27753	.34888	.889
		African	.43388	.41465	.778
<b>UA</b>	Asian	White	-.09792	.50333	.998
		African	-.68275	.54030	.660
		Coloured	-.33910	.57044	.950
	White	Asian	.09792	.50333	.998
		African	-.58483	.24444	.127
		Coloured	-.24117	.30533	.891
African	Asian	.68275	.54030	.660	

		White	.58483	.24444	.127
		Coloured	.34366	.36305	.826
	Coloured	Asian	.33910	.57044	.950
		White	.24117	.30533	.891
		African	-.34366	.36305	.826

Table 10.12: (Continued)

<b>Individualism</b>	Asian	White	-.48297	.53658	.847
		African	-2.37025	.57599	.001*
		Coloured	-1.23936	.60812	.247
	White	Asian	.48297	.53658	.847
		African	-1.88728	.26058	.000*
		Coloured	-.75639	.32550	.146
	African	Asian	2.37025	.57599	.001*
		White	1.88728	.26058	.000*
		Coloured	1.13089	.38703	.037*
	Coloured	Asian	1.23936	.60812	.247
		White	.75639	.32550	.146
		African	-1.13089	.38703	.037*
<b>Masculinity</b>	Asian	White	-1.65276	.94492	.384
		African	-4.20965	1.01433	.001*
		Coloured	-2.62899	1.07091	.112
	White	Asian	1.65276	.94492	.384
		African	-2.55689	.45889	.000*
		Coloured	-.97623	.57320	.408
	African	Asian	4.20965	1.01433	.001*
		White	2.55689	.45889	.000*
		Coloured	1.58066	.68158	.148
	Coloured	Asian	2.62899	1.07091	.112
		White	.97623	.57320	.408
		African	-1.58066	.68158	.148
<b>Influence A</b>	Asian	White	.93018	.58675	.474
		African	1.58703	.62985	.097
		Coloured	.00798	.66498	1.000
	White	Asian	-.93018	.58675	.474
		African	.65685	.28495	.152
		Coloured	-.92220	.35593	.083
African	Asian	-1.58703	.62985	.097	

		White	-.65685	.28495	.152
		Coloured	-1.57905	.42323	.003*
	Coloured	Asian	-.00798	.66498	1.000
		White	.92220	.35593	.083
		African	1.57905	.42323	.003*

Table 10.12: (Continued)

<b>Influence B</b>	Asian	White	1.15548	.58096	.268
		African	2.05142	.62363	.013*
		Coloured	.44814	.65842	.927
	White	Asian	-1.15548	.58096	.268
		African	.89594	.28214	.019*
		Coloured	-.70735	.35242	.260
	African	Asian	-2.05142	.62363	.013*
		White	-.89594	.28214	.019*
		Coloured	-1.60329	.41905	.002*
	Coloured	Asian	-.44814	.65842	.927
		White	.70735	.35242	.260
		African	1.60329	.41905	.002*
<b>Motivation</b>	Asian	White	1.31114	.62382	.221
		African	.85047	.66964	.657
		Coloured	-.14495	.70699	.998
	White	Asian	-1.31114	.62382	.221
		African	-.46066	.30295	.511
		Coloured	-1.45608	.37842	.002*
	African	Asian	-.85047	.66964	.657
		White	.46066	.30295	.511
		Coloured	-.99542	.44996	.181
	Coloured	Asian	.14495	.70699	.998
		White	1.45608	.37842	.002*
		African	.99542	.44996	.181
<b>Stimulation</b>	Asian	White	1.70964	.56942	.030*
		African	2.49921	.61124	.001*
		Coloured	1.03059	.64533	.467
	White	Asian	-1.70964	.56942	.030*
		African	.78957	.27653	.044*
		Coloured	-.67905	.34542	.278
African	Asian	-2.49921	.61124	.001*	



		White	-.78957	.27653	.044*
		Coloured	-1.46862	.41072	.005*
	Coloured	Asian	-1.03059	.64533	.467
		White	.67905	.34542	.278
		African	1.46862	.41072	.005*

Table 10.12: (Continued)

<b>Consideration</b>	Asian	White	.95504	.64324	.532
		African	3.12025	.69049	.000*
		Coloured	.45745	.72900	.941
	White	Asian	-.95504	.64324	.532
		African	2.16521	.31238	.000*
		Coloured	-.49759	.39020	.654
	African	Asian	-3.12025	.69049	.000*
		White	-2.16521	.31238	.000*
		Coloured	-2.66281	.46397	.000*
	Coloured	Asian	-.45745	.72900	.941
		White	.49759	.39020	.654
		African	2.66281	.46397	.000*
<b>Constructive</b>	Asian	White	1.10950	.60981	.347
		African	1.57199	.65460	.125
		Coloured	.89761	.69111	.640
	White	Asian	-1.10950	.60981	.347
		African	.46249	.29615	.487
		Coloured	-.21190	.36992	.955
	African	Asian	-1.57199	.65460	.125
		White	-.46249	.29615	.487
		Coloured	-.67439	.43986	.503
	Coloured	Asian	-.89761	.69111	.640
		White	.21190	.36992	.955
		African	.67439	.43986	.503
<b>MBE-Active</b>	Asian	White	1.35439	.84400	.463
		African	1.67168	.90599	.334
		Coloured	.02261	.95653	1.000
	White	Asian	-1.35439	.84400	.463
		African	.31728	.40988	.897
		Coloured	-1.33179	.51198	.081
African	Asian	-1.67168	.90599	.334	

		White	-.31728	.40988	.897
		Coloured	-1.64907	.60878	.063
	Coloured	Asian	-.02261	.95653	1.000
		White	1.33179	.51198	.081
		African	1.64907	.60878	.063

Table 10.12: (Continued)

<b>MBE-Passive</b>	Asian	White	-.53014	.71658	.908
		African	-1.07041	.76921	.586
		Coloured	-.33112	.81212	.983
	White	Asian	.53014	.71658	.908
		African	-.54027	.34800	.492
		Coloured	.19903	.43468	.976
	African	Asian	1.07041	.76921	.586
		White	.54027	.34800	.492
		Coloured	.73929	.51687	.563
	Coloured	Asian	.33112	.81212	.983
		White	-.19903	.43468	.976
		African	-.73929	.51687	.563
<b>Laissez</b>	Asian	White	-.44176	.65780	.929
		African	-1.01424	.70611	.560
		Coloured	-.81117	.74550	.757
	White	Asian	.44176	.65780	.929
		African	-.57248	.31945	.361
		Coloured	-.36941	.39903	.836
	African	Asian	1.01424	.70611	.560
		White	.57248	.31945	.361
		Coloured	.20307	.47447	.980
	Coloured	Asian	.81117	.74550	.757
		White	.36941	.39903	.836
		African	-.20307	.47447	.980
<b>Effort</b>	Asian	White	.77248	.50313	.502
		African	1.24684	.54008	.151
		Coloured	-.18085	.57021	.992
	White	Asian	-.77248	.50313	.502
		African	.47436	.24434	.289
		Coloured	-.95333	.30520	.022*
African	Asian	-1.24684	.54008	.151	

		White	-.47436	.24434	.289
		Coloured	-1.42769	.36291	.002*
	Coloured	Asian	.18085	.57021	.992
		White	.95333	.30520	.022*
		African	1.42769	.36291	.002*

Table 10.12: (Continued)

<b>Effectiveness</b>	Asian	White	.50715	.44103	.724
		African	.78639	.47342	.431
		Coloured	-.23138	.49983	.975
	White	Asian	-.50715	.44103	.724
		African	.27924	.21418	.637
		Coloured	-.73854	.26753	.056
	African	Asian	-.78639	.47342	.431
		White	-.27924	.21418	.637
		Coloured	-1.01778	.31811	.017*
	Coloured	Asian	.23138	.49983	.975
		White	.73854	.26753	.056
		African	1.01778	.31811	.017*
<b>Satisfaction</b>	Asian	White	.33753	.44385	.901
		African	.83386	.47645	.383
		Coloured	-.17287	.50303	.990
	White	Asian	-.33753	.44385	.901
		African	.49633	.21555	.125
		Coloured	-.51041	.26925	.310
	African	Asian	-.83386	.47645	.383
		White	-.49633	.21555	.152
		Coloured	-1.00673*	.32015	.020*
	Coloured	Asian	.17287	.50303	.990
		White	.51041	.26925	.310
		African	1.00673*	.32015	.020*

(\* p ≤ 0.05)

According to Table 10.12 Asians differ significantly from Africans re Pride in Work ( $p = 0.024$ ;  $p$  being  $< 0.05$ ). Also, whites and Africans differ significantly on Pride in Work ( $p = 0.000$ ;  $p$  being  $< 0.05$ ). Africans also differ significantly from coloureds ( $p = 0.000$ ;  $p$  being  $< 0.05$ ). On Job Involvement there is a significant difference between whites and Africans ( $p = 0.028$ ;  $p$  being  $< 0.05$ ).

Important to note here is that only these two population groups differ from each other. Asians do not differ significantly from the other three groups on Activity Preference. whites however, differ significantly from Africans ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) and coloureds ( $p = 0.016$ ;  $p$  being  $< 0.05$ ).

It is quite interesting that Asians differ significantly from Africans on Social Status of the Job ( $p = 0.004$ ;  $p$  being  $< 0.05$ ) but not from whites or coloureds. whites however, differ significantly from Africans on this dimension ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) and coloureds ( $p = 0.023$ ;  $p$  being  $< 0.05$ ). Africans and coloureds do not differ here. As regards Individualism, Asians and Africans differ significantly ( $p = 0.001$ ;  $p$  being  $< 0.05$ ). Africans also differ significantly on Individualism from whites ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) as well as from coloureds ( $p = 0.037$ ;  $p$  being  $< 0.05$ ). However, Asians, coloureds and whites do not differ here. In terms of the work value dimension Masculinity, Africans differ significantly from Asians ( $p = 0.001$ ;  $p$  being  $< 0.05$ ) and whites ( $p = 0.000$ ;  $p$  being  $< 0.05$ ). On this dimension whites, coloureds and Asians do not differ.

The only significant differences that can be observed on the leadership dimension Idealised Influence (Attributes) are between Africans and coloureds ( $p = 0.003$ ;  $p$  being  $< 0.05$ ). On Idealised Influence (Behaviours) Africans differ significantly from all three other groups, viz Asians ( $p = 0.013$ ;  $p$  being  $< 0.05$ ), whites ( $p = 0.019$ ;  $p$  being  $< 0.05$ ), and coloureds ( $p = 0.002$ ;  $p$  being  $< 0.05$ ). No differences could be found between Asians, whites and coloureds. On Inspirational Motivation as a further dimension of transformational leadership, only coloureds and whites differ significantly. In terms of Intellectual Stimulation a few significant differences can be observed. Asians differ significantly from whites ( $p = 0.030$ ;  $p$  being  $< 0.05$ ) and from Africans ( $p = 0.001$ ;  $p$  being  $< 0.05$ ). whites and Africans differ significantly ( $p = 0.044$ ;  $p$  being  $< 0.05$ ), while Africans also differ significantly from coloureds ( $p = 0.005$ ;  $p$  being  $< 0.05$ ). Here too, there are no differences between coloureds and Asians, as well as coloureds and whites. With regards to the leadership dimension Individualised Consideration Asians and Africans differ significantly ( $p = 0.000$ ;  $p$  being  $< 0.05$ ). Africans not only differ significantly from Asians, but also from whites ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) and coloureds ( $p = 0.000$ ;  $p$  being  $< 0.05$ ). The Coloured group espoused no significant differences with the Asian and White groups. On the first of the leadership outcomes, namely Extra Effort, coloureds differ significantly from both Africans ( $p = 0.002$ ;  $p$  being  $< 0.05$ ) and whites ( $p = 0.022$ ;  $p$  being  $< 0.05$ ). The Asian group does not espouse any significant differences with the White, African or Coloured groups. The second leadership outcome, Effectiveness, shows a significant difference only between the African and Coloured groups ( $p = 0.017$ ;  $p$  being  $< 0.05$ ). No other differences between any of the other groups were found. This finding also applies to the last leadership outcome, Satisfaction, with only Africans and coloureds differing significantly ( $p = 0.020$ ;  $p$  being  $< 0.05$ ).

With regards to Internality, the results show that Africans and whites differ significantly ( $p = 0.000$ ;  $p$  being  $< 0.05$ ), so do Africans and Asians ( $p = 0.005$ ;  $p$  being  $< 0.05$ ). A significant difference between Africans and coloureds ( $p = 0.048$ ;  $p$  being  $< 0.05$ ) is also evident. No significant difference between Asians, whites and coloureds could be found.

In summary, and in terms of work-related value differences, none of the population groups show any significant differences from each other on the dimensions Attitude toward Earnings, Upward Striving (Progress), Power Distance and Uncertainty Avoidance. In addition, no significant differences could be found on any of the three transactional leadership dimensions, viz Constructive Transaction, Management-by-Exception (Active) and Management-by-Exception (Passive) as well as on the non-leadership or Laissez Faire dimension.

#### 10.3.3.2 Kruskal-Wallis one-way analysis of variance

As the sizes of the different population groups differ comprehensively, viz the Asian group ( $N=16$ ) and the White group ( $N=367$ ), it was decided to do a non-parametric analysis of variance with population group as the independent variable. The results of this one-way analysis of variance (Kruskal-Wallis) are presented in Table 10.13.

Table 10.13: Kruskal-Wallis one-way analysis of variance: Population group.

	<b>Pride</b>	<b>Involvement</b>	<b>Activity</b>	<b>Earnings</b>
Chi-Square	56.549	5.864	32.826	15.647
Df	3	3	3	3
Asymp. Sig.	.000*	.118	.000*	.001*

	<b>Social</b>	<b>Progress</b>	<b>Internality</b>	<b>PD</b>
Chi-Square	62.029	3.324	28.178	4.082
Df	3	3	3	3
Asymp. Sig.	.000*	.344	.000*	.253

	<b>UA</b>	<b>Indiv</b>	<b>Masculinity</b>	<b>Influence A</b>
Chi-Square	5.121	39.649	24.648	15.040
Df	3	3	3	3
Asymp. Sig.	.163	.000*	.000*	.002*

	<b>Influence B</b>	<b>Motivation</b>	<b>Stimulation</b>	<b>Consideration</b>
Chi-Square	21.391	18.671	18.717	42.972
Df	3	3	3	3
Asymp. Sig.	.000*	.000*	.000*	.000*

Table 10.13: (Continued)

	<b>Constructive</b>	<b>MBE-Active</b>	<b>MBE-Passive</b>	<b>Laissez</b>
Chi-Square	5.749	11.673	2.129	2.228
Df	3	3	3	3
Ap. Sig.	.124	.009*	.546	.526

	<b>Effort</b>	<b>Effective</b>	<b>Satisfaction</b>
Chi-Square	16.423	11.266	8.157
Df	3	3	3
Asymp. Sig.	.001*	.010*	.043*
(* p ≤ 0.05)			

The Kruskal-Wallis H-statistic has approximately a chi-square distribution under the hypothesis that the four population groups have the same distribution. The small values of the significance levels for the chi-square (Table 10.13) of the dimensions Pride in Work, Activity Preference, Attitude toward Earnings, Social Status of the Job, Individualism, Masculinity, the five dimensions of transformational leadership, MBE-active, Internality and the three leadership outcomes indicate that the four population groups differ significantly on these 16 dimensions. The Kruskal-Wallis H-statistic produced the same results as the parametric one-way analysis of variance, except for Job Involvement. No significant differences between the four population groups could be obtained for Job Involvement.

#### 10.3.4 WORK EXPERIENCE

##### 10.3.4.1 One-way analysis of variance

Years of work experience was the next independent variable on which a one-way analysis of variance (Levene's test of homogeneity) was done. These results are presented in Table 10.14.

Table 10.14: One-way analysis of variance – Levene’s test for homogeneity:  
Work experience.

	<b>Levene Statistic</b>	<b>df1</b>	<b>df2</b>	<b>Sig</b>
<b>Pride</b>	6.030	5	503	.000*
<b>Involvement</b>	.807	5	503	.545
<b>Activity</b>	1.858	5	503	.100
<b>Earnings</b>	1.390	5	503	.227
<b>Status</b>	.016	5	503	1.000
<b>Progress</b>	.330	5	503	.895
<b>Internality</b>	2.105	5	503	.064
<b>PD</b>	1.444	5	500	.207
<b>UA</b>	.468	5	503	.800
<b>Individualism</b>	3.652	5	503	.003*
<b>Masculinity</b>	2.780	5	503	.017*
<b>Influence A</b>	1.469	5	503	.198
<b>Influence B</b>	1.029	5	503	.400
<b>Motivation</b>	.270	5	503	.929
<b>Stimulation</b>	3.639	5	503	.003*
<b>Consideration</b>	3.310	5	503	.006*
<b>Constructive T</b>	.724	5	503	.606
<b>MBE-Active</b>	.808	5	503	.544
<b>MBE-Passive</b>	.474	5	503	.796
<b>Laissez</b>	1.574	5	503	.166
<b>Effort</b>	2.415	5	503	.035*
<b>Effectiveness</b>	1.274	5	503	.274
<b>Satisfaction</b>	2.037	5	503	.072

(\* p ≤ 0.05)

According to Table 10.14, there are significant differences in variance as regards the dimensions Pride in Work, Individualism, Masculinity, Intellectual Stimulation, Individualised Consideration, and Extra Effort. Due to the fact that the sizes of the groups in terms of work experience are quite dissimilar, a non-parametric (Kruskal-Wallis) one-way analysis of variance was also done, the results of which are presented in Table 10.15.

Table 10.15: One-way analysis of variance: Work experience.

				Df	F	Sig
<b>Pride</b>	Between	(Combined)		5	3.559	.004*
	Groups	Linear	Unweighted	1	9.698	.002
			Weighted	1	8.767	.003
			Deviation	4	2.257	.062
	Within Groups			503		
Total			508			
<b>Involvement</b>	Between	(Combined)		5	3.381	.005*
	Groups	Linear	Unweighted	1	10.513	.001
			Weighted	1	5.746	.017
			Deviation	4	2.790	.026
	Within Groups			503		
Total			508			
<b>Activity</b>	Between	(Combined)		5	4.667	.000*
	Groups	Linear	Unweighted	1	22.613	.000
			Weighted	1	19.081	.000
			Deviation	4	1.064	.374
	Within Groups			503		
Total			508			
<b>Earnings</b>	Between	(Combined)		5	2.609	.024*
	Groups	Linear	Unweighted	1	9.532	.002
			Weighted	1	11.896	.001
			Deviation	4	.287	.886
	Within Groups			503		
Total			508			
<b>Status</b>	Between	(Combined)		5	1.347	.243
	Groups	Linear	Unweighted	1	.236	.627
			Weighted	1	.226	.635
			Deviation	4	1.628	.166
	Within Groups			503		
Total			508			



Table 10.15: (Continued)

<b>Progress</b>	Between	(Combined)		5	2.216	.052
	Groups	Linear	Unweighted	1	.463	.496
		Term	Weighted	1	.120	.729
			Deviation	4	2.740	.028
	Within Groups			503		
	Total			508		
<b>Internality</b>	Between	(Combined)		5	5.623	.000*
	Groups	Linear	Unweighted	1	15.821	.000
		Term	Weighted	1	14.471	.000
			Deviation	4	3.410	.009
	Within Groups			503		
	Total			508		
<b>PD</b>	Between	(Combined)		5	.922	.467
	Groups	Linear	Unweighted	1	1.027	.311
		Term	Weighted	1	2.371	.124
			Deviation	4	.559	.692
	Within Groups			500		
	Total			505		
<b>UA</b>	Between	(Combined)		5	1.217	.300
	Groups	Linear	Unweighted	1	2.434	.119
		Term	Weighted	1	3.199	.074
			Deviation	4	.722	.577
	Within Groups			503		
	Total			508		
<b>Individ</b>	Between	(Combined)		5	2.135	.060
	Groups	Linear	Unweighted	1	1.800	.180
		Term	Weighted	1	1.729	.189
			Deviation	4	2.236	.064
	Within Groups			503		
	Total			508		

Table 10.15: (Continued)

<b>Masculinity</b>	Between	(Combined)		5	3.141	.008*
	Groups	Linear	Unweighted	1	.534	.465
		Term	Weighted	1	.036	.850
			Deviation	4	3.917	.004
	Within Groups			503		
	Total			508		
<b>Influence A</b>	Between	(Combined)		5	2.048	.071
	Groups	Linear	Unweighted	1	3.955	.047
		Term	Weighted	1	2.836	.093
			Deviation	4	1.851	.118
	Within Groups			503		
	Total			508		
<b>Influence B</b>	Between	(Combined)		5	1.950	.085
	Groups	Linear	Unweighted	1	3.319	.069
		Term	Weighted	1	2.181	.140
			Deviation	4	1.892	.110
	Within Groups			503		
	Total			508		
<b>Motivation</b>	Between	(Combined)		5	1.624	.152
	Groups	Linear	Unweighted	1	.198	.657
		Term	Weighted	1	.974	.324
			Deviation	4	1.786	.130
	Within Groups			503		
	Total			508		
<b>Stimulation</b>	Between	(Combined)		5	2.373	.038*
	Groups	Linear	Unweighted	1	4.227	.040
		Term	Weighted	1	2.574	.109
			Deviation	4	2.323	.056
	Within Groups			503		
	Total			508		
<b>Consider</b>	Between	(Combined)		5	3.996	.001*
	Groups	Linear	Unweighted	1	14.174	.000

	Term	Weighted	1	13.754	.000
		Deviation	4	1.556	.185
Within Groups			503		
Total			508		

Table 10.15: (Continued)

<b>Constructive</b>	Between	(Combined)	5	1.043	.392
	Groups	Linear	1	.690	.406
		Term	1	.606	.437
			4	1.152	.331
	Within Groups		503		
	Total		508		
<b>Active</b>	Between	(Combined)	5	1.613	.155
	Groups	Linear	1	.002	.967
		Term	1	.853	.356
			4	1.803	.127
	Within Groups		503		
	Total		508		
<b>Passive</b>	Between	(Combined)	5	1.707	.131
	Groups	Linear	1	3.082	.080
		Term	1	1.635	.202
			4	1.725	.143
	Within Groups		503		
	Total		508		
<b>Laissez</b>	Between	(Combined)	5	2.185	.055
	Groups	Linear	1	5.744	.017
		Term	1	3.024	.083
			4	1.975	.097
	Within Groups		503		
	Total		508		
<b>Effort</b>	Between	(Combined)	5	2.471	.032*
	Groups	Linear	1	5.663	.018
		Term	1	7.333	.007
			4	1.256	.287
	Within Groups		503		
	Total		508		
<b>Effective</b>	Between	(Combined)	5	2.396	.037*
	Groups	Linear	1	4.907	.027
		Term	1	5.499	.019

		Deviation	4	1.620	.168
	Within Groups		503		
	Total		508		

Table 10.15: (Continued)

<b>Satisfaction</b>	Between	(Combined)	5	3.403	.005*
	Groups	Linear	1	9.854	.002
		Term	1	11.754	.001
			4	1.315	.263
	Within Groups		503		
	Total		508		
(* p ≤ 0.05)					

It is evident from Table 10.15 that the six categories of work experience differ significantly on the dimensions Pride in Work, Job Involvement, Activity Preference, Attitude toward Earnings, Masculinity, Intellectual Stimulation, Individualised Consideration, Internality and all three leadership outcomes, viz Extra Effort, Effectiveness and Satisfaction.

Post hoc comparisons were done by means of the Scheffé test. The category “0-5 years work experience” differ significantly from the category “21-30 years work experience” ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) on Pride in Work. As regards Job Involvement the category “0-5 years” differs significantly from the category “more than 30 years” ( $p = 0.041$ ;  $p$  being  $< 0.05$ ). On Activity Preference, members with 0-5 years work experience differ significantly with those having 21-30 years experience ( $p = 0.026$ ;  $p$  being  $< 0.05$ ) and with those having more than 30 years experience ( $p = 0.002$ ;  $p$  being  $< 0.05$ ). With regards to Masculinity it is again the category “0-5 years” that differs significantly ( $p = 0.042$ ;  $p$  being  $< 0.05$ ), in this case from the category “11-15 years”. Members with 0-5 years experience differ significantly from those having 11-15 years experience ( $p = 0.029$ ;  $p$  being  $< 0.05$ ), 21-30 years experience ( $p = 0.006$ ;  $p$  being  $< 0.05$ ), and more than 30 years experience ( $p = 0.040$ ;  $p$  being  $< 0.05$ ) on the dimension Individualised Consideration. In terms of Extra Effort as a leadership outcome, members with 0-5 years experience differ significantly from those with 21-30 years experience ( $p = 0.044$ ;  $p$  being  $< 0.05$ ).

The dimension Effectiveness (the second leadership outcome) shows members with 0-5 years experience differing significantly from those with 21-30 years ( $p = 0.048$ ;  $p$  being  $< 0.05$ ). The same two groups differ significantly from each other ( $p = 0.012$ ;  $p$  being  $< 0.05$ ) on the dimension Satisfaction (the third leadership outcome). On Internality, members with 0-5 years work

experience differ significantly from all the other levels of work experience, viz “6-10 years” ( $p = 0.006$ ;  $p$  being  $< 0.05$ ), “11-15 years” ( $p = 0.00001$ ;  $p$  being  $< 0.05$ ), “16-20 years” ( $p = 0.006$ ;  $p$  being  $< 0.05$ ), “21-30 years” ( $p = 0.000$ ;  $p$  being  $< 0.05$ ), and “more than 30 years” ( $p = 0.015$ ;  $p$  being  $< 0.05$ ). No significant differences could be found between any levels of work experience on the dimensions Attitude toward Earnings, Social Status of the Job, Upward Striving, Power Distance, Uncertainty Avoidance, Individualism, Laissez Faire as well as all the dimensions of both transactional and transformational leadership, except for Individualised Consideration, which was discussed above.

#### 10.3.4.2 Kruskal-Wallis one-way analysis of variance

The non-parametric one-way analysis of variance (Kruskal-Wallis) was also done on the independent variable Work Experience, the results of which are presented in Table 10.16.

Table 10.16: Kruskal-Wallis one-way analysis of variance: Work experience.

	<b>Pride</b>	<b>Involvement</b>	<b>Activity</b>	<b>Earnings</b>
Chi-Square	12.649	15.779	18.262	11.594
Df	5	5	5	5
Asymp. Sig.	.027*	.008*	.003*	.041*

	<b>Social</b>	<b>Progress</b>	<b>Internality</b>	<b>PD</b>
Chi-Square	6.563	10.560	23.173	3.332
Df	5	5	5	5
Asymp. Sig.	.255	.061	.000*	.649

	<b>UA</b>	<b>Indiv</b>	<b>Masculinity</b>	<b>Influence A</b>
Chi-Square	8.549	5.598	16.678	9.100
Df	5	5	5	5
Asymp. Sig.	.128	.347	.005*	.105

	<b>Influence B</b>	<b>Motivation</b>	<b>Stimulation</b>	<b>Consideration</b>
Chi-Square	8.810	6.865	8.588	16.955
Df	5	5	5	5
Asymp. Sig.	.117	.231	.127	.005*

	Constructive	MBE-Active	MBE-Passive	Laissez
Chi-Square	3.727	7.620	9.561	8.646
Df	5	5	5	5
Ap. Sig.	.589	.178	.089	.124

Table 10.16: (Continued)

	Effort	Effective	Satisfaction
Chi-Square	10.573	8.794	12.579
Df	5	5	5
Asymp. Sig.	.061	.118	.028*

(\*  $p \leq 0.05$ )

It is clearly shown in Table 10.16 that, in terms of the non-parametric one-way analysis of variance, the six categories of years of work experience differ on the same dimensions except for Intellectual Stimulation, Extra Effort, and Effectiveness.

### 10.3.5 AGE

#### 10.3.5.1 One-way analysis of variance

The research data was also subjected to a one-way analysis of variance for the independent variable “age”. The results of this analysis are presented in Table 10.17.

Table 10.17: One-way analysis of variance: Age.

				df	F	Sig
<b>Pride</b>	Between	(Combined)		2	.054	.948
	Groups	Linear	Unweighted	1	.103	.749
		Term	Weighted	1	.061	.805
			Deviation	1	.046	.830
	Within Groups			496		
	Total			498		
<b>Involvement</b>	Between	(Combined)		2	.228	.796
	Groups	Linear	Unweighted	1	.004	.951
		Term	Weighted	1	.147	.702
			Deviation	1	.310	.578
	Within Groups			496		
	Total			498		

<b>Activity</b>	Between	(Combined)		2	.997	.370	
	Groups	Linear	Unweighted	1	.738	.391	
		Term	Weighted		1	1.685	.195
			Deviation		1	.309	.579
	Within Groups			496			
Total			498				

Table 10.17: (Continued)

<b>Earnings</b>	Between	(Combined)		2	1.481	.229	
	Groups	Linear	Unweighted	1	.350	.554	
		Term	Weighted		1	1.711	.192
			Deviation		1	1.250	.264
	Within Groups			496			
Total			498				
<b>Status</b>	Between	(Combined)		2	2.727	.066	
	Groups	Linear	Unweighted	1	4.985	.026	
		Term	Weighted		1	5.207	.023
			Deviation		1	.247	.619
	Within Groups			496			
Total			498				
<b>Progress</b>	Between	(Combined)		2	1.409	.245	
	Groups	Linear	Unweighted	1	.275	.600	
		Term	Weighted		1	1.534	.216
			Deviation		1	1.283	.258
	Within Groups			496			
Total			498				
<b>Internality</b>	Between	(Combined)		2	.252	.778	
	Groups	Linear	Unweighted	1	.430	.512	
		Term	Weighted		1	.496	.482
			Deviation		1	.007	.932
	Within Groups			496			
Total			498				
<b>PD</b>	Between	(Combined)		2	1.625	.198	
	Groups	Linear	Unweighted	1	2.779	.096	
		Term	Weighted		1	1.228	.268
			Deviation		1	2.023	.156
	Within Groups			493			
Total			495				
<b>UA</b>	Between	(Combined)		2	6.454	.002*	
	Groups	Linear	Unweighted	1	12.609	.000	
		Term	Weighted		1	11.309	.001
			Deviation		1	1.599	.207
	Within Groups			496			
Total			498				
<b>Individ</b>	Between	(Combined)		2	.222	.801	
	Groups	Linear	Unweighted	1	.134	.714	

	Term	Weighted	1	.002	.962
		Deviation	1	.441	.507
Within Groups			496		
Total			498		

Table 10.17: (Continued)

<b>Masculinity</b>	Between	(Combined)	2	1.316	.269
	Groups	Linear	1	.099	.753
		Term	1	1.113	.292
			1	1.520	.218
	Within Groups		496		
Total		498			
<b>Influence A</b>	Between	(Combined)	2	.005	.995
	Groups	Linear	1	.009	.924
		Term	1	.006	.936
			1	.003	.959
	Within Groups		496		
Total		498			
<b>Influence B</b>	Between	(Combined)	2	.033	.968
	Groups	Linear	1	.018	.892
		Term	1	.000	.991
			1	.066	.798
	Within Groups		496		
Total		498			
<b>Motivation</b>	Between	(Combined)	2	.718	.488
	Groups	Linear	1	.054	.816
		Term	1	.608	.436
			1	.828	.363
	Within Groups		496		
Total		498			
<b>Stimulation</b>	Between	(Combined)	2	.001	.999
	Groups	Linear	1	.000	.993
		Term	1	.000	.994
			1	.001	.975
	Within Groups		496		
Total		498			
<b>Consider</b>	Between	(Combined)	2	.756	.470
	Groups	Linear	1	1.501	.221
		Term	1	1.246	.265
			1	.265	.607
	Within Groups		496		
Total		498			
<b>Constructive</b>	Between	(Combined)	2	.075	.928
	Groups	Linear	1	.010	.919



	Term	Weighted	1	.074	.786
		Deviation	1	.076	.783
Within Groups			496		
Total			498		

Table 10.17: (Continued)

<b>Active</b>	Between	(Combined)	2	1.530	.217
	Groups	Linear	1	1.940	.164
		Term	1	3.003	.084
			1	.058	.811
	Within Groups		496		
	Total		498		
<b>Passive</b>	Between	(Combined)	2	.923	.398
	Groups	Linear	1	.451	.502
		Term	1	.000	.995
			1	1.846	.175
	Within Groups		496		
	Total		498		
<b>Laissez</b>	Between	(Combined)	2	.066	.936
	Groups	Linear	1	.083	.773
		Term	1	.020	.887
			1	.112	.739
	Within Groups		496		
	Total		498		
<b>Effort</b>	Between	(Combined)	2	1.566	.210
	Groups	Linear	1	2.338	.127
		Term	1	3.131	.077
			1	.001	.979
	Within Groups		496		
	Total		498		
<b>Effective</b>	Between	(Combined)	2	.965	.382
	Groups	Linear	1	1.869	.172
		Term	1	1.724	.190
			1	.206	.650
	Within Groups		496		
	Total		498		
<b>Satisfaction</b>	Between	(Combined)	2	1.340	.263
	Groups	Linear	1	2.655	.104
		Term	1	2.239	.135
			1	.440	.507
	Within Groups		496		
	Total		498		
(* p ≤ 0.05)					

According to Table 10.17, the age groups differ significantly only in terms of Uncertainty Avoidance. Post hoc comparisons by means of the Scheffé test prove age group 2 (20-24 years) to differ significantly from age group 3 (25-34 years) with  $p = 0.033$ ;  $p$  being  $< 0.05$ . Group 2 also differ significantly from group 4 (35 years and older) with  $p = 0.002$ ;  $p$  being  $< 0.05$ .

#### 10.3.5.2 Kruskal-Wallis one-way analysis of variance

Due to the unequal spread of respondents across the different levels of the variable “age”, a Kruskal-Wallis one-way analysis of variance was also applied to the research data. These results are presented in Table 10.18.

Table 10.18: Kruskal-Wallis one-way analysis of variance: Age.

	Pride	Involvement	Activity	Earnings
Chi-Square	.973	.420	1.406	1.963
Df	2	2	2	2
Asymp. Sig.	.615	.811	.495	.375

	Social	Progress	Internality	PD
Chi-Square	5.442	3.766	.131	2.750
Df	2	2	2	2
Asymp. Sig.	.066	.152	.936	.253

Table 10.18: (Continued)

	UA	Indiv	Masculinity	Influence A
Chi-Square	14.158	.425	4.537	.044
Df	2	2	2	2
Asymp. Sig.	.001*	.808	.103	.978

	Influence B	Motivation	Stimulation	Consideration
Chi-Square	.031	1.150	.008	1.172
Df	2	2	2	2
Asymp. Sig.	.985	.563	.996	.557

	Constructive	MBE-Active	MBE-Passive	Laissez
Chi-Square	.305	3.271	2.657	.101
Df	2	2	2	2
Ap. Sig.	.859	.195	.265	.951

	Effort	Effective	Satisfaction
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Chi-Square	3.320	1.060	3.322
Df	2	2	2
Asymp. Sig.	.190	.589	.190
(* p ≤ 0.05)			

The results reflected in Table 10.18 confirm the three age groups to differ only with regards to Uncertainty Avoidance.

### 10.3.6 RELIGION

#### 10.3.6.1 One-way analysis of variance

Religion served as the next independent variable on which a one-way analysis of variance was done, the results of which are presented in Table 10.20. The results of Levene's test for homogeneity of variance are presented in Table 10.19.

Table 10.19: One-way analysis of variance - Levene's test of homogeneity of variance: Religion.

	Levene Statistic	df1	df2	Sig
Pride	5.805	4	504	.000*
Involvement	.597	4	504	.665
Activity	2.350	4	504	.053
Earnings	.990	4	504	.412
Status	.458	4	504	.767
Progress	.313	4	504	.869
Internality	.666	4	504	.616
PD	.727	4	501	.574
UA	.478	4	504	.752
Individualism	1.536	4	504	.190
Masculinity	2.714	4	504	.029*
Influence A	2.233	4	504	.064
Influence B	1.003	4	504	.405
Motivation	2.043	4	504	.087
Stimulation	.455	4	504	.769
Consideration	5.060	4	504	.001*
Constructive T	.390	4	504	.816
MBE-Active	.772	4	504	.544
MBE-Passive	1.599	4	504	.173

<b>Laissez</b>	.567	4	504	.687
<b>Effort</b>	1.276	4	504	.278
<b>Effective</b>	3.061	4	504	.016*

(\* p ≤ 0.05)

According to Table 10.19, there is an inequality of variance between the five religious groups with respect to Pride in Work, Masculinity, Consideration and Effectiveness.

Table 10.20: One-way analysis of variance: Religion.

				df	F	Sig.
<b>Pride</b>	Between	(Combined)		4	6.370	.000*
	Groups	Linear	Unweighted	1	.104	.748
		Term	Weighted	1	3.078	.080
			Deviation	3	7.467	.000
	Within Groups			504		
	Total			508		
<b>Involvement</b>	Between	(Combined)		4	2.212	.067
	Groups	Linear	Unweighted	1	.000	.996
		Term	Weighted	1	.460	.498
			Deviation	3	2.796	.040
	Within Groups			504		
	Total			508		
<b>Activity</b>	Between	(Combined)		4	4.016	.003*
	Groups	Linear	Unweighted	1	.099	.754
		Term	Weighted	1	1.602	.206
			Deviation	3	4.820	.003
	Within Groups			504		
	Total			508		
<b>Earnings</b>	Between	(Combined)		4	.614	.653
	Groups	Linear	Unweighted	1	2.169	.141
		Term	Weighted	1	1.314	.252
			Deviation	3	.381	.767
	Within Groups			504		
	Total			508		
<b>Status</b>	Between	(Combined)		4	3.444	.009*
	Groups	Linear	Unweighted	1	.891	.346
		Term	Weighted	1	.418	.518
			Deviation	3	4.453	.004
	Within Groups			504		
	Total			508		
<b>Progress</b>	Between	(Combined)		4	.180	.949
	Groups	Linear	Unweighted	1	.116	.734

	Term	Weighted	1	.123	.726
		Deviation	3	.199	.897
Within Groups			504		
Total			508		

Table 10.20: (Continued)

<b>Internality</b>	Between	(Combined)		4	1.342	.253
	Groups	Linear	Unweighted	1	.089	.765
		Term	Weighted	1	.051	.821
			Deviation	3	1.772	.151
	Within Groups			504		
Total			508			
<b>PD</b>	Between	(Combined)		4	.513	.726
	Groups	Linear	Unweighted	1	.971	.325
		Term	Weighted	1	1.017	.314
			Deviation	3	.345	.793
	Within Groups			501		
Total			505			
<b>UA</b>	Between	(Combined)		4	1.115	.349
	Groups	Linear	Unweighted	1	.113	.737
		Term	Weighted	1	.009	.923
			Deviation	3	1.483	.218
	Within Groups			504		
Total			508			
<b>Individ</b>	Between	(Combined)		4	3.369	.010*
	Groups	Linear	Unweighted	1	1.142	.286
		Term	Weighted	1	.240	.624
			Deviation	3	4.412	.004
	Within Groups			504		
Total			508			
<b>Masculinity</b>	Between	(Combined)		4	2.012	.092
	Groups	Linear	Unweighted	1	.274	.601
		Term	Weighted	1	1.568	.211
			Deviation	3	2.160	.092
	Within Groups			504		
Total			508			
<b>Influence A</b>	Between	(Combined)		4	1.105	.353
	Groups	Linear	Unweighted	1	.093	.761
		Term	Weighted	1	.281	.597
			Deviation	3	1.380	.248
	Within Groups			504		
Total			508			
<b>Influence B</b>	Between	(Combined)		4	1.344	.253
	Groups	Linear	Unweighted	1	1.606	.206
		Term	Weighted	1	1.077	.300

		Deviation	3	1.432	.232
	Within Groups		504		
	Total		508		

Table 10.20: (Continued)

<b>Motivation</b>	Between	(Combined)		4	1.671	.155
	Groups	Linear	Unweighted	1	.047	.829
		Term	Weighted	1	.999	.318
			Deviation	3	1.895	.129
	Within Groups			504		
	Total			508		
<b>Stimulation</b>	Between	(Combined)		4	1.435	.221
	Groups	Linear	Unweighted	1	.041	.839
		Term	Weighted	1	.133	.715
			Deviation	3	1.869	.134
	Within Groups			504		
	Total			508		
<b>Consider</b>	Between	(Combined)		4	2.131	.076
	Groups	Linear	Unweighted	1	.215	.643
		Term	Weighted	1	.116	.734
			Deviation	3	2.802	.039
	Within Groups			504		
	Total			508		
<b>Constructive</b>	Between	(Combined)		4	1.323	.260
	Groups	Linear	Unweighted	1	.535	.465
		Term	Weighted	1	.220	.639
			Deviation	3	1.691	.168
	Within Groups			504		
	Total			508		
<b>Active</b>	Between	(Combined)		4	2.691	.031*
	Groups	Linear	Unweighted	1	.358	.550
		Term	Weighted	1	.096	.757
			Deviation	3	3.556	.014
	Within Groups			504		
	Total			508		
<b>Passive</b>	Between	(Combined)		4	1.045	.383
	Groups	Linear	Unweighted	1	.040	.841
		Term	Weighted	1	.357	.551
			Deviation	3	1.275	.282
	Within Groups			504		
	Total			508		
<b>Laissez</b>	Between	(Combined)		4	1.474	.209
	Groups	Linear	Unweighted	1	3.359	.067
		Term	Weighted	1	2.930	.088

		Deviation	3	.989	.398
	Within Groups		504		
	Total		508		

Table 10.20: (Continued)

<b>Effort</b>	Between	(Combined)		4	1.152	.331
	Groups	Linear	Unweighted	1	.610	.435
		Term	Weighted	1	1.067	.302
			Deviation	3	1.181	.316
	Within Groups			504		
	Total		508			
<b>Effective</b>	Between	(Combined)		4	.536	.709
	Groups	Linear	Unweighted	1	.075	.784
		Term	Weighted	1	.010	.921
			Deviation	3	.712	.545
	Within Groups			504		
	Total		508			
<b>Satisfaction</b>	Between	(Combined)		4	1.095	.385
	Groups	Linear	Unweighted	1	1.999	.158
		Term	Weighted	1	1.955	.163
			Deviation	3	.809	.490
	Within Groups			504		
	Total		508			
(* p ≤ 0.05)						

It is clear from Table 10.20 that the five religious groups differ significantly on Pride in Work, Activity Preference, Social Status of the Job, Individualism, and MBE-Active.

Post hoc comparisons were done by means of the Scheffé test. The results show that group 1 (the high churches, i.e. Catholic and Anglican) differ significantly ( $p = 0.002$ ;  $p$  being  $< 0.05$ ) from group 2 (the three Afrikaans sister Churches) on the dimension Pride in Work. Group 2 also differ significantly ( $p = 0.022$ ;  $p$  being  $< 0.05$ ) from group 5 (the “other” religions<sup>2</sup>). On Activity Preference it is again group 1 differing significantly ( $p = 0.028$ ;  $p$  being  $< 0.05$ ) from group 2. In terms of the dimension Individualism the same two groups of churches differ significantly ( $p = 0.020$ ;  $p$  being  $< 0.05$ ). With regards to MBE-Active, group 3 (Presbyterians and Methodists) differ significantly from the members of the Pentacostal and Apostolic Faiths (group 4) with  $p = 0.046$ ;  $p$  being  $< 0.05$ .

<sup>2</sup> The religious group “other” includes Lutheran, Zionist, Missionary, Independent, Islam, and Hindu.

## 10.3.7 EDUCATIONAL QUALIFICATION

## 10.3.7.1 One-way analysis of variance

Educational Qualification served as the last independent variable on which a one-way analysis of variance was done, the results of which are presented in Table 10.22. The results of the Levene test for homogeneity of variance appear in Table 10.21.

Table 10.21: One-way analysis of variance - Levene's test of homogeneity of variance: Educational qualifications.

	<b>Levene Statistic</b>	<b>df1</b>	<b>Df2</b>	<b>Sig</b>
Pride	1.145	3	502	.330
Involvement	1.691	3	502	.168
Activity	2.666	3	502	.047*
Earnings	1.231	3	502	.298
Status	2.047	3	502	.106
Progress	.979	3	502	.402
Internality	2.452	3	502	.063
PD	1.029	3	499	.379
UA	.817	3	502	.485
Individualism	1.670	3	502	.173
Masculinity	.599	3	502	.616
Influence A	.616	3	502	.605
Influence B	.212	3	502	.888
Motivation	1.156	3	502	.326
Stimulation	1.613	3	502	.185
Consideration	.369	3	502	.775
Constructive T	.576	3	502	.631
MBE-Active	1.704	3	502	.165
MBE-Passive	1.924	3	502	.125
Laissez	2.518	3	502	.057
Effort	.532	3	502	.660
Effective	1.372	3	502	.250
			502	.232

(\* p ≤ 0.05)



Table 10.21 shows that, except for Activity Preference, there are no significant differences in variance between any of the four educational groups.

Table 10.22: One-way analysis of variance: Educational Qualifications.

				Df	F	Sig.
<b>Pride</b>	Between	(Combined)		3	1.167	.322
	Groups	Linear	Unweighted	1	.183	.669
		Term	Weighted	1	2.982	.085
			Deviation	2	.260	.771
	Within Groups			502		
	Total			505		
<b>Involvement</b>	Between	(Combined)		3	3.219	.023*
	Groups	Linear	Unweighted	1	6.863	.009
		Term	Weighted	1	6.131	.014
			Deviation	2	1.763	.173
	Within Groups			502		
	Total			505		
<b>Activity</b>	Between	(Combined)		3	2.559	.054
	Groups	Linear	Unweighted	1	3.581	.059
		Term	Weighted	1	6.532	.011
			Deviation	2	.572	.565
	Within Groups			502		
	Total			505		
<b>Earnings</b>	Between	(Combined)		3	4.064	.007*
	Groups	Linear	Unweighted	1	4.401	.036
		Term	Weighted	1	10.196	.001
			Deviation	2	.999	.369
	Within Groups			502		
	Total			505		
<b>Status</b>	Between	(Combined)		3	2.344	.072
	Groups	Linear	Unweighted	1	2.027	.155
		Term	Weighted	1	5.761	.017
			Deviation	2	.635	.531
	Within Groups			502		
	Total			505		
<b>Progress</b>	Between	(Combined)		3	.461	.710
	Groups	Linear	Unweighted	1	.012	.914
		Term	Weighted	1	1.162	.282
			Deviation	2	.111	.895
	Within Groups			502		
	Total			505		
<b>Internality</b>	Between	(Combined)		3	6.127	.000*

	Groups	Linear Term	Unweighted	1	1.344	.247
			Weighted	1	18.035	.000
			Deviation	2	.172	.842
	Within Groups			502		
	Total			505		

Table 10.22: (Continued)

<b>PD</b>	Between Groups	(Combined) Linear Term	Unweighted	3	.262	.853
			Weighted	1	.722	.396
			Deviation	1	.095	.757
	Within Groups			2	.346	.708
	Total			499		
				502		
<b>UA</b>	Between Groups	(Combined) Linear Term	Unweighted	3	1.534	.205
			Weighted	1	1.917	.167
			Deviation	1	3.382	.067
	Within Groups			2	.610	.544
	Total			502		
				505		
<b>Individ</b>	Between Groups	(Combined) Linear Term	Unweighted	3	5.977	.001*
			Weighted	1	3.045	.082
			Deviation	1	17.827	.000
	Within Groups			2	.052	.949
	Total			502		
				505		
<b>Masculinity</b>	Between Groups	(Combined) Linear Term	Unweighted	3	1.201	.309
			Weighted	1	.810	.369
			Deviation	1	3.219	.073
	Within Groups			2	.193	.825
	Total			502		
				505		
<b>Influence A</b>	Between Groups	(Combined) Linear Term	Unweighted	3	.693	.556
			Weighted	1	.767	.382
			Deviation	1	1.751	.186
	Within Groups			2	.165	.848
	Total			502		
				505		
<b>Influence B</b>	Between Groups	(Combined) Linear Term	Unweighted	3	1.678	.171
			Weighted	1	.171	.679
			Deviation	1	4.456	.035
	Within Groups			2	.288	.750
	Total			502		
				505		
<b>Motivation</b>	Between Groups	(Combined) Linear Term	Unweighted	3	.520	.669
			Weighted	1	.334	.563
			Weighted	1	.677	.411

		Deviation	2	.441	.643
	Within Groups		502		
	Total		505		

Table 10.22: (Continued)

<b>Stimulation</b>	Between	(Combined)		3	4.323	.005*
	Groups	Linear	Unweighted	1	.000	.984
		Term	Weighted	1	10.662	.001
			Deviation	2	1.153	.316
	Within Groups			502		
	Total			505		
<b>Consider</b>	Between	(Combined)		3	4.524	.004*
	Groups	Linear	Unweighted	1	8.381	.004
		Term	Weighted	1	9.905	.002
			Deviation	2	1.834	.161
	Within Groups			502		
	Total			505		
<b>Constructive</b>	Between	(Combined)		3	.916	.433
	Groups	Linear	Unweighted	1	.100	.752
		Term	Weighted	1	2.347	.126
			Deviation	2	.201	.818
	Within Groups			502		
	Total			505		
<b>Active</b>	Between	(Combined)		3	1.486	.217
	Groups	Linear	Unweighted	1	.651	.420
		Term	Weighted	1	4.454	.035
			Deviation	2	.003	.997
	Within Groups			502		
	Total			505		
<b>Passive</b>	Between	(Combined)		3	2.623	.050*
	Groups	Linear	Unweighted	1	1.057	.304
		Term	Weighted	1	4.147	.042
			Deviation	2	1.861	.157
	Within Groups			502		
	Total			505		
<b>Laissez</b>	Between	(Combined)		3	.848	.468
	Groups	Linear	Unweighted	1	1.314	.252
		Term	Weighted	1	2.012	.157
			Deviation	2	.266	.767
	Within Groups			502		
	Total			505		
<b>Effort</b>	Between	(Combined)		3	.140	.936
	Groups	Linear	Unweighted	1	.007	.931
		Term	Weighted	1	.289	.591

		Deviation	2	.066	.936
	Within Groups		502		
	Total		505		

Table 10.22: (Continued)

<b>Effective</b>	Between	(Combined)		3	.264	.851
	Groups	Linear	Unweighted	1	.183	.669
		Term	Weighted	1	.632	.427
			Deviation	2	.080	.923
	Within Groups			502		
	Total		505			
<b>Satisfaction</b>	Between	(Combined)		3	1.877	.132
	Groups	Linear	Unweighted	1	3.765	.053
		Term	Weighted	1	1.224	.269
			Deviation	2	2.204	.111
	Within Groups			502		
	Total		505			
(* p ≤ 0.05)						

The four groups of educational qualification, according to Table 10.22, differ significantly with respect to the dimensions Job Involvement, Attitude toward Earnings, Internality, Individualism, Intellectual Stimulation, Individualised Consideration and Management-by-Exception-Passive. Post hoc multiple comparisons were done by means of the Scheffé test. In this case no significant differences between the four groups could be found on Attitude toward Earnings and Job Involvement. With regards to Internality, group 2 (standard 10 or grade 12, i.e. matric) differ significantly ( $p = 0.004$ ;  $p$  being  $< 0.05$ ) from group 4 (the graduates). On Individualism group 2 also differ significantly from the graduates ( $p = 0.005$ ;  $p$  being  $< 0.05$ ). Here, group 3 (members with a diploma) differ significantly ( $p = 0.017$ ;  $p$  being  $< 0.05$ ) from the graduates too. On the same dimension (i.e. Individualism, the group with grade 10 as highest qualification show a significant difference ( $p = 0.048$ ;  $p$  being  $< 0.05$ ) from the graduates.

#### 10.3.7.2 Kruskal-Wallis one-way analysis of variance

The Kruskal-Wallis one-way analysis of variance was also applied to the research data. These results are presented in Table 10.23.

Table 10.23: Kruskal-Wallis one-way analysis of variance: Educational qualification.

	<b>Pride</b>	<b>Involvement</b>	<b>Activity</b>	<b>Earnings</b>
Chi-Square	2.479	8.223	5.489	12.883
Df	3	3	3	3
Asymp. Sig.	.479	.042	.139	.005*

	<b>Social</b>	<b>Progress</b>	<b>Internality</b>	<b>PD</b>
Chi-Square	7.195	1.977	16.637	1.718
Df	3	3	3	3
Asymp. Sig.	.066	.577	.001*	.633

	<b>UA</b>	<b>Indiv</b>	<b>Masculinity</b>	<b>Influence A</b>
Chi-Square	3.002	24.063	4.734	3.026
Df	3	3	3	3
Asymp. Sig.	.391	.000*	.192	.388

	<b>Influence B</b>	<b>Motivation</b>	<b>Stimulation</b>	<b>Consideration</b>
Chi-Square	5.410	2.681	11.712	12.714
Df	3	3	3	3
Asymp. Sig.	.144	.443	.008*	.005*

	<b>Constructive</b>	<b>MBE-Active</b>	<b>MBE-Passive</b>	<b>Laissez</b>
Chi-Square	2.731	3.999	7.078	1.699
Df	3	3	3	3
Ap. Sig.	.435	.262	.069	.637

	<b>Effort</b>	<b>Effective</b>	<b>Satisfaction</b>
Chi-Square	.356	1.305	3.081
Df	3	3	3
Asymp. Sig.	.949	.728	.379

(\* p ≤ 0.05)

According to Table 10.23 the H-statistic proves the same results as the one-way analysis of variance.

#### 10.4 PRACTICAL SIGNIFICANCE RE LEADERSHIP DEVELOPMENT

The relationships between the first four (4) questions of the leadership survey and both transactional and transformational were also determined. This was done to determine whether attendance of transformational leadership development programmes in the SAAF had any significant influence on the establishment of a transformational leadership culture in the organisation. The first four questions of the questionnaire are on a nominal scale, while transformational and transactional leadership styles are computed from questions of the MLQ which are on an interval scale. A cross-tabulation was done and Eta, Kappa, Risk, and McNemar were applied. No values for Kappa, Risk, and McNemar could be obtained.

Results of Eta (effect size) were obtained, which are presented in Table 10.24. Effect size boils down to practical significance. It is independent of sample size and can be understood as a large enough effect to be important in practice and is described for differences in means as well as for the relationship in two-way frequency tables (Ellis & Steyn, 2003: 51).

Table 10.24: Transformational leadership and transactional leadership by nominal value: Questions 1 to 4 of the leadership questionnaire.

	Variable	Effect size
Eta: Transformational	Transformational Dependent Question F1 Dependent	0.393 0.740
	Transformational Dependent Question F2 Dependent	0.525 0.550
	Transformational Dependent Question F3 Dependent	0.307 0.354
	Transformational Dependent Question F4 Dependent	0.289 0.346
Eta: Transactional	Transformational Dependent Question F1 Dependent	0.453 0.501
	Transformational Dependent Question F2 Dependent	0.209 0.269
	Transformational Dependent Question F3 Dependent	0.354 0.425

Transformational Dependent	0.570
Question F4 Dependent	0.585

It is important to know whether a relationship between two variables is practically significant. For random samples the statistical significance of the relationship is determined with chi-square tests, "...but one actually wants to know whether the relationship is large enough to be important" (Ellis & Steyn, 2003: 52). Cohen (1988) notes that a relationship with an effect size  $\geq 0.5$  is considered to be practically significant. According to Table 10.24 the Eta values are  $< 0.05$  which is considered as practically insignificant. As regards Transformational Leadership by F1 and Transactional Leadership by F4, it should be taken into consideration that the values of the dependent variables are greater than 0.5, but the Eta values of the two questions F2 (transformational) and F4 (transactional) are larger than the dependent variables. The implication of these findings is that the relationships are not practically significant.

## 10.5 FREQUENCY DISTRIBUTIONS

A frequency distribution is described by Bohrnstedt *et al* (1988: 493) as a table of the outcomes of a variable and the number of times each outcome is observed in a sample. For each of the questionnaires used in this research, the questions relative to each factor were grouped together and the percentages re each response category then given. Thus, for each questionnaire, responses were sorted into the various factors (dimensions). For each item in each dimension response frequencies for each response category are given in percentages.

### 10.5.1 THE SURVEY OF WORK VALUES

The responses (in percentages) on the six work value dimensions of the Survey of Work Values are given in Table 10.25.

Table 10.25: Response distributions – Survey of Work Values.

<b>DIMENSION 1: PRIDE IN WORK</b>				
<b>Strongly disagree</b>	<b>Mildly disagree</b>	<b>Neutral / Not sure</b>	<b>Mildly Agree</b>	<b>Strongly agree</b>
12. One who does a sloppy job at work should feel a little ashamed of oneself.				
6.5	4.3	3.5	13.9	71.7
13. A worker should feel some responsibility to do a decent job, neither or not the supervisor is around.				
1.6	1.4	.8	5.3	91.0
16. There is nothing wrong with doing a poor job at work if one can get away with it.				
4.7	3.9	2.4	7.9	81.1
32. There is nothing as satisfying as doing the best job possible.				
1.4	4.9	4.1	13.2	76.4
36. One who feels no sense of pride in one's work is probably unhappy.				
6.5	8.8	6.9	31.4	46.4
43. Only a fool worries about doing a job well, since it is important only that you do your job well enough not to get fired.				
5.3	3.3	4.5	12.0	74.9
48. One should feel a sense of pride in one's job.				
1.8	1.4	1.2	7.3	88.4
52. The most important thing about a job is liking the work.				
1.8	3.1	4.5	33.2	57.4
53. Doing a good job should mean as much to a worker as a good pay cheque.				
1.4	3.5	3.5	25.9	65.6
<b>DIMENSION 2: JOB INVOLVEMENT</b>				
<b>Strongly disagree</b>	<b>Mildly disagree</b>	<b>Neutral / Not sure</b>	<b>Mildly Agree</b>	<b>Strongly agree</b>



6. Most companies have suggestion boxes for their workers, but I doubt that the companies take these suggestions seriously.				
7.1	14.3	19.1	38.1	21.4

7. A good worker cares about finding ways to improve the job, and when one has an idea, one should pass it onto the supervisor.				
1.8	3.1	1.6	14.9	78.6

Table 10.25: (Continued)

14. One who has an idea about how to improve one's own job should drop a note in the company suggestion box.				
4.7	7.3	8.6	30.6	48.7

17. A good worker is interested in helping a new worker learn the job.				
1.6	1.8	1.6	17.1	78

24. If a worker has a choice between going to the company picnic or staying at home, the worker would probably be better off at home.				
8.3	10.4	15.9	30.8	34.6

25. Even if a worker has a very low-level job in a company, it is still possible for the worker to make suggestions which will affect company policy.				
3.1	3.7	5.1	18.1	69.9

33. Once a week, after the workday is over, a company may have their workers get together in groups for the purpose of discussing possible job changes. A good worker should remain after quitting time to participate in these discussions.				
6.7	12.8	13.0	33.2	34.4

37. If something is wrong with a job, a smart worker will mind his or her own business and let somebody else complain about it.				
4.1	7.9	6.7	26.3	55.0

44. One should do one's own job and forget about such things as company meetings or company activities.				
3.1	6.1	4.9	29.9	56.0

**DIMENSION 3: ACTIVITY PREFERENCE**

Strongly disagree	Mildly disagree	Neutral / Not sure	Mildly Agree	Strongly agree
5. A job which requires the employee to be busy during the day is better than a job which allows a lot of loafing.				
4.9	6.5	4.3	16.7	67.6

9. If a person can get away with it, that person should try to work just a little slower than the boss expects.				
3.5	4.1	5.1	14.7	72.5

20. The best job that a worker can get is one which permits the worker to do almost nothing during the work day.				
2.2	1.6	2.2	13.0	81.1

Table 10.25: (Continued)

27. When an employee can get away with it the employee should take it easy.				
4.5	8.4	10.8	21.0	55.2

29. A worker who takes long rest pauses is probably a poor worker.				
9.6	34.6	15.9	22.4	17.5

39. A person would soon grow tired of loafing on a job and would probably be happier if he or she worked hard.				
4.5	13.4	13.4	29.9	38.9

46. If a person is given a choice between jobs which pay the same money, the person should choose the one which required as little work as possible.				
6.1	9.4	10.2	29.5	44.8

50. A person should try to stay busy all day rather than to find ways to get out of doing work.				
5.9	6.1	6.5	23.2	58.3

54. If a worker keeps himself busy on the job, the working day passes more quickly than when the worker were loafing.				
1.0	1.6	1.6	9.4	86.4

**DIMENSION 4: ATTITUDE TOWARDS EARNINGS**

Strongly disagree	Mildly disagree	Neutral / Not sure	Mildly Agree	Strongly agree
10. A person should hold a second job to bring in extra money if the person can get it.				
10.2	15.1	20.0	31.4	23.2

15. A person should choose the job which pays the most.				
10.6	29.9	15.5	30.5	13.4

21. If I were payed by the hour, I would probably turn down most offers to make extra money by working overtime.				
12.8	17.5	19.4	23.4	26.9

23. A person should take the job which offers the most overtime if the regular pay on the job is about the same.				
19.3	30.8	22.4	18.7	8.8

30. A person should choose one job over another mostly because of the higher wages/pay.				
9.4	27.3	11.0	24.6	17.7

Table 10.25: (Continued)

34. The only good part of most jobs is the pay cheque.				
23.2	32.2	12.0	23.8	8.8

41. When someone is looking for a job, money should not be the most important consideration.				
30.8	34.6	6.3	17.5	10.8

47. A good job is a well paying job.				
15.3	25.7	12.6	27.5	18.9

51. A person should take a job that pays more than some other job even if that person cannot stand other workers on the job.				
31.4	35.4	14.5	13.4	5.3

**DIMENSION 5: SOCIAL STATUS OF THE JOB**

<b>Strongly disagree</b>	<b>Mildly disagree</b>	<b>Neutral / Not sure</b>	<b>Mildly agree</b>	<b>Strongly agree</b>
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1. One of the reasons that I work is to make my family respect me.				
34.8	19.3	9.2	25.9	10.8

2. A person does not deserve respect just because the person has a good job.				
48.9	20.0	6.1	12.4	12.6

3. A job with prestige is not necessarily a better job than one which does not have prestige.				
44.0	28.7	12.0	8.6	6.7

4. My friends would think much of me even if I did not have a good job.				
32.8	34.6	13.6	12.2	6.9

18. Prestige should not be a factor in choosing a job.				
21.2	35.4	15.1	21.2	7.1

26. The person who holds down a good job is the most respected person in the neighbourhood.				
23.0	33.2	13.2	19.6	11.0

38. Having a good job makes a person more worthy of praise from friends and family.				
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12.4	26.1	12.0	33.0	16.5
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45. As far as my friends are concerned, it could not make one difference if I worked regularly or only once in a while.

8.3	11.6	20.4	21.8	37.9
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Table 10.25: (Continued)

49. Even though they make the same amount of money, the person who works in an office has a more impressive job than the person working as a sales clerk.

40.5	26.7	11.4	14.9	6.5
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### DIMENSION 6: UPWARD STRIVING

Strongly disagree	Mildly disagree	Neutral / Not sure	Mildly agree	Strongly agree
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8. Even if a person has a good job, the person should always be looking for a better job.

6.1	24.4	12.8	33.4	23.4
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11. In choosing a job, a person ought to consider chances for advancement as well as other factors.

2.0	2.4	5.7	19.8	70.1
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19. One should always be thinking about pulling oneself up in the world and should work hard with the hope of being promoted to a higher-level job.

1.8	1.2	2.2	21.8	73.1
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22. If a person likes his job, the person should be satisfied with it and should not push for a promotion to another job.

5.9	16.7	9.4	36.9	31.0
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28. The trouble with too many people is that when they find a job in which they are interested, they don't try to get a better job.

6.9	22.2	21.8	33.2	15.9
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31. A worker who turns down a promotion is probably making a mistake.

5.9	22.6	8.6	34.0	28.9
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35. A promotion to a higher level job usually means more worries and should be avoided for that reason.

5.1	6.1	4.5	30.1	54.2
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40. A well paying job that offers little opportunity for advancement is not a good job for me.

6.3	17.5	14.3	33.4	28.5
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42. One is better off if one is satisfied with one's own job and is not concerned about being promoted to another job.				
8.8	22.6	11.8	34.8	22.0

## 10.5.2 THE INTERNAL CONTROL INDEX

The frequency table for the Internal Control Index is presented in Table 10.26.

Table 10.26: Response distributions – Internal Control Index.

<b>Strongly disagree</b>	<b>Mildly disagree</b>	<b>Neutral / Not sure</b>	<b>Mildly Agree</b>	<b>Strongly agree</b>
1. When faced with a problem I try to forget it.				
4.1	4.9	3.1	19.3	68.6
2. I need frequent encouragement from others for me to keep working at a difficult task.				
5.9	14.5	6.5	29.3	43.8
3. I like jobs where I can make decisions and be responsible for my own work.				
1.6	2.0	3.1	19.3	74.1
4. I change my opinion when someone I admire disagrees with me.				
3.9	11.2	9.6	28.9	46.4
5. If I want something I work hard to get it.				
1.2	0.8	2.2	17.7	78.2
6. I prefer to learn the facts about something from someone else rather than have to dig them out for myself.				
7.5	22.4	10.6	33.8	25.7
7. I will accept jobs that require me to supervise others.				
2.8	7.9	8.8	33.2	47.3
8. I have a hard time saying "no" when someone tries to sell me something I don't want.				
6.5	11.4	7.3	26.9	47.9
9. I like to have a say in any decisions made by any group I'm in.				
2.2	5.9	4.7	30.8	56.4
10. I consider the different sides of an issue before making any decisions.				

0.6	0.8	4.1	23.6	70.9
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11. What other people think has a great influence on my behaviour.

12.0	31.0	15.7	23.8	17.5
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12. Whenever something good happens to me I feel it is because I've earned it.

2.9	11.8	8.4	36.0	40.9
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Table 10.26: (Continued)

13. I enjoy being in a position of leadership.

0.6	4.7	7.5	30.6	56.6
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14. I need someone else to praise my work before I am satisfied with what I've done.

8.3	20.2	12.0	31.2	28.3
-----	------	------	------	------

15. I am sure enough of my opinions to try and influence others.

1.4	4.3	11.4	40.9	42.0
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16. When something is going to affect me I learn as much about it as I can.

0.6	2.2	3.1	32.6	61.5
-----	-----	-----	------	------

17. I decide to do things on the spur of the moment.

9.4	30.6	16.1	29.5	14.3
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18. For me, knowing I've done something well is more important than being praised by someone else.

1.8	5.9	8.6	30.5	53.2
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19. I let other people's demands keep me from doing things I want to do.

3.9	17.5	16.7	35.0	26.9
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20. I stick to my opinions when someone disagrees with me.

4.3	20.2	12.2	36.0	27.3
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21. I do what I feel like doing, not what other people think I ought to do.

9.0	24.4	14.3	33.6	18.7
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22. I get discouraged when doing something that takes a long time to achieve results.

7.1	19.4	10.6	33.4	29.5
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23. When part of a group I prefer to let other people make all the decisions.

5.3	9.8	10.6	34.4	39.9
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24. When I have a problem I follow the advice of friends or relatives.

13.6	43.0	15.9	22.2	5.3
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25. I enjoy trying to do difficult tasks more than I enjoy trying to do easy tasks.				
2.0	8.8	14.1	42.0	33.0
26. I prefer situations where I can depend on someone else's ability rather than just my own.				
3.9	14.3	9.8	33.0	38.9

Table 10.26: (Continued)

27. Having someone important tell me I did a good job is more important to me than feeling I've done a good job.				
9.6	22.2	10.0	32.0	26.1
28. When I'm involved in something I try to find out all I can about what is going on even when someone else is in charge.				
1.8	3.5	8.3	38.9	47.5

### 10.5.3 THE VALUE SURVEY MODULE

The frequency distribution of responses (expressed in percentage) re the four dimensions of work-related values in the Value Survey Module, viz Power Distance, Uncertainty Avoidance, Individualism and Masculinity is presented in Table 10.27.

Table 10.27: Response distributions – Value Survey Module.

DIMENSION 1: POWER DISTANCE				
Very Frequently	Frequently	Sometimes	Seldom	Very Seldom
8. How frequently, in your work environment, are subordinates afraid to express disagreement with their superiors?				
11.8	25.9	29.5	24.6	8.3
Manager 1	Manager 2	Manager 3	Manager 4	None
1. For the four types of managers <sup>3</sup> , please mark the <u>one</u> which you would prefer to work under.				
4.9	17.3	37.1	40.7	-
2. To which <u>one</u> of the above managers would you say your own superior most closely corresponds?				
25.1	22.2	26.1	22.2	3.5

<sup>3</sup> For an explanation of the four types of managers, see Appendix A, Section E.

Table 10.27: (Continued)

<b>DIMENSION 2: UNCERTAINTY AVOIDANCE</b>				
<b>Strongly agree</b>	<b>Agree</b>	<b>Undecided</b>	<b>Disagree</b>	<b>Strongly disagree</b>
4. A company or organisation's rules should not be broken - even when the employee thinks it is in the organisation's best interests.				
17.7	34.2	9.4	31.6	7.1
<b>Two Years</b>	<b>Two to Five years</b>	<b>&gt; 5 years</b>	<b>Until retirement</b>	<b>-</b>
9. How long do you think you will continue working for this organisation?				
15.3	14.3	25.9	44.4	-
<b>Always</b>	<b>Usually</b>	<b>Sometimes</b>	<b>Seldom</b>	<b>Never</b>
3. How often do you feel nervous or tense at work?				
2.6	11.4	41.3	34.2	10.6
<b>DIMENSION 3: INDIVIDUALISM</b>				
<b>Utmost importance</b>	<b>Very important</b>	<b>Moderate importance</b>	<b>Little importance</b>	<b>No importance</b>
15. How important would it be to have sufficient time left for your personal or family life?				
46.0	43.4	7.9	2.0	0.8
21. How important would it be to have considerable freedom to adopt your own approach to the job?				
27.5	50.5	17.7	3.5	0.8
16. How important would it be to have challenging tasks to do, from which you can get a personal sense of accomplishment?				
43.0	45.0	8.4	2.4	1.2
18. How important would it be to have good physical working conditions (good ventilation and lighting, adequate work space, etc.)?				



50.5	36.5	10.2	1.4	1.4
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Table 10.27: (Continued)

<b>DIMENSION 4: MASCULINITY</b>				
<b>Utmost importance</b>	<b>Very important</b>	<b>Moderate importance</b>	<b>Little importance</b>	<b>No importance</b>
19. How important would it be to have a good working relationship with your direct superior?				
56.4	38.3	2.8	1.6	1.0
22. How important would it be to work with people who cooperate well with one another?				
45.6	43.2	8.1	2.0	1.2
27. How important would it be to live in an area desirable to you and your family?				
50.1	39.1	8.1	1.4	1.4
20. How important would it be to have security of employment?				
62.1	29.9	4.7	2.6	0.8
16. How important would it be to have challenging tasks to do, from which you can get a personal sense of accomplishment?				
43.0	45.0	8.4	2.4	1.2
28. How important would it be to have an opportunity for advancement to higher level jobs?				
47.9	42.0	6.7	2.4	1.0
25. How important would it be to have an opportunity for high earnings?				
38.3	42.8	13.8	3.1	2.0

#### 10.5.4 THE MULTIFACTOR LEADERSHIP QUESTIONNAIRE

The frequency distribution of responses re the leadership dimensions in the MLQ is presented in Table 10.28. This includes the five dimensions of transformational leadership, the three dimensions of transactional leadership, Laissez Faire as well as the three outcomes.

Table 10.28: Response distributions – MLQ.

#### **DIMENSION 1: IDEALISED INFLUENCE (ATTRIBUTES)**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
10. I instil pride in others for being associated with me				
2.8	4.3	29.5	45.2	18.3
18. I go beyond self-interest for the good of the group.				
1.4	5.1	21.6	46.2	25.7

Table 10.28: (Continued)

21. I act in ways that build others' respect for me.				
1.8	1.2	13.9	49.7	33.4
25. I display a sense of power and confidence.				
0.8	4.5	16.7	52.7	25.3

**DIMENSION 2: IDEALISED INFLUENCE (BEHAVIOURS)**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
6. I talk about my most important values and beliefs.				
2.8	10.6	25.0	43.0	18.7
14. I specify the importance of having a strong sense of purpose.				
0.8	3.5	15.1	49.3	21.2
23. I consider the moral and ethical consequences of decisions.				
0.2	2.6	16.1	46.2	35.0
34. I emphasise the importance of having a collective sense of mission.				
0.8	3.1	23.8	49.5	22.8

**DIMENSION 3: INSPIRATIONAL MOTIVATION**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
9. I talk optimistically about the future.				
1.4	8.4	24.6	43.4	22.2
13. I talk enthusiastically about what needs to be accomplished.				
1.4	4.3	13.0	51.9	29.5
26. I articulate a compelling vision for the future.				
2.0	5.9	30.6	43.8	17.7
36. I express confidence that goals will be achieved.				
0.2	1.4	10.0	49.9	38.5

**DIMENSION 4: INTELLECTUAL STIMULATION**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
2. I re-examine critical assumptions to question whether they are appropriate.				
1.8	4.1	22.4	50.9	20.8

8. I seek differing perspectives when solving problems.				
2.9	3.5	18.7	47.5	27.3

Table 10.28: (Continued)

30. I get others to look at problems from many different angles.				
1.4	2.6	14.9	52.3	28.9

32. I suggest new ways of looking at how to complete assignments.				
0.6	2.4	20.2	47.7	29.1

**DIMENSION 5: INDIVIDUALISED CONSIDERATION**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
15. I spend time teaching and coaching.				
2.2	7.5	24.8	35.0	30.6

19. I treat others as individuals rather than just as a member of the group.				
5.7	5.1	7.9	37.5	43.8

29. I consider an individual as having different needs, abilities, and aspirations from others.				
58.7	20.2	12.4	5.5	3.1

31. I help others to develop their strengths.				
0.8	3.3	16.7	47.0	32.2

**DIMENSION 6: CONSTRUCTIVE TRANSACTION**

Not at all	Once in A while	Sometimes	Fairly Often	Frequently if not always
1. I provide others with assistance in exchange for their efforts.				
7.3	6.9	18.1	43.6	24.2

11. I discuss in specific terms who is responsible for achieving performance targets.				
2.0	4.1	25.3	47.3	21.2

16. I make clear what one can expect to receive when performance goals are achieved.				
3.1	4.1	25.0	46.4	21.4

35. I express satisfaction when others meet expectations.				
1.2	0.6	9.4	37.1	51.7

**DIMENSION 7: MANAGEMENT-BY-EXCEPTION (ACTIVE)**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
4. I focus attention on irregularities, mistakes, exceptions and deviations from standards.				
7.3	11.2	22.4	38.3	20.8

22. I concentrate my full attention on dealing with mistakes, complaints, and failures.				
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5.1	11.0	21.0	42.0	20.8
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Table 10.28: (Continued)

24. I keep track of all mistakes.				
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9.2	18.9	26.3	30.3	15.3
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27. I direct my attention toward failures to meet standards.				
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10.6	12.6	28.9	32.4	15.5
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**DIMENSION 8: MANAGEMENT-BY-EXCEPTION (PASSIVE)**

Not at all	Once in A while	Sometimes	Fairly often	Frequently if not always
3. I fail to interfere until problems become serious.				
40.7	30.8	17.5	7.3	3.7

12. I wait for things to go wrong before taking action.				
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67.0	22.6	5.7	2.9	1.8
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17. I show that I am a firm believer in "If it ain't broke, don't fix it".				
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25.3	12.2	26.3	21.8	14.3
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20. I demonstrate that problems must become chronic before I take action.				
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58.7	20.2	12.4	5.5	3.1
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**DIMENSION 9: LAISSEZ FAIRE**

Not at all	Once in A while	Sometimes	Fairly Often	Frequently if not always
5. I avoid getting involved when important issues arise.				
62.3	19.8	10.4	4.1	3.3

7. I am absent when needed.				
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61.7	28.5	5.5	2.2	2.2
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28. I avoid making decisions.				
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59.5	23.4	9.8	4.1	3.1
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33. I delay responding to urgent questions.				
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52.5	27.3	12.6	4.5	3.1
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Table 10.28: (Continued)

<b>DIMENSION 10: EXTRA EFFORT</b>				
<b>Not at all</b>	<b>Once in A while</b>	<b>Sometimes</b>	<b>Fairly often</b>	<b>Frequently if not always</b>
39. I get others to do more than they are expected to do.				
3.7	7.7	26.7	43.2	18.7
42. I heighten others' desire to succeed.				
2.6	2.0	18.7	49.5	27.3
44. I increase others' willingness to try harder.				
0.0	1.8	15.1	50.3	32.8
<b>DIMENSION 11: EFFECTIVENESS</b>				
<b>Not at all</b>	<b>Once in A while</b>	<b>Sometimes</b>	<b>Fairly often</b>	<b>Frequently if not always</b>
37. I am effective in meeting others' job-related needs.				
0.8	1.6	18.5	49.7	29.5
40. I am effective in representing others to higher authority.				
0.2	2.6	20.4	47.5	29.3
43. I am effective in meeting organisational requirements.				
0.6	0.4	7.1	50.1	41.8
<b>DIMENSION 12: SATISFACTION</b>				
<b>Not at all</b>	<b>Once in A while</b>	<b>Sometimes</b>	<b>Fairly often</b>	<b>Frequently if not always</b>
38. I use methods of leadership that are satisfying.				
0.4	1.2	17.3	50.9	30.3
41. I work with others in a satisfactory way.				
1.0	0.4	6.3	45.8	46.6
45. I lead a group that is effective.				
1.6	1.6	8.3	41.7	47.0

## 10.6 DESCRIPTIVE STATISTICS

In order to summarise the data descriptive statistics were calculated. Descriptive statistics consist of numbers that describe a set of observations. The descriptive statistics for the Survey of Work Values, the Value Survey Module, the Internal Control Index and the Multifactor Leadership Questionnaire are presented in Table 10.29.

Table 10.29: Descriptive statistics – questionnaire factors.

	N	Range	Minimum	Maximum	Mean	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Pride	509	20.00	25.00	45.00	40.5933	.18221
Involvement	509	25.00	20.00	45.00	37.4401	.17067
Activity	509	25.00	20.00	45.00	37.5442	.19587
Earnings	509	33.00	10.00	43.00	26.1316	.24597
Status	509	31.00	10.00	41.00	23.3438	.22973
Progress	509	24.00	21.00	45.00	34.3870	.18426
Internality	509	60.00	78.00	138.00	109.4872	.49954
PD	506	27.00	3.00	13.00	8.6640	.10007
UA	509	11.00	3.00	14.00	9.1454	.08762
Individualism	509	13.00	4.00	17.00	7.0806	.09793
Masculinity	509	26.00	7.00	33.00	11.6503	.16942
Influence A	509	12.00	4.00	16.00	11.7073	.10319
Influence B	509	12.00	4.00	16.00	11.7446	.10258
Motivation	509	12.00	4.00	16.00	11.7485	.10995
Stimulation	509	12.00	4.00	16.00	11.8468	.10082
Consideration	509	14.00	2.00	16.00	12.2849	.11743
Constructive	509	14.00	2.00	16.00	11.6857	.10623
MBE – Active	509	16.00	.00	16.00	9.6994	.14755
MBE – Passive	509	14.00	.00	14.00	4.1415	.12444
Laissez Faire	509	14.00	.00	14.00	2.6758	.11432
Extra Effort	509	10.00	2.00	12.00	8.7662	.08859
Effectiveness	509	10.00	2.00	12.00	9.4086	.07720
Satisfaction	509	9.00	3.00	12.00	9.7682	.07764

Table 10.29: (Continued)

	Std.	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Pride	4.11087	16.899	-1.227	.108	1.402	.216
Involvement	3.85041	14.826	-.530	.108	.542	.216
Activity	4.41906	19.528	-.652	.108	.435	.216
Earnings	5.54938	30.796	-.002	.108	.088	.216
Status	5.18303	26.864	.085	.108	-.113	.216
Progress	4.15704	17.281	-.370	.108	.034	.216
Internality	11.27005	127.014	-.129	.108	-.409	.216
PD	2.25102	5.067	1.693	.109	14.725	.217
UA	1.97686	3.908	-.178	.108	-.058	.216
Individualism	2.20937	4.881	1.101	.108	2.421	.216
Masculinity	3.82227	14.610	1.621	.108	4.960	.216
Influence A	2.32810	5.420	-.327	.108	-.270	.216
Influence B	2.31428	5.356	-.414	.108	.015	.216
Motivation	2.48056	6.153	-.480	.108	.032	.216
Stimulation	2.27449	5.173	-.348	.108	.115	.216
Consideration	2.64935	7.019	-.734	.108	.409	.216
Constructive	2.39656	5.744	-.546	.108	.619	.216
MBE – Active	3.32877	11.081	-.382	.108	-.141	.216
MBE – Passive	2.80741	7.882	.502	.108	-.017	.216
Laissez Faire	2.57926	6.653	.981	.108	.736	.216
Extra Effort	1.99861	3.994	-.397	.108	-.048	.216
Effectiveness	1.74169	3.033	-.568	.108	.467	.216
Satisfaction	1.75163	3.068	-.730	.108	.648	.216

An analysis of the contents of Table 10.29 reveals that scores are not normally distributed. Except for Social Status, Power Distance, Individualism, Masculinity, MBE-passive and Laissez Faire, which are positively skewed, the scores on the other dimensions are all negatively skewed. Analysis of the

values of the kurtosis reveals that, for Pride in Work, Involvement, Activity Preference, Power Distance, Individualism, Masculinity, Consideration, Constructive Transaction, Laissez Faire, Effectiveness, and Satisfaction, the distribution is more peaked than for a normal distribution (leptokurtic; value > 0.263). As regards the other dimensions, the distribution is platykurtic (value < 0.263).

The standard error of the mean is described as the standard deviation of the sampling distribution of means. It is an index of the extent to which the sample means vary around the population means (Bohrnstedt *et al*, 1988: 500). The values of the standard error of the mean are quite high for all the factors, which implies that the observed means of the sample might not be good indices of the population means and that the generalisation of the findings of the study should be made with care.

## 10.7 MULTIPLE REGRESSION

To determine the influence of two or more variables on the dependent variable, multiple regression analysis can be used. This type of analysis may be used to analyse the influence of a variety of factors such as biographical variables on, for example, leadership behaviour. Coakes & Steed, 1996: 129) explain that, in multiple regression analysis the calculation of the relative weight of each predictor in the regression model relies on a single correlation between the predictor and the criterion as well as on the inter-correlations between predictors. Regression analysis refers to a set of statistical techniques for assessing the relationships between a dependent variable and several independent variables. While correlation is a measure of the association between a dependent variable and independent variable(s), regression is used when prediction is intended (Tabachnick *et al*, 1989: 123). Regression in this case was done by means of the stepwise method.

### 10.7.1 THE MLQ

In this analysis, firstly, the Multifactor Leadership Questionnaire (MLQ) served as the dependent variable and the eight biographical variables, viz gender, age, home language, religion, educational qualification, occupational level, population group and work experience, served as the independent variables. A stepwise linear regression<sup>4</sup> was done, the results of which are presented in Tables 11.30 to 11.32.

Table 10.30: Regression – MLQ: Descriptive Statistics.

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<sup>4</sup> Stepwise linear multiple regression was decided on, as the stepwise model will avoid the problem of two related variables cancelling out each other.



	Mean	Std Deviation	N
Leadership	87.5081	12.61312	496
Religion	2.8548	1.36593	496
Educational Qualification	3.1673	.58103	496
Age	3.3246	.64313	496
Home Language	1.9960	.55776	496
Occupational Level	2.16	1.028	496
Population Group	2.32	.684	496
Work Experience	3.19	1.366	496

The N = 496 in Table 10.29 as multiple regression uses only respondents who have complete data. Leadership is the only variable with a large deviation from the mean. The various correlations are presented in Table 10.31.

Table 10.31: Multiple regression-MLQ.

		Leadership	Religion	Ed. Qual	Age
Pearson Correlation	Leadership	1.000	.020	.044	-.017
	Religion	.020	1.000	.033	.045
	Ed. Qualification	.044	.033	1.000	-.010
	Age	-.017	.045	-.010	1.000
	Home language	.127	.087	.133	.021
	Rank	-.046	.007	.384	.281
	Population group	.028	.052	-.195	-.047
	Work experience	.030	-.018	-.013	.752
Sig. (1-tailed)	Leadership	.	.327	.167	.356
	Religion	.327	.	.230	.161
	Ed. Qualification	.167	.230	.	.408
	Age	.356	.161	.408	.
	Home language	.002*	.027*	.002*	.324
	Rank	.153	.441	.000*	.000*
	Population group	.267	.125	.000*	.147
	Work experience	.256	.341	.387	.000
N	Leadership	496	496	496	496
	Religion	496	496	496	496
	Ed. Qualification	496	496	496	496
	Age	496	496	496	496
	Home language	496	496	496	496
	Rank	496	496	496	496
	Population group	496	496	496	496

	Work experience	496	496	496	496
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Table 10.31: (Continued)

		Language	Rank	Pop. Group	Work Exp.
Pearson Correlation	Leadership	.127	-.046	.028	.030
	Religion	.087	.007	.052	-.018
	Ed. Qualification	.133	.384	-.195	-.013
	Age	.021	.281	-.047	.752
	Home language	1.000	.061	-.410	.234
	Rank	.061	1.000	-.191	.287
	Population group	-.410	-.191	1.000	-.220
	Work experience	.234	.287	-.220	1.000
Sig. (1-tailed)	Leadership	.002*	.153	.267	.256
	Religion	.027*	.441	.125	.341
	Ed. Qualification	.002*	.000*	.000*	.387
	Age	.324	.000*	.147	.000*
	Home language	.	.087	.000*	.000*
	Rank	.087	.	.000*	.000*
	Population group	.000*	.000*	.	.000*
	Work experience	.000*	.000*	.000*	.
N	Leadership	496	496	496	496
	Religion	496	496	496	496
	Ed. Qualification	496	496	496	496
	Age	496	496	496	496
	Home language	496	496	496	496
	Rank	496	496	496	496
	Population group	496	496	496	496
	Work experience	496	496	496	496
(* p ≤ 0.05)					

According to Table 10.31 language correlates significantly with leadership, religion, education, population group and work experience, and occupational level with education, age, population group and work experience. Educational qualification correlates significantly with home language, occupational level (rank), and population group. Age also has a significant relationship with work experience. Lastly, work experience has a significant relationship with population group.

Table 10.32: Multiple regression - variables entered/removed.

Model	Variables Entered	Variables Removed	Method
1	Home language	.	Stepwise (Criteria: Probability –of- F-to-enter ≤ .050. Probability –of- F-to-remove ≥ 100).
2	Population group	.	Stepwise (Criteria: Probability –of- F-to-enter ≤ .050. Probability –of- F-to-remove ≥ 100).

It is obvious from Table 10.32 that only two variables, viz home language and population group entered the equation. No variables were removed.

A model summary for the MLQ was drawn in which each model represents a “step” in which a variable is added (or deleted) from the prediction equation if it makes a significant additional contribution to the prediction of the variables already entered. The  $R^2$  for each step after the first indicates a prediction from a combination of variables. The model summary is presented in Table 10.33.

Table 10.33: Multiple Regression model summary – MLQ.

		Model	
		1	2
R		.127	.154
R Square		.016	.024
Adjusted R Square		.014	.020

	Std. Error of the Estimate	12.52376	12.48734
Change Statistics	R Square Change	.016	.008
	F Change	8.089	3.886
	df1	1	1
	df2	494	493
	Sig. F Change	.005	.049
	Durbin-Watson		1.904

The model summary in Table 10.33 indicates that the regression model has an R of 0.154 with an  $R^2$  of 0.0237 (0.024). The  $R^2$  tends to be an optimistic estimate of how well the model fits the population. The model, however, does not fit the population in this case as well as it fits the sample from which it is derived. The statistic “adjusted  $R^2$ ” in the table attempts to correct  $R^2$  to more closely reflect the goodness of fit of the model in the total population. The total observed variable is the dependent variable subdivided into two components, viz Regression and Residual. According to Norusis (1990) the analysis of variance includes two sums of squares under the heading “sum of squares”. The mean square for each entry is determined from the sum of squares divided by the degrees of freedom (df). If the regression assumptions are met, the ratio of the mean square regression to the mean square residual is distributed as an F-static with  $N = p - 1$  degrees of freedom (Norusis, 1990: 253). The F-statistic serves to test how well the regression model fits the research data. If the probability associated with the F static is small, the hypothesis that  $R^2 = 0$  should be rejected. In this case  $F^{pp}$ -change = 3,886 with F-change being significant (Sig. F Change = 0.049, p being < 0.05).

Table 10.34: Multiple regression – ANOVA.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1268.756	1	1268.756	8.089	.005
Residual	77481.211	494	156.845		
Total	78749.968	495			
2 Regression	1874.650	2	937.325	6.011	.003
Residual	76875.318	493	155.934		
Total	78749.968	495			

According to Table 10.34 the small probability (Sig) of ANOVA (F) indicates that one or more of the independent variables is a statistically significant predictor. Significant predictor variables of the MLQ using stepwise multiple regression are presented in Table 10.35.

Table 10.35: Multiple regression – Coefficients.

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std Error	Beta		
1 (Constant)	81.779	2.091		39.103	.000
Language	2.870	1.009	.127	2.844	.005
2 (Constant)	75.891	3.643		20.833	.000
Language	3.761	1.103	.166	3.410	.001
Pop. group	1.773	.899	.096	1.971	.049

(\* p = 0.05)

It is evident from Table 10.35 that, apart from the constant, only two independent variables make the regression:  $MLQ = \beta c + \text{Language and Population Group}$ .

## 10.7.2 THE LEADERSHIP OUTCOMES

Leadership outcomes<sup>5</sup> were used as dependent variables with transformational leadership and transactional leadership preferences or styles as the independent variables. Transformational leadership consists of the dimensions Idealised Influence (both attributes and behaviours), Inspirational Motivation, Intellectual Stimulation and Individualised Consideration. Transactional leadership refers to Management-by-exception (both active and passive forms) and Constructive Transaction. Both transformational and transactional leadership form part of the Full Range leadership model as it was discussed in Chapter 5.

The Beta-coefficients are presented in Table 10.36.

<sup>5</sup> The variable "outcomes" comprises the dimensions Extra Effort, Effectiveness and Satisfaction.

Table 10.36: Multiple regression – Beta coefficients.

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std Error	Beta		
1 (Constant)	5.888	.954		6.171	.000
Transform.	.361	.016	.735	23.068	.000*
Transact.	.024	.028	.027	.845	.398
(* p ≤ 0.05)					

The table indicates the standardised beta coefficients. As is evident, only transformational leadership contributes significantly to the prediction of the outcomes as described.

Bravais-Pearson product-moment correlation was conducted to determine any significant correlations between the three variables “outcome”, “transformational leadership” and “transactional leadership”. The results appear in Table 10.37.

Table 10.37: Bravais-Pearson product moment correlation.

		OUTCOMES	Transform	Transact
Pearson Correlation	OUTCOMES	1.000	.745	.298
	Transform	.745	1.000	.368
	Transact	.298	.368	1.000
Sig. (1-tailed)	OUTCOMES	.	.000	.000
	Transform	.000	.	.000
	Transact	.000	.000	.
N	OUTCOMES	509	509	509
	Transform	509	509	509
	Transact	509	509	509

According to Table 10.37 there is a positive high and significant correlation between the leadership outcomes (extra effort, effectiveness and satisfaction) and transformational leadership ( $r = 0.745$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ). The association between the outcomes and transactional leadership, although positive and significant, is quite low ( $r = 0.298$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ). The correlation between the two predictors is positive and significant, but low ( $r = 0.368$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ).

The variables entered/removed in the multiple regression are presented in Table 10.38.

Table 10.38: Multiple regression – variables entered/removed.

Model	Variables Entered	Variables Removed	Method
1	Transactional Transformational	.	Enter

Table 10.38 shows that all the requested independent variables (predictors) are entered. The model summary is presented in Table 10.39.

Table 10.39: Multiple regression – variables entered/removed.

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.746	.556	.554	3.18169

As can be seen in Table 10.39, the multiple regression coefficient equals 0.766 with  $R^2 = 0.556$ . This implies that 55,6% of the variance in the criterium is predicted by the independent variable. (The  $R^2$  is a measure of the goodness of fit of a particular linear model and is sometimes called the coefficient of determination. Should all the observations fall on the regression line  $R^2$  would be 1 (Smit, 1991: 59)). An  $R^2$  of zero indicates that there is no linear relationship between the criterium and the predictors. The statistic adjusted  $R^2$  attempts to correct  $R^2$  to more closely reflect the goodness of fit (Norusis, 1990: 251).

The analysis of variance is presented in Table 10.40.

Table 10.40: Multiple regression – ANOVA.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	6409.039	2	3204.520	316.554	.000
Residual	5122.308	506	10.123		
Total	11531.348	508			

As is obvious from Table 10.40, two sums of squares are displayed, viz the residual sum of squares and the regression sum of squares, the ratio between

them being distributed as F. F serves to test how well the regression model fits the data. The probability associated with the F-statistic ( $F = 316,554$ ) is small ( $p = 0.000$ ;  $p$  being  $< 0.05$ ) which implies the rejection of the hypothesis of  $R^2_{pop} = 0$ .

Table 10.41 provides important statistics for the variable transactional leadership, which is excluded from the prediction equation.

Table 10.41: Multiple regression – ANOVA.

Model	Beta In	T	Sig.	Partial Correlation
1 Transact.	.027	.845	.398	.038

According to Table 10.41 the transactional style significance level is greater than 0.05 ( $p = 0.398$ ). The low partial correlation coefficient, the correlation between the independent variable and the dependent variable when the linear effects of the other independent variable(s) have been removed, indicates a poor relationship between transactional leadership and outcomes.

### 10.7.3 TRANSFORMATIONAL LEADERSHIP

The correlation between transformational leadership, internality and the other value-related dimensions in the study was also determined through a multiple regression analysis. The results of the multiple regression with transformational leadership as the independent variable are presented in Tables 11.42 to 11.47. The Bravais-Pearson Product-Moment correlations between transformational leadership, internality, the dimensions of the Survey of Work Values and the dimensions of the Value Survey Module are listed in Table 10.42.

Table 10.42: Multiple regression for transformational leadership: Bravais- Pearson product-moment correlations.

		Transform	Pride	Involve	Activity	Reward
Pearson Correlation	Transform	1.000	.253	.382	.259	-.082
	Pride	.253	1.000	.437	.512	-.057
	Involve	.382	.437	1.000	.443	-.148
	Activity	.259	.512	.443	1.000	-.167
	Earnings	-.082	-.166	-.148	-.167	1.000
	Status	-.069	.254	-.068	-.172	.265



	Progress	.203	.422	.217	.249	.114
	Internality	.399	.029	.410	.442	-.110
	PD	.079	.104	.018	.106	-.058
	UA	.046	-.326	.083	.074	-.139
	Indiv	-.281	-.320	-.263	-.262	.102
	Masc	-.261		-.225	-.259	-.023

Table 10.42: (Continued)

Sig. (1-tailed)	Transform	.	.000	.000	.000	.033
	Pride	.000	.	.000	.000	.100
	Involve	.000	.000	.	.000	.000
	Activity	.000	.000	.000	.	.000
	Earnings	.033	.100	.000	.000	.
	Status	.060	.000	.062	.000	.000
	Progress	.000	.000	.000	.000	.005
	Internality	.000	.000	.000	.000	.006
	PD	.038	.260	.341	.009	.096
	UA	.152	.010	.032	.049	.001
	Indiv	.000	.000	.000	.000	.011
	Masc	.000	.000	.000	.000	.303

		Status	Progress	Internality	PD	UA
Pearson Correlation	Transform	-.069	.203	.399	.079	.046
	Pride	-.166	.254	.422	.029	.....104
	Involve	-.068	.217	.410	.018	.083
	Activity	-.172	.249	.442	.106	.074
	Earnings	.265	.114	-.110	-.058	-.139
	Status	1.000	-.016	-.251	-.004	-.002
	Progress	-.016	1.000	.291	.022	.016
	Internality	-.251	.291	1.000	.054	.051
	PD	-.004	.022	.054	1.000	.146
	UA	-.002	.016	.051	.146	1.000
Sig. (1-tailed)	Indiv	.209	-.173	-.373	-.014	-.057
	Masc	.158	-.242	-.322	-.028	-.016
	Transform	.060	.000	.000	.038	.152
	Pride	.000	.000	.000	.260	.010
	Involve	.062	.000	.000	.341	.032
	Activity	.000	.000	.000	.009	.049
	Earnings	.000	.005	.006	.096	.001
	Status	.	.363	.000	.462	.479
Progress	.363	.	.000	.314	.358	
Internality	.000	.000	.	.111	.124	

	PD	.462	.314	.111	.	.000
	UA	.479	.358	.124	.000	.
	Indiv	.000	.000	.000	.378	.098
	Masc	.000	.000	.000	.264	.358

Table 10.42: (Continued)

		Indiv	Masc
Pearson Correlation	Transform	-.281	-.261
	Pride	-.326	-.320
	Involve	-.263	-.225
	Activity	-.262	-.259
	Earnings	.102	-.023
	Status	.209	.158
	Progress	-.173	.242
	Internality	-.373	-.322
	PD	-.014	-.028
	UA	-.057	-.016
	Indiv	1.000	.764
	Masc	.764	1.000
Sig. (1-tailed)	Transform	.000	.000
	Pride	.000	.000
	Involve	.000	.000
	Activity	.000	.000
	Earnings	.011	.303
	Status	.000	.000
	Progress	.000	.000
	Internality	.000	.000
	PD	.378	.264
	UA	.098	.358
	Indiv	.	.000
	Masc	.000	.

According to Table 13.42 transformational leadership has low but significant relationships with Pride in Work ( $r = 0.253$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ), Involvement in the Job ( $r = 0.382$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ), Activity Preference ( $r = 0.259$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ) and Upward Striving (or Progress) ( $r = 0.203$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ). There is a negative but significant relationship between Reward and transformational leadership ( $r = -0.082$ ;  $p = 0.033$ ;  $p$  being  $< 0.05$ ). There is no significant association between

the criterium and Social Status of the Job. As regards the four dimensions of the Value Survey Module, transformational leadership has low, significant, positive correlations with Power Distance ( $r = 0.079$ ,  $p = 0.038$ ;  $p$  being  $< 0.05$ ), but correlates negatively and significantly with Individualism ( $r = -0.281$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ) and Masculinity ( $r = -0.261$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ). Transformational leadership correlates insignificantly with Uncertainty Avoidance ( $r = 0.046$ ;  $p = 0.152$ ;  $p$  being  $< 0.05$ ). There is also a low, positive and significant correlation between Internality and transformational leadership ( $r = 0.399$ ;  $p = 0.000$ ;  $p$  being  $< 0.05$ ). The other correlation coefficients were already discussed under the heading Statistics of Association. The variables entered/removed are presented in Table 10.43.

Table 10.43: Multiple regression – variables entered/ removed: transformational leadership.

Model	Variables Entered	Variables Removed	Method
1	Internality	.	Stepwise (Criteria: Probability –of- F- to-enter $\leq .050$ . Probability –of- F- to-remove $\geq 100$ ).
2	Involvement	.	Stepwise (Criteria: Probability –of- F- to-enter $\leq .050$ . Probability –of- F- to-remove $\geq 100$ ).
3	Masculinity	.	Stepwise (Criteria: Probability –of- F- to-enter $\leq .050$ . Probability –of- F- to-remove $\geq 100$ ).

It is clear from Table 10.43 that only three independent variables entered the equation, viz Internality, Job Involvement and Masculinity. The model summary is displayed in Table 10.44.

Table 10.44: Multiple regression model summary – transformational leadership.

		Model		
		1	2	3
Change Statistics	R	.399	.465	.479
	R Square	.159	.216	.230
	Adjusted R Square	.157	.213	.225
	Std. Error of the Estimate	8.90874	8.60827	8.54363
	R Square Change	.159	.057	.013
	F Change	95.280	36.798	8.641
	df1	1	1	1
	df2	504	503	502
	Sig. F Change	.000	0.000	.003
	Durbin-Watson			1.921

As is evident from Table 10.44, the multiple R at the third step<sup>6</sup> equals 0.479 and the  $R^2 = 0.230$ . This implies that the three independent variables predict only 23% of the variance in the criterium. The adjusted  $R^2$  of 0.025 does not succeed to improve the goodness of fit. These two small values indicate that there is not much of a linear relationship between criterium (transformational leadership) and predictors. The  $R^2$ -Change of 0.057 at the second step is the change in  $R^2$  when “Involvement” is added. The  $R^2$  for Internality alone is 0.159. With Masculinity added to the equation at the third step, the  $R^2$ -Change value is displayed as 0.013. Under the hypothesis that the true change is zero, the significance of the value labelled F-Change is small, and the hypothesis that  $R^2 = 0$  is rejected. The Durban Watson statistic is a test used for sequential correlation of adjacent error terms. Error terms refer to the

<sup>6</sup> At the third step all three independent variables entered are in the model.

difference between an observed score and a score that is predicted by the model. The differences between successive residuals tend to be small in cases where error terms are positively correlated and are large in cases where the error terms are negatively correlated. Therefore, small values of D indicate positive correlations, while large values of D indicate negative correlations (Neter, Wasserman & Kutner, 1985; Kutner Norusis, 1990).

The analysis of variance for transformational leadership is presented in Table 10.45.

Table 10.45: Multiple regression (transformational leadership) – ANOVA.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7561.946	1	7561.946	95.280	.000
	Residual	40000.309	504	79.366		
	Total	47562.255	505			
2	Regression	10288.755	2	5144.377	69.423	.000
	Residual	37273.500	503	74.102		
	Total	47562.255	505			
3	Regression	10919.459	3	3639.820	49.865	.000
	Residual	36642.796	502	72.994		
	Total	47562.255	505			

The total variability in the dependent variable, according to Table 10.45, is subdivided into two components, viz regression (10919,459) and the residual (36642,796). It should be noted that, as the value of regression increases from step 1 to step 3, the value of the residual has just the opposite effect, decreasing from step 1 to step 3. Two sum of squares are displayed, viz the mean square of regression and the mean square residual. The ratio between them, F, serves to test how well the regression model fits the data. As the probability level associated with the F-statistic is quite small (F = 49,865; p = 0.000; p being < 0.05), the hypothesis of  $R^2_{pop} = 0$  has to be rejected.

The standardised and unstandardised coefficients with t and probability levels are presented in Table 10.46.

Table 10.46: Multiple regression (transformational leadership) – Coefficients.

Model	Unstandardised Coeff.		Standardised Coeff.	T	Sig.
	B	Std Error	Beta		

1	(Constant)	21.849	3.863		5.656	.000
	Internality	.343	.035	.399	9.761	.000
2	(Constant)	7.246	4.442		1.631	.103
	Internality	.250	.037	.291	6.726	.000
	Involvement	.660	.109	.263	6.066	.000
3	(Constant)	15.329	5.196		2.950	.003
	Internality	.221	.038	.257	5.789	.000
	Involvement	.626	.109	.249	5.758	.000
	Masculinity	-.310	.106	-.122	-2.939	.003

Table 10.46 indicates all three predictors to contribute significantly to the transformational leadership variable. The Betas (the standardised regression coefficients) as stated earlier, are contingent on each other (the different independent variables in the equation) and do not in any absolute sense reflect the importance of the various independent variables (Norusis, 1990: 272).

The different variables excluded from the equation are presented in Table 10.47.

Table 10.47: Multiple regression (transformational leadership) – variables excluded.

Model		Beta In	T	Sig.	Partial Correlation
1	Pride	.103	2.297	.022	.102
	Involvement	.263	6.066	.000	.261
	Activity	.103	2.264	.024	.100
	Earnings	-.038	-.936	.350	-.042
	Social Status	.033	.786	.432	.035
	Upward Striving	.095	2.240	.026	.099
	PD	.057	1.406	.160	.063
	UA	.025	.619	.536	.028
	Individualism	-.154	-3.530	.000	-.155
	Masculinity	-.148	-3.474	.001	-.153
2	Pride	.021	.455	.649	.020
	Activity	.019	.415	.678	.019
	Earnings	-.011	-.284	.776	-.013

Social Status	.023	.575	.566	.026
Upward Striving	.068	1.642	.101	.073
PD	.058	1.482	.139	.066
UA	.009	.231	.818	.010
Individualism	-.122	-2.870	.004	-.127
Masculinity	-.122	-2.939	.003	-.130

Table 10.47: (Continued)

3	Pride	-.005	-.104	.917	-.005
	Activity	.004	.096	.923	.004
	Earnings	-.020	-.509	.611	-.023
	Social Status	.034	.843	.400	.038
	Upward Striving	.051	1.217	.224	.054
	PD	.057	1.458	.145	.065
	UA	.010	.255	.799	.011
	Individualism	-.066	-1.063	.288	-.047

According to Table 10.47 the excluded variables are insignificant ( $p$  being  $> 0.05$ ). The values of Beta In indicate the standardised regression coefficient that would result if the variable would have been entered into the equation at the next step. As is obvious from the above table, the standardised regression would have been low and insignificant in all cases, and also negative in the case of Pride in Work, Attitude toward Earnings and Individualism. The partial correlation (being low) and, as regards the already mentioned three independent variables (with the dependent variable), adjust for the variables in the equation.

#### 10.7.4 TRANSACTIONAL LEADERSHIP

A regression was also conducted with Transactional Leadership as the dependent variable. For the purposes of this analysis transactional leadership refers to Management-by-Exception (both active and passive forms) and Constructive Transaction. The results of the regression analysis are presented in Tables 11.48 to 11.53.

Table 10.48: Multiple regression (transformational leadership) - Bravais- Pearson product-moment correlations.

		Transact	Pride	PD	UA	Indiv	Masc
Pearson Correlation	Transact	1.000	.085	-.055	-.113	-.032	-.080
	Pride	.085	1.000	.029	.104	-.326	-.320
	PD	-.055	.029	1.000	.146	-.014	-.028
	UA	-.133	.104	.146	1.000	-.057	-.016
	Indiv	-.032	-.326	-.014	-.057	1.000	.764
	Masc	-.080	-.320	-.028	-.016	.764	1.000

Table 10.48: (Continued)

Sig. (1-tailed)	Transact	.	.028	.109	.005	.238	.036
	Pride	.028	.	.260	.010	.000	.000
	PD	.109	.260	.	.000	.378	.264
	UA	.005	.010	.000	.	.098	.358
	Indiv	.238	.000	.378	.098	.	.000
	Masc	.036	.000	.264	.358	.000	.
N	Transact	506	506	506	506	506	506
	Pride	506	506	506	506	506	506
	PD	506	506	506	506	506	506
	UA	506	506	506	506	506	506
	Indiv	506	506	506	506	506	506
	Masc	506	506	506	506	506	506

As is shown in Table 10.48, transactional leadership correlates low, positively and significantly ( $r = 0.085$ ;  $p = 0.028$ ;  $p$  being  $< 0.05$ ) with Pride in Work. It correlates low, significantly, but negatively with Uncertainty Avoidance ( $r = 0.113$ ;  $p = 0.005$ ;  $p$  being  $< 0.05$ ) and Masculinity ( $r = 0.080$ ;  $p = 0.036$ ;  $p$  being  $< 0.05$ ). The other correlations were already discussed under statistics of association. In Table 10.49 the variables entered/removed are presented.

Table 10.49: Multiple regression (transactional leadership) - variables entered/removed.

Model	Variables Entered	Variables Removed	Method
1	UA	.	Stepwise (Criteria: Probability –of- F- to-enter $\leq .050$ .)



2	Pride	.	Probability –of- F- to-remove $\geq$ 100).  Stepwise (Criteria: Probability –of- F- to-enter $\leq$ .050. Probability –of- F- to-remove $\geq$ 100).
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The above table shows that only the independent variables Uncertainty Avoidance and Pride in Work are entered into the equation. The regression model summary is presented in Table 10.50.

Table 10.50: Multiple regression model summary – Transactional leadership.

		Model	
		1	2
	R	.113	.149
	R Square	.013	.022
	Adjusted R Square	.011	.018
	Std. Error of the Estimate	5.35793	5.33729
Change Statistics	R Square Change	.013	.010
	F Change	6.528	4.906
	df1	1	1
	df2	504	503
	Sig. F Change	.011	.027
	Durbin-Watson		1.944

As is evident from Table 10.50, the multiple correlation (R) at the second step is 0.149. The  $R^2$  equals 0.022. This implies that the two independent variables predict only 2,2% of the variance in the dependent variable. The adjusted  $R^2$  does not contribute to the improvement of the goodness of fit. With Pride in Work entering the equation, the  $R^2$ -Change is only 0.010. This low value implies that the changed  $R^2$  is small when Pride in Work entered the equation. The F-Change is significant ( $p = 0.027$ ;  $p$  being  $< 0.05$ ) which means that the model fits the data.

Table 10.51 contains the results of the analysis of variance.

Table 10.51: Multiple regression (transactional leadership) – ANOVA.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	187.388	1	187.388	6.528	.011
	Residual	14468.541	504	28.707		
	Total	14655.929	505			
2	Regression	327.143	2	163.572	5.742	.003
	Residual	14328.785	503	28.487		
	Total	14655.929	505			

It is clear from Table 10.51 that, as the value of the regression increases from step 1 to step 2, the value of the residual decreases from step 1 to step 2. The F-value, the ratio between the mean square regression of squares and the mean square residual, has a significant level ( $F = 5,742$ ;  $p = 0.003$ ;  $p$  being  $< 0.05$ ). The hypothesis of  $R^2_{pop} < 0$  has to be rejected. The standardised and unstandardised coefficient with  $t$  and probability level are presented in Table 10.52.

Table 10.52: Multiple regression (transactional leadership) – Coefficients.

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std Error	Beta		
1	(Constant)	28.354	1,129		25.108	.000*
	UA	-.308	.121	-.113	-2.555	.011*
2	(Constant)	23.398	2.504		9.344	.000*
	UA	-.336	.121	-.123	-2.781	.006*
	Pride	.128	.058	.098	2.215	.027*
(* $p \leq 0.05$ )						

Table 10.52 shows that all the predictors contribute significantly to the dependent variable, transactional leadership. The excluded variables are shown in Table 10.53.

Table 10.53: Multiple regression (transactional leadership) – variables excluded.

				Partial	Collinearity Statistics
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Model		Beta In	T	Sig.	Correlation	Tolerance	VIF	Minimum Tolerance
1	Pride	.098	2.215	.027	.098	.989	1.011	.989
	PD	-.039	-.873	.383	-.039	.979	1.022	.979
	Indiv	-.038	-.866	.387	-.039	.997	1.003	.997
	Masc	-.082	-1.856	.064	-.082	1.000	1.000	1.000
2	PD	-.040	-.907	.365	-.040	.979	1.022	.969
	Indiv	-.008	-.163	.871	-.007	.893	1.120	.886
	Masc	-.056	-1.214	.225	-.054	.897	1.114	.888
(* p ≤ 0.05)								

The above table indicates that the excluded variables all have significance levels above 0.05. According to the values of Beta In, should these excluded variables enter the equation at the next step, the standardised regression would in all cases be low, negative and insignificant.

## 10.8 SUMMARY

In this chapter the results of the statistical analysis of the data were presented. The scientific data was presented according to the specific responses of 509 participants (respondents) on the Survey of Work Values (Wollack *et al*, 1971), the Value Survey Module (Hofstede, 1980), the Internal Control Index (Duttweiler, 1984) and the Multifactor Leadership Questionnaire (Bass *et al*, 1997).

Descriptive statistics were used to record the numerical properties of the various distributions. Correlational statistics were employed to ascertain the relationships between the different dimensions of the questionnaires and between the different questionnaires and the three main leadership dimensions, viz Transformational Leadership, Transactional Leadership and leadership outcomes. Multiple regression was employed to ascertain the prediction of outcomes by both transformational and transactional leadership behaviour as independent variables. Also, the dimensions of the Survey of Work Values, the Value Survey Module and the Internal Control Index were employed as predictors with transformational leadership and transactional leadership as dependent variables (criteria).