

### APPENDIX 3

## PRELIMINARY STATISTICAL PROCEDURES FOR THE DETERMINATION OF THE DIVERSITY-RELATED ORGANIZATION FORM OF ORGANIZATIONS IN SOUTH AFRICA.

### **Pre-testing of data-collection techniques.**

The choice of the target population was in part based on the reduction or elimination of possible error sources that can result in measurement differences that are not attributable to the respondent.

MBL students are mature or maturing managers for whom a two-weekly study school at the business school's Midrand campus in Gauteng is compulsory, due to the distance-learning nature of the degree. The sample population is representative of all the geographic provinces of South Africa. Two second-year classes with a total number of 159 students, pre-tested the diversity opinion survey during March 1998. The outcomes were as follows:

Respondents experienced the venue as appropriate and non-threatening.

The instrument was assessed as appropriate. The researcher invited comments on ambiguity of questions or statements, physical defects of the instrument that could compromise results, and the relevance and importance of the survey sections and the nature of its variables. All respondents could not fault the sections on diversity, but a significant number felt that they were not happy with sub-section A9 (specification of racial categories), and sub-section A10 (specification of hierarchical level in organization). This incident introduced the risk that opinion

differences will come from relatively stable characteristics of the respondent, that affect the scores. Sub-sections A9 and A10 was subsequently omitted from the instrument.

(i). *Editing of the data.*

The first computer-run was done on the UNISA group. Errors were removed. This was followed by a frequency analysis of all sections of the survey instrument. Professor Erwee assisted the researcher with the editing process.

21 May 1998

The outcome of the editing process were the following decisions:

New variables were created. Group=Unisa if  $1 \leq v1 \leq 499$  and  
Group = UP if  $1 \geq v1 \geq 500$ .

The following items were reverse scored:

v12, v27-v40: 1-5 as vv12, vv27-vv40: 5-1 v82-v114:1-3 as vv82-vv114:3-1

(ii). *Preliminary factor analysis and item analysis*

Factor analysis was done on all the items in sections B, C, D, F and G respectively for the criterion group and the reference group. BMDP4M was used with method=MLFA, Communalities=squared multiple correlations and rotation=direct quartimin =oblique rotation. First following as many factors as there are eigenvalues larger than 1 and then 1, 1,2 and 3 and factors respectively.

Further factor analysis (three factors) was done on all the items in sections B, C, D, F and G respectively for the combined group. First following as many factors as there are eigenvalues larger than 1 and then 1, 1,2 and 3 and factors respectively.

Item analysis was done with ITEMAN on all the theoretical fields.

Totals were calculated for all the theoretical fields:

TOTB, TOTC, TOTD, TOTF1, TOTF2, IAB, OVN, MPP

Test for significant differences between two observers on one factor - Proc Univariate was done on all the totals.

2 June 1998

(iii). *Factor and Item analysis for one factor.*

Repeat factor analysis for three factors, two factors and one factor for the combined group, under the following conditions:

Section B: VV12 is left out

Section C :V32 is not reverse scored and VV39 is left out

Section D: V41, v48 are left out.

Section F: V8 is left out and V46, V73, V75 is reverse scored.

Section G: All IAB items are left out

Repeat the above factor analysis for the criterion and reference groups.

Perform Item analysis on the items as in (b) for sections B, C and D.

(iv). *Extended factor and item analysis on sections F and G.*

More iterations are required, as the work in (b) did not produce conclusive results for sections F and G.

Section F: for the combined group:

repeat (b) with V68 reverse scored.

Repeat (b) with v73 and v75 not reverse scored

Section G:

Factor analysis for one factor, with IAB-items left out.

Item analysis on final items for Sections F and G.

Calculate totals for new fields:

TOTB = V13-v26

TOTC= VV27-VV31 V32 VV33-VV38 VV40

TOTD= V42-V47 V49-V51

TOTF1= V63 VV64 V65 V67 VV68 V71 V77

TOTF2= V70 V72-V75 V80

TOTG= VV83 VV84 VV87 VV91 VV93-VV95

VV97 VV98 VV102 VV104 VV105

VV108 VV110 VV111 VV113 VV114.

Test for significant differences between two observers on multiple factors.

MANOVAS on sections B, C, D, F and G.

## APPENDIX 3(b)

### PRELIMINARY STATISTICAL PROCEDURES FOR THE DETERMINATION OF FACTORS OF WORKFORCE DIVERSITY IN SOUTH AFRICA

#### Measurement of associations between factors and sections

##### *The interdependence of sections*

Determination of bivariate linear relationships between two sections.

Pearson's Product moment correlation is used.

##### *Method:*

Proc. Means of TOTB-TOTG per group.

Proc GLM with model: MANOVA h=group/print printe

The procedure followed was as follows:

- (i). Calculate totals for final fields: TOTB, TOTC, TOTD, TOTF1, TOTF2 and TOTG per group. Do MANOVAs on TOTB-TOTG per group and on the combined group
- (a). Calculate totals for final fields: TOTB, TOTC, TOTD, TOTF1, TOTF2 and TOTG per group. Do MANOVAs on TOTB-TOTG per group and on the combined group.

*The interrelationships between sections*

Determination of multiple correlations, i.e., the overall linear association of one (dependent) variable with several other (independent) variables.

Recode variables of section A.

Determine the measures of association between sections B, C, D, F1, F2 and G.

*Method:*

proc CORR on TOTB--TOTG per group and for the combined group.

Do Factor analysis on TOTB--TOTG for the combined group and with group as divider.

Do MANOVAs on TOTB-TOTG = VV3 – VV7, V8 and VV10.

*Method:*

Proc GLM with model:

*Test for significance in differences of correlation based on biographical and organizational diversity.*

Factors of Section D

Figure 5.2.1

**APPENDIX 4**

**Sample statistics that are relevant in answering research question 1.**

**SECTION D: Status quo regarding the management of workforce diversity**

**Table 5.2.1**

TOT D	Criterion Group	Reference group
<b>DEM VV7</b>		
Mean	17,07	18,34
F-Value	1,60	10,17
Pr > F	0,2040	0,0001
<b>DEM V8</b>		
Mean	17,07	18,36
F-Value	1,09	1,22
Pr > F	0,2973	0,2703
<b>ORG VV3</b>		
Mean	16,99	18,36
F-Value	0,10	15,38
Pr > F	0,7509	0,0001
<b>ORG VV4</b>		
Mean	17,00	18,32
F-Value	1,95	1,74
Pr > F	0,1642	0,1882
<b>ORG VV5</b>		
Mean	17,08	18,35
F-Value	0,78	2,19
Pr > F	0,3784	0,1402
<b>ORG VV6</b>		
Mean	17,08	18,40
F-Value	0,47	0,00
Pr > F	0,4958	0,9816
<b>ORG VV10</b>		
Mean	17,08	18,35
F-Value	0,15	2,48
Pr > F	0,8573	0,0850

Factors of Section D

Figure 5.2.1

Alpha all variables = 0.7873

		Factor – loadings			Item-scale correlation IS
		F1	F2	F3	
V42	Family and parenting problems like day-care and care of aged relatives are treated as women's problems, or There are flexible systems to accommodate the needs of diverse staff, or Many options are available to support staff with children and dependants.			0,393	0,39
V43	Newcomers are expected to adapt to existing forms, or There is some flexibility to accommodate the needs of diverse staff, or Norms are flexible enough to accommodate everyone.			0,641	0,58
V44	Diversity is an issue that stirs irritation and resentment, or Attention is paid to meeting equal employment opportunity guidelines, or Working towards a diverse staff is seen as a strategic advantage.	0,663			0,64
V45	Dealing with diversity is not a top priority, or Dealing with diversity is the responsibility of the personnel department, or Dealing with diversity is considered part of every manager's job.	0,705			0,67
V46	People downplay or ignore differences among employees, or People tolerate differences and the needs they imply, or People value differences and want to see diversity cultivated.	0,584			0,65
V47	There is diversity in staff at lower levels, or There is diversity among staff at lower and middle management levels, or There is diversity among staff at all levels.	0,380			0,55
V49	Managers are held accountable for Motivating staff to increase productivity, or Avoiding equal opportunity and discrimination grievances, or Working effectively with a diverse staff.		0,284		0,47
V50	Managers are held accountable for Maintaining a stable staff and maintaining existing norms, or Meeting affirmative action goals and identifying promotable talent, or Building productive work-teams with a diverse staff.	0,715			0,70
V51	In our company it is an advantage To be a white male, or Learning to be the old guard, or To be unique and find new ways of doing things	0,559			0,63



## SECTION C: Extent of organizational change

Table 5.2.2

TOT C	Criterion Group	Reference Group
<b>DEM VV7</b>		
Mean	39,17	42,81
F-Value	0,76	3,20
Pr > F	0,4707	0,0418
<b>DEM V8</b>		
Mean	39,17	42,80
F-Value	0,13	3,53
Pr > F	0,7142	0,0611
<b>ORG VV3</b>		
Mean	38,86	42,84
F-Value	0,12	1,77
Pr > F	0,7316	0,1842
<b>ORG VV4</b>		
Mean	39,04	42,78
F-Value	7,58	3,02
Pr > F	0,0064	0,0830
<b>ORG VV5</b>		
Mean	39,06	42,85
F-Value	1,25	1,92
Pr > F	0,2655	0,1664
<b>ORG VV6</b>		
Mean	39,26	42,91
F-Value	4,55	0,09
Pr > F	0,0339	0,7664
<b>ORG VV10</b>		
Mean	39,18	42,90
F-Value	3,26	0,91
Pr > F	0,0401	0,0002

## Factors of Section C

Figure 5.2.2

		Factor-Loading	Item-scale Correlation
Alpha for all variables = 0,8964			
VV27	Change is viewed as a challenge and opportunity	0,647	,69
VV28	Policies are reviewed annually	0,636	,42
VV29	Rewards are handed out to suit the preference of the person rewarded	0,354	,72
VV30	There is an openness to suggestions from all people in the company	0,694	,72
VV31	Our strategic plan is revised as needed	0,710	,62
VV32	“We have always done it this way”, is a reflection of how our company responds to new ideas	0,635	,68
VV33	When problems emerge, there is a willingness to fix them	0,661	,67
VV34	Our training and services reflect awareness of a diverse customer base	0,626	,63
VV35	My supervisor values new ideas and implements them quickly	0,635	,63
VV36	Performance evaluation here measures staffs adaptation to change	0,601	,69
VV37	Our top managers are visionary and approachable	0,727	,42
VV38	We can bring about changes very easily	0,749	,74
VV40	People at all levels can build or refine structures	0,542	,62

Table 5.2.3 (b)

### 5.2.3 SECTION F: How much is diversity valued in your company

Table 5.2.3 (a).

Multicultural views <i>Valuing diversity.</i>	TOT F1	Criterion Group	Reference Group
	<b>DEM VV7</b>		
	Mean	27,33	28,25
	F-Value	1,14	1,76
	Pr > F	0,3230	0,1731
	<b>DEM V8</b>		
	Mean	27,33	28,24
	F-Value	0,07	0,72
	Pr > F	0,7958	0,3967
	<b>ORG VV3</b>		
	Mean	27,29	28,25
	F-Value	0,05	0,28
	Pr > F	0,8311	0,5975
	<b>ORG VV4</b>		
	Mean	27,28	28,26
	F-Value	0,20	1,18
	Pr > F	0,6562	0,2787
	<b>ORG VV5</b>		
	Mean	27,32	28,26
	F-Value	1,19	0,11
	Pr > F	0,2765	0,7427
	<b>ORG VV6</b>		
	Mean	27,36	28,23
	F-Value	0,11	3,76
	Pr > F	0,7458	0,0532
	<b>ORG VV10</b>		
	Mean	27,33	28,22
	F-Value	0,13	0,81
	Pr > F	0,8749	0,4451

Table 5.2.3 (b).

Mono-cultural views	TOT F2	Criterion Group	Reference Group
<i>Resistance to diversity.</i>	<b>DEM VV7</b>		
	Mean	21,43	21,07
	F-Value	0,66	0,36
	Pr > F	0,5194	0,6967
	<b>DEM V8</b>		
	Mean	21,43	21,07
	F-Value	0,03	0,45
	Pr > F	0,8556	0,5010
	<b>ORG VV3</b>		
	Mean	21,45	21,05
	F-Value	5,26	2,03
	Pr > F	0,0227	0,1548
	<b>ORG VV4</b>		
	Mean	21,39	21,07
	F-Value	2,86	0,02
	Pr > F	0,0020	0,8927
	<b>ORG VV5</b>		
	Mean	21,46	21,04
	F-Value	3,82	0,16
	Pr > F	0,0517	0,6880
	<b>ORG VV6</b>		
	Mean	21,44	21,02
	F-Value	3,26	4,60
	Pr > F	0,0721	0,0326
	<b>ORG VV10</b>		
	Mean	21,42	21,04
	F-Value	0,77	0,53
	Pr > F	0,4659	0,5913

**Factors of Section F**

**Figure 5.2.3**

Alpha all variables = 0,6125

		Factor-Loading		Item-scale correlation
		Mono-cultural F2	Multi-cultural F1	
V63	Diversity brings creativity and energy to a workgroup		0,697	0,71
V65	Multicultural teams can be stimulating and productive		0,686	0,60
V68	Diversity only brings unnecessary conflict and problems in a workgroup.	0,651		0,70
V67	Showing flexibility to people's individual needs, increases commitment and motivation of employees.		0,608	0,69
V71	People are motivated and productive when they feel they are accepted for who they are.		0,546	0,71
V74	Minority groups tend to stick together.	0,678		0,50
VV73	Stereotypes exist about minority groups.		0,570	0,54
VV75	Differences often make people feel uncomfortable		0,530	0,67
V80	People are reluctant to disagree with minority group employees for fear of being called prejudiced.	0,418		0,66
V72	Women and minorities are over-sensitive to prejudice and discrimination.	0,357		0,54
VV64	Minority group members should be expected to forsake their own cultures and adapt to our ways.	0,466		0,63
V77	There should be no double standards – the rules should be the same for everyone.		0,284	0,47

Factors of Section G

**5.2.4 SECTION G : How is diversity managed in your company**

**Table 5.2.4**

TOT G	Criterion Group	Reference Group
<b>DEM VV7</b>		
Mean	31,33	33,72
F-Value	1,23	10,49
Pr > F	0,2944	0,0001
<b>DEM V8</b>		
Mean	31,33	33,74
F-Value	0,03	3,80
Pr > F	0,8646	0,0522
<b>ORG VV3</b>		
Mean	31,15	33,75
F-Value	0,18	10,90
Pr > F	0,6702	0,0011
<b>ORG VV4</b>		
Mean	31,27	33,75
F-Value	9,34	0,74
Pr > F	0,0025	0,3910
<b>ORG VV5</b>		
Mean	31,41	33,74
F-Value	0,01	0,78
Pr > F	0,9090	0,3763
<b>ORG VV6</b>		
Mean	31,33	33,81
F-Value	0,83	1,75
Pr > F	0,3634	0,1872
<b>ORG VV10</b>		
Mean	31,30	33,74
F-Value	2,46	1,93
Pr > F	0,0874	0,1468

## Factors of Section G

Figure 5.2.4

Alpha all variables = 0,7698

Factor loadings.

Item-scale correlations

		Organi- sation Values and Norms	Management Pract- ices & Proce-dures	
VV113	Top management backs up its value on diversity with action.	0,726		0,73
VV114	Managers have effective strategies to use when one group refuses to work with another.		0,652	0,63
VV104	Policies are flexible enough to accommodate everyone.	0,643		0,66
VV91	Managers are flexible and structure benefits and rules that work for everyone.		0,609	0,61
VV111	Managers effectively use problem-solving skills to deal with language differences and other cultural clashes.		0,606	0,59
VV108	Multicultural work teams exist and are working harmoniously.		0,557	0,52
VV110	Resources are spent on diversity development	0,501		0,52
VV84	Managers have a track record of firing and promoting diverse staff.		0,470	0,52
VV87	Managers hold all people equally accountable.		0,470	0,50
VV105	Managers get active participation from all staff in meetings.		0,465	0,48
VV102	Managers give feedback and evaluate performance so staff do not lose face.		0,444	0,51
VV97	Members of minority groups feel that they belong.	0,435		0,47
VV94	There is a mentoring programme that identifies and prepares people of diverse backgrounds for promotion.	0,395		0,46
VV93	There is a mentoring programme that identifies and prepares women for promotion.	0,394		0,45
VV83	There is diverse staff at all levels.	0,392		0,49
VV95	Appreciation of differences can be seen in the rewards managers give.	0,378		0,42
VV98	One criterion of a manager's performance is developing the diversity of his/her staff.		0,307	0,37

## SECTION B: Extent of diversity related problems

Table 5.2.5

TOT B	Criterion Group	Reference Group
<b>DEM VV7</b>		
Mean	44,31	45,58
F-Value	0,19	2,58
Pr > F	0,8293	0,0772
<b>DEM V8</b>		
Mean	44,31	44,59
F-Value	0,03	0,00
Pr > F	0,8545	0,9456
<b>ORG VV3</b>		
Mean	44,21	45,62
F-Value	1,5	0,27
Pr > F	0,2212	0,6018
<b>ORG VV4</b>		
Mean	44,22	45,46
F-Value	8,43	6,02
Pr > F	0,0040	0,0146
<b>ORG VV5</b>		
Mean	44,20	45,66
F-Value	0,59	1,89
Pr > F	0,4443	0,1701
<b>ORG VV6</b>		
Mean	44,42	45,66
F-Value	18,68	0,34
Pr > F	0,0001	0,5624
<b>ORG VV10</b>		
Mean	44,35	45,69
F-Value	2,91	6,08
Pr > F	0,0565	0,0025



**Factors of Section B****Figure 5.2.5**

Alpha all variables = 0.9035

In our organisation there is:		Factor-Loading	Item-scale Correlation
V26	Frustrations resulting from cultural differences	,771	0,65
V24	Exclusion of people who are different from others	,730	0,71
V20	Increase in grievances by members of minority groups	,720	0,55
V25	Barriers in promotion for diverse employees	,712	0,77
V18	Complaints about discrimination in promotions, pay and performance reviews	,708	0,68
V14	Resistance to working with other groups (ethnic, gender, physical ability)	,699	0,53
V22	Open conflict between groups or individuals from different groups.	,698	0,62
V19	Lack of social interaction between members of diverse groups	,674	0,74
V17	Ethnic, racial or gender slurs or jokes	,606	0,72
V13	Complaints about staff speaking other languages at work	,556	0,73
V23	Mistakes and productivity problems due to staff not understanding directions	,523	0,72
V21	Difficulty in recruiting and retaining members of different groups	,510	0,68
V16	Difficulty in communicating due to limited or heavily accented English	,491	0,65

**APPENDIX 5**

**ITEM STATISTICS : SECTION 4**

**SAMPLE STATISTICS ON ITEMS OF THE SECTIONS OF THE DIVERSITY OPINION SURVEY**

Item	Mean	Standard Deviation	Skewness
1-1	3,358	1,455	0,28
1-2	3,306	1,345	0,20
1-3	4,057	1,026	0,93
1-4	3,940	1,011	0,34
1-5	3,132	1,401	0,65
1-6	2,775	1,429	0,72
1-7	2,488	1,321	0,68
1-8	3,203	1,341	0,34
1-9	2,783	1,314	0,35
1-10	2,707	1,316	0,66
1-11	3,079	1,209	0,67
1-12	3,396	1,316	0,32
1-13	3,325	1,320	0,31
1-14	2,938	1,465	0,41
2-1	3,508	1,228	0,31

## ITEM STATISTICS : SECTION B

Scale – Item	Item- Mean	Item- Variance	Item-scale correlation
1-1	3,358	1,455	0,57
1-2	3,396	1,345	0,73
1-3	4,057	1,056	0,53
1-4	3,940	1,053	0,57
1-5	3,182	1,401	0,65
1-6	2,778	1,479	0,72
1-7	2,488	1,323	0,68
1-8	3,203	1,349	0,74
1-9	2,783	1,514	0,55
1-10	3,707	1,134	0,68
1-11	3,079	1,200	0,62
1-12	3,396	1,318	0,72
1-13	3,325	1,520	0,71
1-14	2,938	1,408	0,77
2-1	3,508	1,228	0,65

## ITEM STATISTICS : SECTION C

Scale – Item	Item- Mean	Item- Variance	Item-scale Correlation.
2-1	3,423	1,271	0,66
2-2	3,160	1,544	0,70
2-3	2,595	1,323	0,50
2-4	3,272	1,443	0,73
2-5	3,426	1,488	0,72
2-6	2,808	1,522	- 0,51
2-7	3,797	1,008	0,63
2-8	3,414	1,309	0,64
2-9	3,424	1,310	0,66
2-10	2,804	1,306	0,68
2-11	3,420	1,467	0,75
2-12	2,939	1,266	0,74
2-13	3,117	1,413	0,15
2-14	2,602	1,439	0,62

## ITEM STATISTICS : SECTION D

Scale – Item	Item- Mean	Item- Variance	Item-scale Correlation
3-1	1,865	0,535	0,22
3-2	1,600	0,439	0,39
3-3	1,667	0,628	0,58
3-4	2,030	0,578	0,64
3-5	2,311	0,745	0,67
3-6	1,930	0,469	0,65
3-7	2,104	0,638	0,55
3-8	1,710	0,588	0,44
3-9	1,724	0,820	0,47
3-10	2,030	0,791	0,70
3-11	2,379	0,638	0,63

## ITEM STATISTICS : SECTION F

Scale – Item	Item- Mean	Item- Variance	Item-scale correlation
1-1	3,819	0,979	0,71
1-2	3,835	0,971	0,60
1-3	3,825	0,801	0,70
1-4	4,087	0,729	0,69
1-5	3,809	0,906	0,71
1-6	4,186	0,639	0,63
1-7	4,306	0,895	0,47
2-1	3,655	1,347	0,50
2-2	3,247	1,094	0,54
2-3	3,556	0,884	0,67
2-4	3,824	0,694	0,66
2-5	3,706	0,698	0,54
3-12	1,947	0,457	0,56
3-13	2,213	0,365	0,52
3-14	1,814	0,617	0,52
3-15	1,851	0,521	0,48
3-16	2,076	0,542	0,52
3-17	1,504	0,436	0,51

## ITEM STATISTICS : SECTION G

Scale – Item	Item- Mean	Item- Variance	Item-scale correlation
2-6	3,211	1,013	0,60
3-1	1,926	0,734	0,45
3-2	1,854	0,539	0,51
3-3	2,128	0,723	0,45
3-4	2,053	0,606	0,61
3-5	1,419	0,424	0,47
3-6	1,742	0,645	0,48
3-7	1,697	0,485	0,45
3-8	2,051	0,433	0,48
3-9	2,254	0,641	0,40
3-10	2,058	0,594	0,50
3-11	2,174	0,624	0,65
3-12	1,947	0,657	0,50
3-13	2,213	0,569	0,58
3-14	1,814	0,617	0,54
3-15	1,851	0,525	0,61
3-16	2,076	0,562	0,72
3-17	1,864	0,496	0,65

FACTOR STATISTICS OF ITEMS - SECTION B

APPENDIX 6

Items            Variable            Factor loading

**SAMPLE STATISTICS ON FACTOR ANALYSIS OF  
SECTIONS OF THE DIVERSITY OPINION QUESTIONNAIRE**

1-9	V20	0.708
1-14	V25	0.772
1-7	V18	0.766
1-3	V14	0.698
1-11	V22	0.697
1-8	V19	0.674
1-6	V17	0.636
1-2	V13	0.556
1-12	V23	0.512
1-10	V21	0.419
1-5	V16	0.401
1-4	V15	0.360



**FACTOR STATISTICS OF ITEMS : SECTION B**

Scale – Item	Measurement- Variable	Factor – alpha coefficient.
2-1	V26	0,771
1-13	V24	0,730
1-9	V20	0,720
1-14	V25	0,712
1-7	V18	0,708
1-3	V14	0,699
1-11	V22	0,698
1-8	V19	0,674
1-6	V17	0,606
1-2	V13	0,556
1-12	V23	0,523
1-10	V21	0,510
1-5	V16	0,491
1-4	V15	0,460

FACTOR STATISTICS OF ITEMS : SECTION B

FACTOR STATISTICS OF ITEMS : SECTION C

Item	Variable	Measurement- Variable	Monocultural	Non-discriminatory	Multicultural
Scale –	Measurement-	Factor – alpha			
Item	Variable	coefficient	0,000	0,000	0,000
2-3	VV3	0,775	0,000	0,000	0,000
2-12	VV38	0,749	0,000	0,000	0,000
2-11	VV37	0,727	0,000	0,000	0,000
2-5	VV31	0,710	0,000	0,000	0,000
2-4	VV30	0,694	0,000	0,000	0,000
2-7	VV33	0,661	0,000	0,000	0,000
2-1	VV27	0,647	0,000	0,000	0,000
2-2	VV28	0,636	0,000	0,000	0,000
2-9	VV35	0,635	0,000	0,000	0,000
2-6	V32	0,635	0,000	0,000	0,000
2-8	VV34	0,626	0,000	0,000	0,000
2-10	VV36	0,601	0,000	0,000	0,000
2-14	VV40	0,542	0,000	0,000	0,000
2-3	VV29	0,354	0,000	0,000	0,000

**FACTOR STATISTICS OF ITEMS : SECTION D**

Scale – Item	Measurement- Variable	Factor 1 Monocultural	Factor 2 Non-discriminatory	Factor 3 Multicultural
3-10	V50	0,715	0,000	0,000
3-5	V45	0,705	0,000	0,000
3-4	V44	0,663	0,000	0,000
3-6	V46	0,584	0,000	0,000
3-11	V51	0,559	0,000	0,000
3-8	V48	0,000	0,969	0,000
3-3	V43	0,265	0,000	0,641
3-2	V42	0,000	0,000	0,393
3-1	V41	0,000	0,000	0,000
3-7	V47	0,380	0,000	0,000
3-9	V49	0,265	0,284	0,000
3-1	V40	0,112	0,357	0,000
3-7	V47	0,284	0,643	0,000
3-10	V50	0,058	0,236	0,000

FACTOR STATISTICS OF ITEMS : SECTION G

FACTOR STATISTICS OF ITEMS : SECTION F

Item	Variable	Factor 1	Factor 2
Scale – Item	Measurement- Variable	Multicultural	Mono-cultural
1-1	V63	0,697	-0,043
1-2	V65	0,686	-0,073
2-1	V74	0,005	0,678
1-3	V68	0,651	-0,149
1-4	V67	0,608	0,033
2-2	V73	0,032	0,570
1-5	V71	0,546	0,159
2-3	V75	0,012	0,530
1-6	V64	0,466	-0,165
2-4	V80	-0,048	0,418
2-5	V72	-0,112	0,357
1-7	V77	0,284	0,090
-	V70	0,058	0,236
1-8	V69	0,704	0,000
2-6	V76	0,302	0,375
2-7	V78	0,000	0,632
1-9	V79	-0,207	0,000
2-8	V81	-0,333	0,000
1-10	V66	-0,003	0,000
2-9	V70	-0,105	0,000
1-11	V62	-0,337	0,224

**FACTOR STATISTICS OF ITEMS : SECTION G**

Scale – Measurement- Factors - Macro

Item Variable

		Organisation Values & Norms	Management Practices & Procedures
3-16	VV113		0,726
3-17	VV114		0,652
3-11	VV104		0,648
3-15	VV91		0,609
2-6	VV111		0,606
3-4	VV108	0,557	
3-13	VV110		0,501
3-14	VV84		0,470
3-2	VV87		0,470
3-12	VV105		0,465
3-10	VV102		0,444
3-8	VV97		
3-9	VV94	0,435	
3-5	VV93	0,395	
3-7	VV83	0,394	
3-1	VV95	0,392	0,378
3-3	VV98		0,307
-	VV90	-0,007	
-	VV89	-0,033	
-	VV101	-0,095	
-	VV100	-0,105	
-	VV107	-0,137	0,236

**APPENDIX 7**

**SAMPLE STATISTICS OF MEASURES OF ASSOCIATION  
BETWEEN SECTIONS OF THE DIVERSITY OPINION  
SURVEY**

**RESULTS ON THE ASSOCIATION BETWEEN SECTIONS**

The results on the associations between sections, are associations between latent variables, and will be used in covariance analysis to determine the factors (manifest) of workforce diversity.

**5.3.1 The interrelationships between sections.**

*Extent of association between sections*

Multivariate Analysis of Variance.

Partial Correlation Coefficients from the Error SS&CP Matrix /

Prob. > | r |. Level of significance = 0.05.

Figure 5.7.1

DF=606	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B Pr		0,424 0,0001	0,440 0,0001	0,092 0,0242	-0,388 0,0001	0,453 0,0001
TOT C Pr			0,605 0,0001	0,179 0,0001	-0,277 0,0001	0,605 0,0001
TOT D Pr				0,211 0,0001	-0,343 0,0001	0,672 0,0001

TOT F1 Pr					-0,092 0,0235	0,190 0,0001
TOT F2 Pr						-0,372 0,0001

### 5.3.2 Differences between criterion and reference groups on extent of association of sections

Pearson Correlation Coefficient / Prob. > |r| under Ho : Rho = 0/number of observations (Groups 1 & 2)

	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B Criterion Reference		,357 ,468	,456 ,416	,106 ,079	-0,410 -0,369	,455 ,452
TOT C Criterion Reference			,624 ,578	,247 ,123	-0,319 -0,244	,596 ,619
TOT D Criterion Reference				0,279 0,162	-0,427 -0,278	,675 ,677
TOT F1 Criterion Reference					-0,196 -0,0007	,251 ,131
TOT F2 Criterion Reference						-0,394 -0,347

**Extent of association of sections based on demographic and organisational diversity**

Association : based on demographic category attributes

H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > | r |

*V8 : Gender*

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B Grp 1 Pr	239		0,367 0,0001	0,476 0,0001	0,104 0,1066	-0,410 0,0001	0,455 0,0001
Grp 2 Pr	363		0,468 0,0001	0,414 0,0001	0,079 0,1318	-0,366 0,0001	0,452 0,0001
TOT C Grp 1 Pr				0,645 0,0001	0,248 0,0001	-0,322 0,0001	0,589 0,0001
Grp 2 Pr				0,578 0,0001	0,130 0,013	-0,235 0,0001	0,614 0,0001
TOT D Grp 1 Pr					0,277 0,0001	-0,432 0,0001	0,674 0,0001
Grp 2 Pr					0,164 0,0017	-0,274 0,0001	0,673 0,0001
TOT F1 Grp 1 Pr						-0,196 0,0001	0,256 0,0001
Grp 2 Pr						-0,003 0,9467	0,1362 0,0092
TOT F2 Grp 1 Pr							-0,400 0,0001
Grp 2 Pr							-0,339 0,0001



H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > |r|

VV7 : Age

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B							
Grp 1			0,366	0,476	0,106	-0,409	0,461
Pr			0,0001	0,0001	0,1010	0,0001	0,0001
Grp 2			0,458	0,401	0,072	-0,363	0,437
Pr			0,0001	0,0001	0,1667	0,0001	0,0001
TOT C							
Grp 1				0,640	0,248	-0,319	0,598
Pr				0,0001	0,0001	0,0001	0,0001
Grp 2				0,568	0,1156	-0,235	0,608
Pr				0,0001	0,0274	0,0001	0,0001
TOT D							
Grp 1					0,275	-0,427	0,681
Pr					0,0001	0,0001	0,0001
Grp 2					0,146	-0,275	0,657
Pr					0,0052	0,0001	0,0001
TOT F1							
Grp 1						-0,197	0,251
Pr						0,0027	0,0001
Grp 2						-0,001	0,1151
Pr						0,9910	0,0281
TOT F2							
Grp 1							-0,408
Pr							0,0001
Grp 2							-0,342
Pr							0,0001

Partial correlation coefficients from the error SS&CP Matrix / Prob > 1 r 1

*VV3 : Tenure in present organisation*

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B Grp 1 Pr	232		0,368 0,0001	0,475 0,0001	0,103 0,1153	-0,402 0,0001	0,461 0,0001
Grp 2 Pr	365		0,468 0,0001	0,419 0,0001	0,080 0,1281	-0,368 0,0001	0,454 0,0001
TOT C Grp 1 Pr				0,643 0,0001	0,244 0,0002	-0,323 0,0001	0,584 0,0001
Grp 2 Pr				0,580 0,0001	0,125 0,0169	-0,239 0,0001	0,618 0,0001
TOT D Grp 1 Pr					0,272 0,0001	-0,429 0,0001	0,673 0,0001
Grp 2 Pr					0,159 0,0023	-0,272 0,0001	0,666 0,0001
TOT F1 Grp 1 Pr						-0,185 0,0044	0,253 0,0001
Grp 2 Pr						-0,002 0,9667	0,129 0,0135
TOT F2 Grp 1 Pr							-0,416 0,0001
Grp 2 Pr							-0,339 0,0001

Association based on organisational attributes

H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > |r|

**VV4 : Business nature of organisation**

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B							
Grp 1	234		0,341	0,469	0,107	-0,405	0,436
Pr			0,0001	0,0001	0,1012	0,0001	0,0001
Grp 2	356		0,467	0,440	0,081	-0,376	0,471
Pr			0,0001	0,0001	0,1244	0,0001	0,0001
TOT C							
Grp 1				0,638	0,258	-0,315	0,568
Pr				0,0001	0,0001	0,0001	0,0001
Grp 2				0,595	0,122	-0,251	0,634
Pr				0,0001	0,0209	0,0001	0,0001
TOT D							
Grp 1					0,277	-0,431	0,668
Pr					0,0001	0,0001	0,0001
Grp 2					0,167	-0,293	0,690
Pr					0,0016	0,0001	0,0001
TOT F1							
Grp 1						-0,207	0,265
Pr						0,0014	0,0001
Grp 2						-0,008	0,140
Pr						0,8782	0,0082
TOT F2							
Grp 1							-0,388
Pr							0,0001
Grp 2							-0,345
Pr							0,0001

H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > |r|

*VV5 : Career Category : Hard-soft*

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B							
Grp 1	232		0,417	0,470	0,096	-0,415	0,447
Pr			0,0001	0,0001	0,1502	0,0001	0,0001
Grp 2	364		0,467	0,418	0,077	-0,370	0,457
Pr			0,0001	0,0001	0,1410	0,0001	0,0001
TOT C							
Grp 1				0,668	0,257	-0,325	0,635
Pr				0,0001	0,0001	0,0001	0,0001
Grp 2				0,579	0,125	-0,125	0,619
Pr				0,0001	0,0167	0,0001	0,0001
TOT D							
Grp 1					0,270	-0,421	0,679
Pr					0,0001	0,0001	0,0001
Grp 2					0,1621	-0,285	0,676
Pr					0,0019	0,0001	0,0001
TOT F1							
Grp 1						-0,184	0,250
Pr						0,0048	0,0001
Grp 2						-0,003	0,133
Pr						0,9520	0,0111
TOT F2							
Grp 1							-0,418
Pr							0,0001
Grp 2							-0,351
Pr							0,0001

H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > |r|

*VV6 : Size of Organisation*

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B Grp 1 Pr	237		0,327 0,0001	0,476 0,0001	0,085 0,1878	-0,400 0,0001	0,455 0,0001
Grp 2 Pr	362		0,467 0,0001	0,413 0,0001	0,084 0,1092	-0,367 0,0001	0,448 0,0001
TOT C Grp 1 Pr				0,641 0,0001	0,2343 0,0003	-0,314 0,0001	0,588 0,0001
Grp 2 Pr				0,576 0,0001	0,1280 0,0146	-0,240 0,0001	0,619 0,0001
TOT D Grp 1 Pr					0,2724 0,0001	-0,427 0,0001	0,669 0,0001
Grp 2 Pr					0,166 0,0015	-0,275 0,0001	0,675 0,0001
TOT F1 Grp 1 Pr						-0,196 0,0024	0,252 0,0001
Grp 2 Pr						-0,019 0,7128	0,143 0,0063
TOT F2 Grp 1 Pr							-0,395 0,0001
Grp 2 Pr							-0,335 0,0001

H = Type III SS&CP Matrix for total group

Partial correlation coefficients from the error SS&CP Matrix / Prob > | r |

*VV10: Economic sector of organisation*

	DF	TOT B	TOT C	TOT D	TOT F1	TOT F2	TOT G
TOT B							
Grp 1	237		0,363	0,478	0,104	-0,404	0,449
Pr			0,0001	0,0001	0,1074	0,0001	0,0001
Grp 2	359		0,440	0,443	0,100	-0,363	0,469
Pr			0,0001	0,0001	0,556	0,0001	0,0001
TOT C							
Grp 1				0,645	0,245	-0,317	0,585
Pr				0,0001	0,0001	0,0001	0,0001
Grp 2				0,622	0,148	-0,235	0,652
Pr				0,0001	0,0046	0,0001	0,0001
TOT D							
Grp 1					0,277	-0,428	0,678
Pr					0,0001	0,0001	0,0001
Grp 2					0,155	-0,280	0,676
Pr					0,003	0,0001	0,0001
TOT F1							
Grp 1						-0,195	0,255
Pr						0,0024	0,0001
Grp 2						-0,013	0,133
Pr						0,7973	0,0113
TOT F2							
Grp 1							-0,397
Pr							0,0001
Grp 2							-0,336
Pr							0,0001

## APPENDIX 8

### STATISTICS OF STRUCTURAL EQUATIONS ANALYSIS

#### Step 2

##### *Modification of the initial theoretical model*

To create the PRO CALIS program that will estimate revised constrained model 1; it is necessary to make just one small change in the program that had estimated the initial theoretical model. One small change in this stage is the deletion of F4 (Section F1- statements on valuing workforce diversity) due to its very low partial correlation coefficients with all latent variables.

Specifically, the latent-variable equation for F1 in the LINEQS statement has to be modified so that F4 is no longer specified as an independent variable for F1. This can be done easily by making a copy of the original program, and then blanking out the path coefficient name (PF1F4) and the short name (F4) for the alternative's construct.

The latent variable equation for F1 appears in the following way:  $f1 = pf1 f4 f4 + pf1 f6 f6 + d1$  In the PROC CALIS program that estimates revised model 1, the equation takes on the following form; notice that the path coefficient name and the short name for the alternatives construct has been blanked out:  $f1 = pf1 f6 + d1$

##### *Second modification of the initial theoretical model*

In the next modification, all the variables are freed, to be estimated in Mu (unconstrained).

The path given is

$$f1 = pf1 f2 f2 + pf1 f3 f3 + pf1 f4 f4 + pf1 f5 f5 - pf1 f6 f6 + d1$$

### Modification of the measurement model to produce a theoretical model

The path for this model was based on expectations of how diversity was managed in organizations:  $f_5 = pf_5f_1 + f_1 + pf_5f_2 + f_2 + pf_5f_3 + f_3 + pf_5f_4 + f_4 - pf_5f_6 + f_6 + d_5$

The Goodness of fit indices are presented in table 5.1 of chapter 5, where it is reported together with other findings leading to the acceptance of this theoretical model.

Further research to find models with better fit and parsimony can start with the data from the following procedures.

Following on 5.8.2:238, were univariate tests for constant constraints.

Determination of Lagrange multiplier and Wald – test indices: PHI.

(Diagonal matrix).

Determination of Lagrange and Wald – test indices: BETA.

(General matrix. Identity-minus-inverse model matrix).

Rank order of largest Lagrange multipliers in BETA.

A Stepwise multivariate Wald test was done.

**The Wald Test.** Although models may be modified in any of a number of ways (e.g. by placing equality constraints on parameters), they are most frequently modified by either fixing causal paths at zero [e.g. eliminating a non significant path from the model(as in the case of F4)], or freeing causal paths to be estimated (i.e. adding new paths to the model). Of these alternatives, eliminating a non significant path is less likely to capitalize on chance characteristics of the data.

The review should normally begin with the Wald test, as it identifies parameters that may be dropped without causing a significant decrease in model chi-square. Below is the Wald test for the analysis of the theoretical model.



## RANK ORDER OF 10 LARGEST NORMALIZED RESIDUALS

COVARIANCE STRUCTURE ANALYSIS: MAXIMUM LIKELIHOOD ESTIMATION  
STEPWISE MULTIVARIATE WALD TEST FOR THE THEORETICAL MODEL

PARAMETER	CUMULATIVE STATISTICS			UNIVARIATE INCREMENT	
	CHI-SQUARE	D.F.	PROB	CHI-SQUARE	PROB
PF3F2	0.000016074	1	0.9968	0.000016074	0.9968
PF1F4	0.014642	2	0.9927	0.014626	0.9037
PF5F4	0.050000	3	0.9971	0.035358	0.8508
PF5F6	0.091457	4	0.9990	0.041458	0.8387
PF4F2	0.188107	5	0.9992	0.096649	0.7559
PF5F2	0.300672	6	0.9995	0.112565	0.7372
PF1F6	0.927946	7	0.9959	0.627274	0.4284
PF5F3	1.667262	8	0.9896	0.739316	0.3899
VARD5	2.485806	9	0.9813	0.818544	0.3656

The Wald test estimates the change in model chi-square that would result from fixing a given parameter at zero. The first parameter listed in the preceding Wald test results is CF3F2, the covariance between F3 (Diversity-related problems) and F2 (Openness to change), and the third entry in the table is CF5F4, the covariance between F5 (How diversity is managed) and F4 (Diversity that is valued). Covariances are generally estimated for all possible pairs of exogenous F variables in an analysis of this sort (unless there is theoretical reason that they be fixed at zero).

Information from the Wald test and the Lagrange Multiplier test may be used to develop a better-fitting model.

**RANK ORDER OF 10 LARGEST NORMALIZED RESIDUALS**

VARIABLES OF INDEPENDENT VARIABLES

VARIABLES	PARAMETER	ESTIMATE	SE (PARAM)	T-VALUE
V16.V15	VV83.V70	VV94.VV93	VV31,V26	V70.V47
10.711201	-9.124726	8.994821	8.222430	-6715978
VV84.V70	VV84.VV83	VV87.V18	VV31.V15	V47.VV29
-6.227937	5.989821	4.951285	-4.211991	-3.960819
E1	VARE1	0.004511	0.000000	0.000000
E2	VARE2	0.015276	0.000000	0.000000
E3	VARE3	0.021512	0.000000	0.000000
E4	VARE4	0.032133	0.000000	0.000000
E5	VARE5	0.043123	0.000000	0.000000
E6	VARE6	0.054319	0.000000	0.000000
E7	VARE7	0.065785	0.000000	0.000000
E8	VARE8	0.077462	0.000000	0.000000
E9	VARE9	0.089370	0.000000	0.000000
E10	VARE10	0.101546	0.000000	0.000000
E11	VARE11	0.113999	0.000000	0.000000
E12	VARE12	0.126746	0.000000	0.000000
E13	VARE13	0.139797	0.000000	0.000000
E14	VARE14	0.153154	0.000000	0.000000
E15	VARE15	0.166827	0.000000	0.000000
E16	VARE16	0.180817	0.000000	0.000000
E17	VARE17	0.195123	0.000000	0.000000
E18	VARE18	0.209746	0.000000	0.000000
E19	VARE19	0.224687	0.000000	0.000000
E20	VARE20	0.239946	0.000000	0.000000

**VARIANCES OF EXOGENOUS VARIABLES**

<b>VARIABLES</b>	<b>PARAMETER</b>	<b>ESTIMATE</b>	<b>STANDARD ERROR</b>	<b>T VALUE</b>
E1	VARE1	0.383629	0.058165	6.596
E2	VARE2	0.471549	0.058504	8.060
E3	VARE3	0.364513	0.058636	6.217
E4	VARE4	0.418876	0.058958	7.105
E5	VARE5	0.241512	0.059345	4.070
E6	VARE6	0.532151	0.058230	9.139
E7	VARE7	0.745436	0.058134	12.823
E8	VARE8	0.434919	0.058990	7.373
E9	VARE9	0.341888	0.059041	5.791
E10	VARE10	0.727062	0.058383	12.453
E11	VARE11	0.901370	0.058353	15.447
E12	VARE12	1.113668	0.058082	19.174
E13	VARE13	0.700047	0.058498	11.967
E14	VARE14	0.693899	0.058527	11.856
E15	VARE15	0.863865	0.058366	14.801
E16	VARE16	0.551847	0.058427	9.445
E17	VARE17	0.750175	0.058354	12.856
E18	VARE18	0.760020	0.058329	13.030
E19	VARE19	0.779828	0.058308	13.374
E20	VARE20	0.673593	0.058586	11.497

E21	VARE21	0.547784	0.058682	9.335
E22	VARE22	0.942482	0.058230	16.186
E23	VARE23	1.066071	0.058212	18.314
E24	VARE24	0.730241	0.058458	12.492
E25	VARE25	0.907256	0.058132	15.607
E26	VARE26	0.910804	0.058154	15.662
E27	VARE27	0.883925	0.058279	15.167
E28	VARE28	0.785553	0.058516	13.425
E29	VARE29	0.747008	0.058419	12.787
E30	VARE30	0.689023	0.058548	11.768
E31	VARE31	1.157020	0.058184	19.886
E32	VARE2	0.657518	0.058475	11.244
E33	VARE33	0.898208	0.058190	15.436
E34	VARE34	0.667518	0.058603	11.391
E35	VARE35	0.807617	0.058538	13.796
E36	VARE36	0.617779	0.058731	10.519
E37	VARE37	0.506257	0.061996	8.166
E38	VARE38	0.754746	0.058956	12.802
E39	VARE39	0.413997	0.061909	6.687
E40	VARE40	0.460873	0.060020	7.679
E41	VARE41	0.480761	0.061594	7.805
E42	VARE42	0.469912	0.059163	7.943
E43	VARE43	0.26132	0.058296	14.171
E44	VARE44	0.629134	0.058140	10.821

E45	VARE45	0.425805	0.058208	7.315
E46	VARE46	0.549941	0.058244	9.442
E47	VARE47	0.366373	0.058514	6.261
E48	VARE48	0.366273	0.058133	6.301
E49	VARE49	0.559874	0.058132	9.631
E50	VARE50	0.421535	0.058129	7.252
E51	VARE51	0.347449	0.058197	5.970
E52	VARE52	0.579856	0.058091	9.982
E53	VARE53	0.468803	0.058204	8.054
E54	VARE54	0.359084	0.058580	6.130
E55	VARE55	0.514875	0.058216	8.844
E56	VARE56	0.393173	0.058345	6.739
E57	VARE57	0.469265	0.058243	8.057
E58	VARE58	0.333333	0.058441	5.704
E59	VARE59	0.280648	0.058815	4.772
E60	VARE60	0.292417	0.058536	4.995
E61	VARE61	1.217806	0.058837	20.698
E62	VARE62	0.978468	0.058931	16.604
E63	VARE63	0.551707	0.064175	8.597
E64	VARE64	0.430252	0.064282	6.693
E65	VARE65	0.527574	0.060635	8.701
E66	VARE66	0.813679	0.059994	13.563
D1	VARD1	0.359460	4.389309	0.082
D2	VARD2	1.109366	3.975189	0.279

D3	VARD3	0.284291	2.492804	0.114
D4	VARD4	0.447862	0.185807	2.410
D5	VARD5	0.067440	0.087721	0.769
D6	VARD6	0.649160	0.641714	1.012