4. CHAPTER 4 RESULTS

4.1. Introduction

This chapter describes the results of the analyses to find answers to the research questions. Firstly, some preliminary results are presented on the Exploratory Factor Analyses carried out on the responses to the psychometric instruments measuring the constructs included in the study. These were done to determine if the different constructs had the same number and kinds of dimensions, as were originally found by their respective authors. These results may also demonstrate the degree of portability of the scales across different cultures, or, at least, to the sample used in the present study.

Firstly, of particular importance is the Exploratory Factor Analysis results on the three-dimensional leadership behaviour scale which is a precursor to the subsequent Confirmatory Factor and other analyses which were done to answer research question 1.

Secondly, the results of the analysis to find answers to research question 2 are presented. The results of Spearman rho inter-correlations of the factor scale scores to determine the strength of the relationships between the three leadership behaviour dimensions as identified with the CPE model, and the EI of leaders, the visioning ability and OCB of subordinates, are presented. In addition, results of Stepwise Multiple Regression analyses of the respondents' scores on the sub-scales as dependent and the three leadership behaviour dimension scores as independent variables are presented.

Finally, the results of analyses to answer research question 3 are presented. The results of the N-Par One-way Analysis-of-Variance to determine differences in the scores on three leadership behaviour dimensions of different

demographic groups are presented. The values obtained through the calculation of Kruskall-Wallis tests were interpreted for this purpose.

4.2. Exploration of psychometric qualities of measuring instruments.

4.2.1. Three-dimensional Leadership Behaviour instrument

The psychometric qualities of the instrument measuring three-dimensional Leadership Behaviour were described earlier. To answer research question 1, that is, whether the Leadership Behaviour construct exists in the three-dimensional form and whether the questionnaire developed by Ekval and Arvonen (1991) had acceptable psychometric qualities when applied to a South African sample, Exploratory Factor Analysis was carried out on the responses of the sample (N = 879). The Principal Factor Analysis approach was used, as this is the procedure recommended when an attempt is made to determine the number and contents of factors measured by an instrument. An oblique rotation of the axes was utilised as it was thought unlikely that the dimensions measured would be independent from each other. An orthogonal rotation method would, under these circumstances, probably provide a distorted picture of the factor structure underlying the measurements.

It should be remembered that Ekvall and Arvonen (1991, 1994) did not follow the conventional decision rules with regard to the inclusion or exclusion of items in dimensions or factors. It seems as if these authors concluded that items that loaded > 0.50 on any factor should be regarded as part of that factor regardless of its loadings on other factors. This necessitated the development of rules to be used in the present study which are not as rigorous as those used conventionally, but which were less "liberal" than those used by Ekvall and Arvonen (1991, 1994). It should also be noted that Ekvall and Arvonen (1991,

1994) used Varimax, an orthogonal rotation of the axes. They found that these three factors, which they identified, correlated quite highly with each other. It was therefore decided to use oblique rotation of the axes in the present analyses. Only where the direct comparison was to be made, e.g. where the factor loadings of individual items were to be compared, would orthogonal rotation be used.

The BMDP 4 M programme with Direct Quartimin rotation was used to execute the Exploratory Factor Analyses.

In the first round of analysis a four-factor solution was specified as four eigenvalues > 1.0 were obtained. These eigenvalues were respectively 13.314, 3.385, 2.599, and 1.136. The fourth factor contained only two items with loadings > .25. Both these items cross-loaded > .50 on other factors. A Chronbach Alpha could therefore not be calculated for factor four. This solution was therefore not pursued any further. It was decided to extract one as well as three factors during the next round of analysis. The existence of three factors would be in accordance with the findings of the authors of the instrument. When a one-factor solution was specified, all the items, except item V8 loaded > .25 on the factor. This was interpreted to imply that the items all form part of one underlying construct, namely leadership behaviour.

In the three-factor solution, items V12, V21, V18, V29, V35 and V39 loaded > .25 on more than one of the three factors extracted. A rule for exclusion of cross-loading items was developed. It was decided that when the difference between the two highest loadings for any item was < .20, that item would be discarded. Application of this rule led to the decision to leave items V18, V29 and V39 out of further analyses.

A second round of Exploratory Factor Analysis was carried out with a three-factor solution again specified. This resulted in a three-factor solution in which 15

items loaded between .390 and .819 on factor one, 9 items loading between .541 and .846 on factor two and 9 items loading between .539 and .742 on factor three.

The three factors decided upon had Cronbach Alpha coefficients of .919, .901 and .859 respectively. This compares favourably with the Cronbach Alpha coefficients (.75, .85, and .76) obtained by Ekvall and Arvonen (1994) and (.88, .91 and .85) of Arvonen (1995).

The three factors correlated quite highly with each other. Factor one correlated .529 and .303 with factors 2 and 3 respectively. Factor 2 correlated .254 with factor 3. Ekvall and Arvonen (1994), in spite of using a Varimax rotation, also found that the three factors correlated highly with each other (factor one correlated .43 and .23 with factors 2 and 3, while factor two correlated .38 with factor 3).

The three factors respectively explained 35,96%, 8.14% and 6.31% of the total variance. Skogstad and Einarsen (1999) report that the three factors respectively explained 57,1%, 2.8% and 3.5% of the total variance in their study. These findings contradict Ekvall and Arvonen's (1991) finding where the three factors accounted for 34%, 33% and 25% of the total variance respectively. In the Skogstad and Einarsen (1999) study 63,4% of the total variance was explained and the present findings 50,4% of total variance was explained, with both figures numerically substantially lower than the 92% found by Ekvall and Arvonen (1991).

The three-factor structure consisted of factors interpreted as factor 1: employee-centred, factor 2: change-centred, and factor 3: production-centred. The factor pattern is shown in Table 4.1.

Table 4.1 Factor pattern of three dimensional leadership behaviour items in a three factor solution (N = 879)

Item	Factor 1	Factor 2	Factor 3
V37	.819		
V22	.815		
V31	.748		
V10	.725		
V16	.700		
V28	.664		
V13	.641		
V4	.636		
V12	.633		
V5	.607		
V34	.557		
V35	.513		
V25	.505		
V26		.846	
V23		.744	
V38		.706	
V11		.687	
V8		.657	
V14		.654	
V20		.569	
V32		.548	
V17		.541	
V24			.742
V33			.664
V27			.617
V36			.611
V15			.607
V6			.575
V30			.556
V9			.540
V21			.539
V19	.488		
V7	.390		

The three-factor structure in Table 4.1 was used for further analyses in order to answer research questions 2 and 3.

Table 4.2 shows a comparison of the items (indicated by the item numbers in the Ekvall and Arvonen (1991) scale), had their highest loadings on each factor in the three-factor structures for this study and the structures obtained by Ekvall and Arvonen (1991, 1994).

Table 4.2 Item comparisons within factors between this study and structures obtained by Ekvall and Arvon's (1991, 1994) studies

		Employee-centred Behaviour			Change-centred Behaviour			Production-centred Behaviour		
Item No.	V No.	1991*	1994#	This study	1991*	1994#	This study	1991*	1994#	This study
1	V4	.55	.52	.64						
2	V5		.58	.61						
3	V6							.58	.57	.58
4	V7	.53	.53	.39						
5	V8				.57	.52	.69			
6	V9							.51	.53	.54
7	V10	.51	.52	.73						
8	V11				.59	.56	.71			
9	V12			.63					.51	
10	V13			.64						
11	V14				.58	.54	.66			
12	V15							.57	.56	.61
13	V16	.60	.55	.70						
14	V17				.55	.56	.55			
15	V18									
16	V19			.49						
17	V20				.74	.69	.65			
18	V21							.52	.54	.54
19	V22	.69	.62	.82						

Table 4.2 Item comparisons within factors between this study and structures obtained by Ekvall and Arvon's (1991, 1994) studies - Continued.

		Employee-centred Behaviour			Change-centred Behaviour			Production-centred Behaviour		
Item No.	V No.	1991*	1994#	This study	1991*	1994#	This study	1991*	1994#	This study
20	V23				.73	.67	.74			
21	V24						.54	.62		
22	V25	.53	.56	.51						
23	V26				.67	.65	.85			
24	V27							.55	.57	.62
25	V28	.63	.59	.66						
26	V29				.57	.52				
27	V30							.60	.60	.56
28	V31	.63	.64	.75						
29	V32				.60	.52	.57			
30	V33							.69	.69	.74
31	V34	.50	.55	.56						
32	V35	.57	.52	.52						
33	V36							.62	.61	.61
34	V37	.75	.73	.82	.74	.71				
35	V38									
36	V39						.53			

Note: * Designates Ekvall & Arvonen's (1991) results.
Designates Ekvall & Arvonen's (1994) results.

Item by item comparisons of factor loadings between this study's structure and those of Ekvall and Arvon's (1991, 1994) show that there appear to be quite some similarity in the factor loading patterns over the three studies. Further

analyses on the structure of the instrument will be reported under section 4.3.1 where answers to research question one are presented.

4.2.2. Visioning ability scale

Visioning ability was, as indicated in Chapter 3, measured by means of a 12-item questionnaire developed by Thoms and Blasko (1999).

The responses to the items of the instrument of the total sample (N=879) were analysed by means of Exploratory Factor Analysis using the Principal Factor method. In the first round of the analysis of the responses a preliminary Scree Test was carried out by means of the BMDP 4 M programme with Direct Quartimin Rotation. This indicated that two eigenvalues > 1.00 existed i.e. 5.67, and 1.27. A clear "break" was apparently present between the first and second largest eigenvalues.

A two-factor, as well as a one-factor solution was therefore specified. In the two-factor solution 8 items had a loading of > 0.25 on factor one. Two items had loadings of > 0.25 on factor 2. No items were cross loading on the two factors. Of the 8 items loading on only factor one had a Cronbach Alpha coefficient of .878 and the 2 items belonging to factor 2 had a Cronbach Alpha of .798. If the 10 items without cross-loadings were taken to represent a single scale a Cronbach Alpha Coefficient of .883 was obtained. This indicated that the items' scores were probably quite highly related to each other and possibly formed part of the same facet.

Because the second factor in the two-factor solution contained only two items this solution was discarded as inadequate. In the one-factor solution, which was subsequently specified, all 12 items of the questionnaire loaded > 0.25 on the one factor extracted. No item was therefore discarded. The items in the one-

factor solution had a Cronbach Alpha of .897. The one-factor solution explained 42.58% of the total variance. The existence of one factor would be in accordance with the findings of the authors of the instrument. The factor pattern for the one factor solution is shown in Table 4.3.

Table 4.3 Factor pattern for one factor solution of responses to visioning ability items (N = 879)

Item	Loading
V95	.786
V92	.733
V89	.727
V98	.674
V97	.662
V90	.642
V91	.637
V94	.635
V93	.599
V87	.576
V88	.560
V96	.554

In the Thoms and Blasko (1999) study 42,55 % of the total variance was explained (42.58% for this sample). The Cronbach Alpha, internal reliably coefficients ranged between .86 and .87 (.897 for this sample). It would therefore seem that the visioning ability scale is portable to a South African context, or at least to this sample, because the factor structure for this sample is almost identical to the one found by Thoms and Blasko (1999).

4.2.3. Emotional Intelligence Scale

The psychometric qualities of the instrument measuring emotional intelligence are described in Chapter 3. To determine whether the emotional

intelligence construct exists in a five-dimensional form, and whether the questionnaire developed by Rahim and Minors (personal communication, April, 2001) had acceptable construct validity and other psychometric qualities when applied to a South African sample, Exploratory Factor Analysis was carried out on the responses of the total sample (N = 879) to the items in the questionnaire. The analysis was specified and executed by means of the BMDP 4 M programme with Direct Quartimin Rotation.

In the first round of Factor Analysis five eigenvalues > 1.0 were obtained. These eigenvalues were respectively 18.286, 3.353, 1.940, 1.484 and 1.149. A five-factor solution was specified during this round.

The fifth factor obtained contained only one item with a loading > .50. It was therefore decided to discard the five-factor solution. In the next phase of analysis a four-factor solution was specified. In this four-factor solution, items V49, V50, V51, V56, V67, V71, V72, V77, V78, V79, V80, V81, V82 and V83 loaded > .25 on more than one of the four factors extracted. It was decided that an item would be discarded when the difference between the two highest cross-loadings for any item was < .20. This rule led to the decision to leave items V49, V50, V51, V56, V71, V72, V77, V80 and V83 out of further analyses.

A second round of Exploratory Factor Analysis was carried out with a four-factor solution again specified. This resulted in a four-factor solution in which 9 items loaded between .523 and .884 on factor one, 7 items loading on factor two between .539 and .844 and 5 items loading on factor three between .553 and .907 with 5 items that loaded on factor four between .541 and .840. The existence of a four-factor structure based on the responses of the present sample is not in accordance with the findings of the authors of the instrument, who apparently found five factors.

The four factors had Cronbach Alpha coefficients of .929, .925, .932 and .843 respectively. The four factors correlated quite highly with each other. Factor one correlated .430, .500 and .498 with factors 2, 3 and 4 respectively. Factor 2 correlated .588 and .586 with factor 3 and 4 respectively. Factor 3 correlated .620 with factor 4. The four factors respectively explained 44.17%, 9.27%, 4.67% and 3.12% of the total variance, and 72.14%, 15.14%, 7.64% and 5.09% of the common variance. The four-factor structure consisted of factors interpreted as factor 1: self-motivation, factor 2: self-regulation, factor 3: empathy and factor 4: self-awareness. The fifth factor, social skills, was not found for the sample in this study. The factor pattern is shown in Table 4.4.

Table 4.4 Factor pattern for four-factor solution of responses to emotional intelligence items (N = 879)

Item	Factor 1	Factor 2	Factor 3	Factor 4
V63	.884			
V60	.853			
V66	.846			
V65	.833			
V64	.797			
V62	.763			
V61	.587			
V67	.552			
V81	.520			
V58		.844		
V55		.836		
V53		.825		
V59		.797		
V52		.781		
V54		.698		
V79		.539		
V69			.907	
V68			.846	
V70			.832	
V75			.618	
V74			.553	
V45				.840
V44				.764
V48				.617
V47				.568
V46				.541
V76		.419		
V78		.496		
V73			.458	
V57	.419			
V82	.410			

4.2.4. Organisational Citizenship Behaviour Scale

Organisational citizenship behaviour was, as indicated in Chapter 3, measured by means of a 34 item questionnaire developed by Van Dyne, Graham and Dienesch (1994).

To determine whether the OCB construct exists in the five-dimensional form, and whether the questionnaire developed by Van Dyne, Graham and Dienesch (1994) had acceptable psychometric qualities when applied to a South African sample, Exploratory Factor Analysis using the Principal Factor method was carried out on the responses of the total sample (N = 879) to the items in the questionnaire.

In the first round of analysis five eigenvalues > 1.0 were obtained and a five-factor solution specified. These eigenvalues were respectively 6.565, 2.255, 1.998, 1.754 and 1.308. In this solution the fourth and fifth factors each contained only two items with a loading > .25. Items V111, V112, V132, V113, V99 and V108 did not load satisfactorily (> .25) on any factor extracted. No items cross-loaded > .25 on more than one factor. The five factors explained only 32.19% of the total variance. The five factors had Cronbach Alpha coefficients of .772, .790, .689, .782, and .645 respectively. Two of the Cronbach Alphas were < .7.

It was therefore decided to extract three factors in another round of analysis. In the three-factor solution obtained, only item V126 did not load > .25 on any one of the factors extracted. The following rule for exclusion of cross-loading items was again applied: an item would be discarded if the difference between the two highest cross-loadings for that item was < .20. However, no item cross-loaded on more than one factor. The three factors explained only 29.3% of the total variance. The three factors had Cronbach Alpha coefficients of .772, .790 and .689 respectively. One of the Cronbach Alphas was < 0.7.

A final round of Exploratory Factor Analysis was therefore carried out with a two-factor solution specified. This resulted in a two-factor solution in which 21 items loaded between .594 and .290 on factor one, with 7 items loading on factor two between .655 and .409. Items V99, V102, V112, V128, V129 and V130 did not load on any of the factors extracted in the final round. The existence of two factors for this sample in the current study is not in accordance with the findings of the authors of the instrument, who found five factors.

The two factors had Cronbach Alpha coefficients of .832 and .790 respectively. The two factors correlated quite highly with one another. Factor one correlated .434 with factor 2. The two factors respectively explained 18.9% and 5.42% of the total variance, and 77.7% and 22.3% of the common variance.

The two factor structure consisted of factors interpreted as factor 1: loyal participation, and factor 2: obedience. The factor pattern is shown in Table 4.5.

Table 4.5 Factor pattern for two-factor solution of responses to organisational citizenship behaviour items (N = 879)

Item	Factor 1	Factor 2
V107	.594	
V100	.560	
V101	.553	
V103	.538	
V105	.538	
V124		.655
V122		.633
V123		.622
V121		.605
V120		.564
V125		.556
V127		.409
V118	.323	
V117	.297	
V108	.289	
V110	.409	
V111	.335	
V126	.403	
V116	.421	
V104	.441	
V119	.252	
V132	.312	
V113	.358	
V115	.364	
V106	.465	
V109	.450	
V114	.475	
V131	.290	

The portability of the scale developed by Van Dyne, Graham and Dienesch (1994) to a South African context seems to be highly suspect due to the fact that

the same five-factor structure could not be replicated for this sample. Rather, a two-factor structure was found. Due to the fact that the obtained two-factor structure seems to represent the OCB of the sample, the factor structure as represented in Table 4.5 was used for further analyses in order to answer research questions 2 and 3.

4.3. Results of analyses with regard to research questions

4.3.1. Research Question 1

In order to answer research question 1, that is, whether in leadership behaviour exist in a three dimensional form as identified by the CPE model in a sample of South African managers, Exploratory Factor Analysis was done on the sample first. For the full explanation of the Exploratory Factor Analysis results refer to 4.2.1. A similar three-factor structure like those found by Ekvall and Arvonen (1991, 1994), Arvonen (1995) and Skogstad and Einarson (1999) was obtained for this study. Secondly, Confirmatory Factor Analysis was carried out on the three-factor structure obtained by Exploratory Factor Analysis. The results of the Confirmatory Factor Analysis are explained below.

4.3.1.1. Proposition 1.1:

In order to test proposition 1.1 (that is, whether measurements included in the CPE scale of Ekvall (1991) is fully transportable to a South African cultural setting two statistical methods were employed. The first statistical method involves the matching of structures for similarity by means of Confirmatory Factor Analysis (Gorsuch, 1983, p 285). Firstly, Confirmatory Factor Analysis using the SAS Proc Callis procedure was done on the three-factor structure obtained by Exploratory Factor Analysis on the responses of the respondents in the present study. Secondly, the item loadings obtained by Ekvall and Arvonen (1991, 1994) were

used to carry out Confirmatory Factor Analysis on the responses of the sample (N = 879) in the present study. The CFA indices obtained from these analyses were then compared. The results of these analyses yielded the indices shown in Table 4.6.

Table 4.6 Results of Confirmatory Factor Analyses of the three-factor structure of the leadership behaviour questionnaire for this study and compared to studies done by Ekvall and Arvonen (1991, 1994)

Indices	This study (N = 879)	Ekvall & Arvonen (1991) (N = 711)	Ekvall & Arvonen (1994) (N = 3857)
Fit criterion	3.5712	4.2272	3.7646
Goodness of fit index (GFI)	.8022	.7813	.8046
GFI adjusted for degrees of freedom (AGFI)	.7739	.7512	.7766
Root Mean Square Residual (RMR)	.2396	.2441	.2555
Parsimonious GFI (Mulaik, 1989)	.7487	.7309	.7509
Chi-square	3135	3711	3305
Chi-square df	434	464	434
Pr > Chi-square	<0.0001	<0.0001	<0.0001
Independence model chi-square	14835	15646	15232
Independence model chi-square df	465	496	465
RMSEA estimate	.0842	.0893	.0868
RMSEA 90% lower confidence limit	.0814	.0866	.0841
RMSEA 90% upper confidence limit	.0870	.0920	.0896
ECVI estimate	3.7178	4.3787	3.9111
ECVI 90% lower confidence limit	3.5163	4.1581	3.7037
ECVI 90% upper confidence limit	3.9281	4.6082	4.1274
Bentler's comparative fit index	.8120	.7856	.8056
Normal theory reweighted LS chi-square	3365	3931	3305
Akaike's information criterion	2267	2783	2437
Bozdogan's (1987) CAIC	-240	102	-70
Schwartz's Bayesian criterion	.193.5	566	363

McDonald's (1989) centrality	.2151	.1577	.1953
Bentler and Bonnett's (1980) Non-normed index	.7986	.7709	.7917
Bentler and Bonnett's (1980) NFI	.7886	.7628	.7830
James, Mulaik & Brett (1982) parsimonious NFI	.7361	.7136	.7308
Z-test of Wilson & Hilferty (1931)	41.26	45.71	42.78
Bollen (1986) Normed Index RHO1	.7735	.7464	.7675
Bollen (1988) Non-normed index delta2	.8124	.7861	.8060
Hoelter's (1983) critical n	137	123	130

The indices shown in Table 4.6 reflect a promising fit between the data obtained and the three-factor structure for this study. Secondly, the CFA fit indices for the three structures are very close to each other, indicating that the structures are very similar to one another.

The second statistical method employed for testing proposition 1.1 was the calculation of the Coefficient of Congruence (Gorsuch, 1983, p285). Coefficients of Congruence are calculated between the loadings obtained from the three studies on each of the three factors (dimensions) measured by the instrument. The Coefficients of Congruence are shown in Table 4.7.

Table 4.7 Coefficients of Congruence compared for the three-factor leadership behaviour structures (N = 879)

Change-centerd leadership behaviour			
	Ekvall & Arvonen (1991)	Ekvall & Arvonen (1994)	Current study
Ekvall & Arvonen (1991)	1.0		
Ekvall & Arvonen (1994)	.9888	1.0	
Current study	.9242	.9253	1.0
Employee centred leadership behaviour			
	Ekvall & Arvonen (1991)	Ekvall & Arvonen (1994)	Current study
Ekvall & Arvonen (1991)	1.0		
Ekvall & Arvonen (1994)	.9888	1.0	
Current study	.9679	.9488	1.0
Production-centred leadership behaviour			
	Ekvall & Arvonen (1991)	Ekvall & Arvonen (1994)	Current study
Ekvall & Arvonen (1991)	1.0		
Ekvall & Arvonen (1994)	.9600	1.0	
Current study	.9493	.9197	1.0

From Table 4.7 it is evident that there is very high congruence between these three factor structures.

4.3.1.2. Proposition 1.2

In order to test Proposition 1.2, whether different leadership style groupings exists, where each grouping can be identified with a distinctive combination of the three behavioural dimensions, Cluster Analysis using the SAS Fastclus procedure was carried out on responses of the current study to the Ekvall and Arvonen (1991) scale.

In order to replicate the findings of Ekvall and Arvonen (1994) a ten-cluster structure was decided upon. The same cluster selection criteria as employed by Ekvall and Arvonen (1994) were used. The 10 profiles, corresponding to the clusters, with their mean values are presented in Table 4.8.

Table 4.8 Clusters of leadership profiles, mean values (scale 1 - 4), number and percentage (N = 879)

Cluster	Profile	Leadership style variable				
		Change Oriented	Relations Oriented	Structure Oriented		
		M	M	M	N	% of sample
1	Laissez-faire	1.98	1.70	1.64	29	3.30
2	Bureaucrat	2.04	1.95	2.66	23	2.62
3	Nice Guy	1.67	2.14	1.42	18	2.05
4	Creative	3.26	2.47	1.98	49	5.57
5	Middle-of-the-road	2.11	2.63	2.28	79	8.99
6	Manage-by-objectives	3.14	2.64	2.90	77	8.76
7	Transformational	2.79	3.07	1.89	83	9.44
8	Humanist	2.86	3.30	2.72	184	20.93
9	Charismatic	3.55	3.45	2.41	180	20.48
10	Super	3.62	3.67	3.14	157	17.86

Of the ten clusters, seven were found to be similar to the clusters Ekvall and Arvonen (1994) found and six were found to be similar to the clusters Arvonen (1995) found in their studies and were named accordingly. A comparison between this study and Ekvall and Arvonen's (1994) and Arvonen's (1995) studies' mean scores indicate that the entrepreneurial and transactional leader profiles do not feature in the present sample. Instead, an additional profile is identified, profile 9, named 'Charismatic' leaders. These are leaders with high mean scores on the change-oriented and relations-oriented leader behaviour dimensions, but relatively

lower mean scores on the structure-oriented leadership behaviour dimension. This cluster of leaders seems to focus their attention more on change and people issues and less on tasks or production.

From the cluster analysis results it seems that most leaders belong to the Humanist (20.93%), Charismatic (20,48%) and Super leader (17.86%) clusters. Of the less desirable leadership style groupings, only 3.30% of leaders in this sample belong to the Laissez-faire, Bureaucrat (2.62%) and Nice Guy (2.05%) clusters.

4.3.2. Research Question 2

In order to investigate the relationships between the three leadership behaviour styles as identified with the CPE model and EI of managers, as well as the visioning ability and organisational citizenship behaviour of subordinates, the following procedures were followed:

- Correlation coefficients between the scale and sub-scale scores of the four constructs were calculated by means of Spearman rho; and
- Step-wise Multiple Regression were carried out with scale and sub-scale scores as dependent variables and the three-dimensional leadership behaviour scores as independent (predictor) variables.

The coefficients of determination (100 x r^2) derived from the correlation Spearman Rho coefficients are shown in Table 4.9. (Coefficients of determination indicate the percentage common variance between the different variables correlating with each other.)

Table 4.9. Results from Spearman Coefficients of Determination of factor variables (N = 879)

	L1 Employee Centered	L2 Change Centered	L3 Production Centered	Visioning Ability	OCB1 Loyal Participation	OCB2 Obedience	OCB Total	EI1 Motivation	EI2 Self-Regulation	EI3 Empathy	EI4 Self-Awareness	EI Total
L1 - Employee-Centered	100.0											
L2 - Change-Centered	34.2	100.0										
L3 - Production-Centered	18.3	13.7	100.0									
Visioning Ability	3.2	4.2	2.7	100.0								
OCB1 - Loyal Participation	6.0	7.2	4.2	25.0	100.0							
OCB2 - Obedience	1.5	0.7	7.2	7.0	22.0	100.0						
OCB -Total	5.2	5.6	7.1	22.8	87.8	53.3	100.0					
EI1 - Self-motivation	34.0	62.4	19.6	5.9	8.3	2.5	7.9	100.0				
EI2 - Self-regulation	40.6	13.6	10.4	1.8	2.9	1.1	3.0	27.0	100.0			
EI3 - Empathy	56.1	23.3	11.2	2.9	6.1	1.6	5.3	34.2	46.6	100.0		
EI4 - Self-awareness	30.7	17.6	11.2	3.5	7.3	2.3	7.0	27.2	37.0	44.0	100.0	
EI - Total	57.2	40.8	19.0	4.7	8.1	2.3	7.6	66.6	72.1	74.3	59.8	100.0

Note: All Correlations are at $p < .0001$

These relationships are interpreted in terms of the conceptual significance as all the correlations are statistically significant due to the large N.

Less that 5% is seen as a low conceptual correlation

6 - 10% is seen as a useful conceptual correlation

11 - 15% is seen as a moderate conceptual correlation

16 – 25% is seen as a high conceptual correlation

> 26 % is seen as a very high conceptual correlation

From table 4.9 it can be seen that of the correlations calculated between the sub-scale scores for leadership behaviour, 6 correlations with the emotional intelligence sub-scales were conceptually significant at the 95% confidence level ($p < 0001$). The common variances varied between 10.4% and 62.4%.

The employee-centred leadership behaviour sub-scale is conceptually significantly related to all four of the emotional Intelligence sub-scales for the leader. The common variances were conceptually very high, varying between 30.7% and 56.1%.

The change-centred leadership behaviour sub-scale is conceptually significantly related to the motivation and empathy sub-scales of the leader EI. The common variances are high to very high, 23.3% and 62.4% respectively.

The total scores on the emotional Intelligence questionnaire are conceptually significantly related at the 95% confidence level to the three leadership behaviour sub-scales. The common variances vary between high and very high, varying between 19.0% and 57.2%.

The leadership behaviour sub-scales do not illustrate conceptually significant relations to the visioning ability scale for subordinates, or to the self-reported OCB sub-scales measured for sub-ordinates.

The visioning ability scale showes a significant relationship at the 95% confidence level with the loyal participation OCB sub-scale for sub-ordinates. The common variance explained was 25%.

To further analyse the relationship between the factors of the three-dimensional leadership behaviour construct as independent variables and the sub-scales of the other constructs as dependent variables, a Stepwise Multiple Regression Analysis was done. Kaplan (1990, p. 282) explains the meaning of each column in Table 4.10 depicting the stepwise regression analysis results as follows:

Variable: The first column lists the independent variable entered into the Multiple Regression Model at each stage.

Dependent variable: The second column lists the different dependent variables.

Partial R^2 : This column records each independent variable's unique contribution to the model. That is the degree of common variance between the particular independent variable and the dependent variable after controlling for variance that has already been accounted for by independent variables entered into the equation at earlier steps.

Model R^2: This shows the combined strength of the independent variables' "prediction" of the dependent variable. It is the variation in the dependent variable that is attributed to variation in the independent variables in the model.

C_p: The Cp statistic at each step is recorded in the next column. It denotes a good fit where the value of Cp first approaches the number of variables in the model, including the intercept (this number is represented by the letter p).

F: The F value is the ratio of the regression mean square to the error mean square, and indicates the strength of the prediction level when the independent

variable is entered in each step and the prediction level without that independent variable.

Prop > F: The final column gives an indication of the significance of the growth in R^2 calculated at each step. It is an estimate of the probability of a larger F value occurring by change.

A summary of the step-wise procedure for the total sample (N = 879) is given in Table 4.10.

Table 4.10 Summary of Stepwise Multiple Regression Analysis of Three-dimensional Leadership Behaviour as independent variables on various dependent variables (N = 879)

Leadership Variable	Dependent variable	Partial R^2	Model R^2	C_p:	F	Prop > F
	Visioning Ability					
L2		0.040	.040	11.27	36.51	<.0001
L3		.010	.050	3.50	9.76	0.0018
	OCB 1 Loyal Participation					
L2		.064	.064	19.84	59.98	<.0001
L1		.015	.079	7.62	14.14	.0002
L3		.006	.085	4.00	5.62	.0179
	OCB 2 Obedience					
L3		.069	.069	1.407	64.85	<.0001
	OCB Total					
L3		.0645	.0645	21.14	60.42	<.0001
L2		.0190	.0834	4.99	18.11	<.0001
	EI 1 – Self-motivation					
L2		.662	.662	102.02	1716.01	<.0001
L3		.024	.685	36.14	65.40	<.0001
L1		.012	.697	4.00	34.14	<.0001

Table 4.10. Summary of Stepwise Multiple Regression Analysis of Three-dimensional Leadership Behaviour as independent variables on various dependent variables (N = 879). Continued.

Leadership Variable	Dependent variable	Partial R^2	Model R^2	C_p:	F	Prop > F
	EI 2 - Self-regulation					
L1		.430	.430	7.46	656.78	<.0001
L3		.004	.432	3.15	6.31	.0122
	EI 3 - Empathy					
L1		.587	.587	4.912	1244.09	<.0001
L2		.002	.589	2.159	4.76	.0294
	EI 4 - Self-awareness					
L1		.322	.322	23.062	416.44	<.0001
L3		.011	.333	10.463	14.48	.0002
L2		.006	.339	4.000	8.46	.0037
	EI 4 - Total					
L1		.606	.606	167.81	1346.23	<.0001
L2		.057	.662	20.26	146.65	<.0001
L3		.007	.669	4.00	18.27	<.0001

From Table 4.10 it can be seen that the scores on the emotional intelligence sub-scales and the total emotional intelligence scale were predicted to a substantial degree by means of the leadership behaviour sub-scales as

independent variables included in the multiple regression model. The motivation, self-regulation, empathy and self-awareness sub-scales were predicted, 69.7%, 43,2%, 58,9% and 33,9% by the three leadership behaviour scales. Total leader emotional intelligence was predicted 66,9% by leadership behaviour.

The predictions of the visioning ability and OCB of subordinates scales and sub-scales did not reach 10% common variance in any case.

4.3.3. Research Question 3

Finally, in order to answer research question 3, that is, to determine whether differences in the three leadership behaviour dimension scores existed among different demographic groupings the non-parametric N-par one-way Analysis-of-variance procedure in SAS was applied. Results from the Kruskal Wallis test were interpreted.

The results of the N-par one-way Analysis-of-variance and Kruskal Wallis tests are presented in Tables 4.11 to 4.26.

Table 4.11 Relationship between Leaders' age and their leadership behaviour (N = 879)

Leader's Age group	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
51-55	161	475.5	Chi-square	8.775
27-30	16	464.0	Df	6
46-50	197	424.9	Pr > Chi-square	0.187
36-40	169	423.6		
31-35	56	417.4		
41-45	190	408.3		
> 55	67	396.4		
Variable: Change-Centred Leader behaviour				
27-30	16	492.6	Chi-square	8.357
31-35	56	462.2	Df	6
41-45	190	458.8	Pr > Chi-square	0.213
46-50	197	423.2		
36-40	169	420.7		
51-55	161	405.9		
> 55	67	388.3		
Variable: Production-Centred Leader behaviour				
27-30	16	535.1	Chi-square	12.287
31-35	56	433.3	Df	6
51-55	161	432.2	Pr > Chi-square	0.056
> 55	67	432.2		
46-50	197	421.0		
36-40	169	408.2		
41-45	190	402.8		

Table 4.12 Relationship between Respondents' age and of their assessment of their leaders' leadership behaviour (N = 879)

Respondent's Age group	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
27 - 30	92	466.1	Chi-square	2.153
41 - 45	180	448.9	Df	6
> 55	59	445.9	Pr > Chi-square	.905
36 - 40	143	439.6		
51 - 55	100	437.1		
31- 35	144	431.8		
46 - 50	161	422.5		
Variable: Change-Centred Leader behaviour				
> 55	59	471.5	Chi-square	8.467
51 - 55	100	470.1	Df	6
41 - 45	180	459.4	Pr > Chi-square	.206
36 - 40	143	444.5		
46 - 50	161	438.3		
31- 35	144	404.4		
27 - 30	92	400.8		
Variable: Production-Centred Leader behaviour				
46 - 50	161	474.1	Chi-square	12.864
51 - 55	100	469.9	Df	6
41 - 45	180	451.8	Pr > Chi-square	.045
> 55	59	444.4		
36 - 40	143	433.4		
27 - 30	92	423.8		
31- 35	144	381.5		

Table 4.13 Relationship between Leaders' gender and their leadership behaviour (N = 879)

Leaders' gender	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Male	848	441.6	Chi-square	1.015
Female	31	394.9	Df	1
			Pr > Chi-square	.314
Variable: Change-Centred Leader behaviour				
Male	848	440.8	Chi-square	.217
Female	31	419.2	Df	1
			Pr > Chi-square	.642
Variable: Production-Centred Leader behaviour				
Male	848	440.8	Chi-square	.294
Female	31	415.8	Df	1
			Pr > Chi-square	.588

Table 4.14 Relationship between Respondents' Gender and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's gender	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Male	813	441.1	Chi-square	.788
Female	64	411.9	Df	1
			Pr > Chi-square	.375
Variable: Change-Centred Leader behaviour				
Male	813	440.7	Chi-square	.528
Female	64	417.0	Df	1
			Pr > Chi-square	.468
Variable: Production-Centred Leader behaviour				
Male	813	444.8	Chi-square	5.794
Female	64	365.8	Df	1
			Pr > Chi-square	.016

Table 4.15 Relationship between Leaders' Race groups and their observed leadership behaviour (N = 879)

Leader's Race group	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Black	26	477.6	**Chi-square**	.612
Asian, Coloured and Other	21	442.4	**Df**	2
White	831	438.3	**Pr > Chi-square**	.736
Variable: Change-Centred Leader behaviour				
White	831	440.4	**Chi-square**	.240
Black	26	429.9	**Df**	2
Asian, Coloured and Other	21	415.2	**Pr > Chi-square**	.887
Variable: Production-Centred Leader behaviour				
Asian, Coloured and Other	21	468.6	**Chi-square**	1.608
White	831	440.5	**Df**	2
Black	26	382.6	**Pr > Chi-square**	.448

Table 4.16 Relationship between Respondents' Race groups and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's Race group	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
White	805	445.4	**Chi-square**	5.878
Asian, Coloured and Other	33	398.2	**Df**	2
Black	40	343.9	**Pr > Chi-square**	.053
Variable: Change-Centred Leader behaviour				
White	805	444.7	**Chi-square**	6.453
Asian, Coloured and Other	33	432.7	**Df**	2
Black	40	340.7	**Pr > Chi-square**	.0397
Variable: Production-Centred Leader behaviour				
White	805	441.0	**Chi-square**	.465
Black	40	433.0	**Df**	2
Asian, Coloured and Other	33	411.2	**Pr > Chi-square**	.793

Table 4.17 Relationship between Leaders' Hierarchical level and their observed leadership behaviour (N = 879)

Leader's Hierarchical Level	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Level 4	156	473.8	Chi-square	7.090
Level 1	73	466.7	Df	4
Level 5	118	428.1	Pr > Chi-square	.131
Level 3	227	424.2		
Level 2	294	416.1		
Variable: Change-Centred Leader behaviour				
Level 3	227	473.2	Chi-square	12.218
Level 1	73	455.8	Df	4
Level 4	156	446.9	Pr > Chi-square	.016
Level 5	118	405.7		
Level 2	294	402.0		
Variable: Production-Centred Leader behaviour				
Level 4	156	454.3	Chi-square	6.657
Level 2	294	452.1	Df	4
Level 5	118	440.2	Pr > Chi-square	.155
Level 3	227	424.5		
Level 1	73	371.8		

Table 4.18 Relationship between Respondents' Hierarchical level and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's Hierarchical level	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Level 3	79	520.0	Chi-square	10.120
Level 4	247	438.4	Df	4
Level 6	21	426.1	Pr > Chi-square	.037
Level 5	512	423.8		
Level 2	13	410.0		
Variable: Change-Centred Leader behaviour				
Level 3	247	483.2	Chi-square	10.155
Level 2	512	481.1	Df	4
Level 4	79	465.2	Pr > Chi-square	.038
Level 5	21	415.2		
Level 6	13	415.1		
Variable: Production-Centred Leader behaviour				
Level 6	13	473.1	Chi-square	3.327
Level 3	247	456.2	Df	4
Level 5	21	437.6	Pr > Chi-square	.505
Level 4	79	430.3		
Level 2	512	332.3		

Table 4.19 Relationship between Leaders' Level of Education and their leadership behaviour (N = 879)

Leader's Level of Education	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Honours degree or equiv.	156	473.8	**Chi-square**	7.090
Doctoral Degree or Equiv.	73	466.7	**Df**	4
Secondary School/ St10/Sertificate/Diploma	118	428.1	**Pr > Chi-square**	.1312
Masters Degree or equiv.	227	424.2		
Bachelor's degree or equiv.	294	416.1		
Variable: Change-Centred Leader behaviour				
Masters Degree or equiv.	227	473.2	**Chi-square**	12.218
Doctoral Degree or equiv.	73	455.8	**Df**	4
Honours degree or equiv.	156	446.9	**Pr > Chi-square**	.016
Bachelor's degree or equiv.	294	405.7		
Secondary School/ St10/Sertificate/Diploma	118	402.1		
Variable: Production-Centred Leader behaviour				
Honours degree or equiv.	156	454.3	**Chi-square**	6.657
Secondary School/ St10/Sertificate/Diploma	118	452.1	**Df**	4
Bachelor's degree or equiv.	294	440.2	**Pr > Chi-square**	.155
Masters Degree or equiv.	227	424.5		
Doctoral Degree or Equiv.	73	371.8		

Table 4.20 Relationship between Respondents' level of education and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's level of education	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Secondary School or St10	25	473.0	**Chi-square**	1.180
Bachelor's degree or equiv.	250	448.9	**Df**	5
Doctoral Degree or Equiv.	39	447.3	**Pr > Chi-square**	.947
Honours degree or equiv.	164	439.3		
Masters Degree or equiv.	214	432.9		
Certificate or Diploma	187	430.7		
Variable: Change-Centred Leader behaviour				
Secondary School or St10	25	516.1	**Chi-square**	2.543
Bachelor's degree or equiv.	250	442.9	**Df**	5
Honours degree or equiv.	164	440.2	**Pr > Chi-square**	.770
Certificate or Diploma	187	435.3		
Doctoral Degree or Equiv.	39	434.1		
Masters Degree or equiv.	214	432.8		
Variable: Production-Centred Leader behaviour				
Secondary School or St10	25	601.1	**Chi-square**	44.421
Certificate or Diploma	187	509.1	**Df**	5
Bachelor's degree or equiv.	250	452.0	**Pr > Chi-square**	<.0001
Honours degree or equiv.	164	424.3		
Doctoral Degree or Equiv.	39	400.2		
Masters Degree or equiv.	214	366.0		

Table 4.21 Relationship between Leaders' number of direct subordinates and their observed leadership behaviour (N = 879)

Leader's number of direct subordinates	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
16 – 20	51	488.7	Chi-square	4.522
11 – 15	104	469.1	Df	4
1 – 5	259	430.5	Pr > Chi-square	.340
6 – 10	415	429.1		
21 +	45	423.8		
Variable: Change-Centred Leader behaviour				
16 – 20	51	488.9	Chi-square	9.385
11 – 15	104	488.6	Df	4
6 – 10	415	436.7	Pr > Chi-square	.052
21 +	45	415.1		
1 – 5	259	412.1		
Variable: Production-Centred Leader behaviour				
21 +	45	459.3	Chi-square	3.480
11 – 15	104	449.6	Df	4
6 – 10	415	447.2	Pr > Chi-square	.481
1 – 5	259	420.7		
16 – 20	51	400.0		

Table 4.22 Relationship between Respondents' number of direct subordinates and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's number of direct subordinates	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
6 - 99	245	469.7	Chi-square	6.062
4 - 5	183	439.3	Df	3
0	248	434.7	Pr > Chi-square	.109
1 - 3	203	411.3		
Variable: Change-Centred Leader behaviour				
6 - 99	245	478.3	Chi-square	10.121
4 - 5	183	444.9	Df	3
0	248	427.0	Pr > Chi-square	.018
1 - 3	203	405.3		
Variable: Production-Centred Leader behaviour				
6 - 99	245	479.0	Chi-square	11.491
4 - 5	183	454.1	Df	3
0	248	414.7	Pr > Chi-square	.0093
1 - 3	203	411.1		

Table 4.23 Relationship between Leaders' number of people they are directly and indirectly responsible for and their observed leadership behaviour (N = 879)

Leader's number of people directly and indirectly responsible for.	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
1 -13	220	446.8	Chi-square	.974
51 - 198	200	439.7	Df	3
199 +	225	438.2	Pr > Chi-square	.808
14 - 50	228	423.9		
Variable: Change-Centred Leader behaviour				
199 +	228	472.2	Chi-square	10.016
51 - 198	200	453.3	Df	3
1 -13	225	419.6	Pr > Chi-square	.018
14 - 50	220	404.8		
Variable: Production-Centred Leader behaviour				
199 +	228	475.3	Chi-square	8.559
51 - 198	200	437.2	Df	3
14 - 50	220	427.3	Pr > Chi-square	.036
1 -13	225	407.6		

Table 4.24 Relationship between Respondents' number of people they are directly and indirectly responsible for and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's number of people directly and indirectly responsible for.	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
6 - 29	223	457.3	Chi-square	1.398
1 - 5	214	434.7	Df	3
30 +	223	434.4	Pr > Chi-square	.706
0	219	433.2		
Variable: Change-Centred Leader behaviour				
30 +	223	458.7	Chi-square	3.476
6 - 29	223	452.3	Df	3
0	219	425.5	Pr > Chi-square	.324
1 - 5	214	422.5		
Variable: Production-Centred Leader behaviour				
30 +	223	477.3	Chi-square	7.519
6 - 29	223	457.7	Df	3
1 - 5	214	422.5	Pr > Chi-square	.057
0	219	411.3		

Table 4.25 Relationship between Leaders' functional area they are responsible for and their observed leadership behaviour (N = 879)

Leader's functional area	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Corporate Services	26	530.5	**Chi-square**	18.212
Research and Development	57	466.4	**Df**	10
Engineering, Design, Project Management	170	462.9	**Pr > Chi-square**	.052
General Management	224	459.3		
Maintenance Services	55	457.6		
Other	38	439.8		
Financial and Commercial	103	424.4		
Information Technology	27	415.2		
Human Resources	28	407.1		
Marketing	63	386.6		
Production	88	366.3		
Variable: Change-Centred Leader behaviour				
Human Resources	28	522.3	**Chi-square**	18.525
Information Technology	27	499.8	**Df**	10
Corporate Services	26	490.6	**Pr > Chi-square**	.047
General Management	224	480.0		
Other	38	444.0		
Research and Development	57	435.1		
Production	88	424.1		
Engineering, Design, Project Management	170	418.7		
Maintenance Services	55	407.3		
Financial and Commercial	103	397.9		
Marketing	63	393.5		

Table 4.25 Relationship between Leaders' functional area they are responsible for and their observed leadership behaviour (N = 879). Continue.

Leader's functional area	N	Mean Scores	Kruskall Wallis Test	
Variable: Production-Centred Leader behaviour				
Maintenance Services	55	529.0	**Chi-square**	16.870
Financial and Commercial	103	462.8	**Df**	10
Production	88	461.7	**Pr > Chi-square**	.077
Corporate Services	26	455.3		
General Management	224	447.3		
Other	38	438.0		
Marketing	63	435.7		
Information Technology	27	429.0		
Engineering, Design, Project Management	170	412.4		
Research and Development	57	373.5		
Human Resources	28	367.2		

Table 4.26 Relationship between Respondents' functional area and their assessment of their leaders' leadership behaviour (N = 879)

Respondent's functional area	N	Mean Scores	Kruskall Wallis Test	
Variable: Employee-centred leader behaviour				
Human resources	41	482.5	**Chi-square**	8.504
Corporate services	41	476.0	**Df**	10
Maintenance services	82	469.4	**Pr > Chi-square**	.580
Research and Development	69	459.2		
Other	53	446.5		
Engineering, Design, Project Management	210	446.0		
Information Technology	41	428.5		
General Management	40	424.4		
Marketing	83	419.2		
Financial and Commercial	111	406.7		
Production	104	403.5		
Variable: Change-Centred Leader behaviour				
Human resources	41	530.5	**Chi-square**	13.403
Corporate services	41	489.8	**Df**	10
General Management	40	479.3	**Pr > Chi-square**	.202
Other	53	475.1		
Information Technology	41	459.6		
Research and Development	69	440.6		
Production	104	432.3		
Marketing	83	427.8		
Maintenance services	82	420.9		
Engineering, Design, Project Management	210	417.6		
Financial and Commercial	111	406.8		

Table 4.26 Relationship between Respondents' functional area and their assessment of their leaders' leadership behaviour (N = 879). Continue.

Respondent's functional area	N	Mean Scores	Kruskall Wallis Test	
Variable: Production-Centred Leader behaviour				
Maintenance services	82	495.1	**Chi-square**	20.023
Financial and Commercial	111	474.3	**Df**	10
Production	104	471.6	**Pr > Chi-square**	.029
Other	53	470.5		
Corporate services	41	463.6		
Marketing	83	433.7		
Human resources	41	433.3		
Information Technology	41	425.8		
Engineering, Design, Project Management	210	402.8		
Research and Development	69	378.1		
General Management	40	377.9		

The interpretation of Tables 4.11 to 4.26 are as follows: When the Kruskall Wallis test indicates a Pr > Chi-square > 0.05, the scores of the groupings in a particular demographic variable are significantly different for a particular leadership behaviour variable.

From the results in Tables 4.11 to 4.26, only three demographic variables were significant predictors of scores of an employee-centred leader behaviour variable. These demographic variables were the respondent's race group (Table 4.16), the respondent's hierarchical level (Table 4.18), and the leader's functional group (Table 4.25).

Eight demographic variables were significant predictors of scores in the change-centred leader behaviour variable. These demographic variables were the respondent's race group (Table 4.16), the leader's hierarchical level (Table 4.17), the respondent's hierarchical level (Table 4.18), the leader's educational level (Table 4.19), the leader's number of subordinates (Table 4.21), the subordinates number of subordinates (Table 4.22), the leader's number of people they are directly and indirectly responsible for (Table 4.23), and the leader's functional group (Table 4.25).

Six demographic variables were significant predictors of scores on the production-centred leader behaviour variable. These demographic variables were the respondent's age group (Table 4.12), the respondent's gender (Table 4.14), the respondent's level of education (Table 4.20), the respondent's number of subordinates (Table 4.22), the number of people the leader is directly and indirectly responsible for (Table 4.23), and the respondent's functional group (Table 4.26).