

CHAPTER 4

RESEARCH RESULTS

4.1 INTRODUCTION

This chapter presents the results of the research. It should be noted that, apart from brief clarifications of statistical terminology, no attempt is made to either discuss or analyze the results. The discussion and analysis of the results are provided in chapter 5.

Section 4.2 gives further details of the delineation and categorization of the research population. A description of the statistical techniques utilized for the different parts of the research questionnaire is also included. Section 4.3 describes the research results as related to part A of the research questionnaire. This part dealt with the general classification of the respondents. Section 4.4 presents the results for part B of the questionnaire. Part B examined the general orientation of respondents, working in public sector work departments to project management.

The results for part C of the questionnaire are presented in section 4.5. This part investigated the process-related issues of formulating and implementing a strategy for formalized project management. The content-related issues investigated were incorporated in part D of the questionnaire. The results for this part are presented in section 4.6.

Section 4.7 gives the results for the last portion of the questionnaire. In this part, an attempt was made to theoretically assess the chances of successfully implementing a project management strategy in public sector work departments, based on the preceding responses for the other portions of the research questionnaire. Finally, section 3.8 provides the chapter

summary.

4.2 RESEARCH POPULATION DELINEATION AND CATEGORIZATION

4.2.1 Research population delineation

As noted in section 3.6, there were nineteen public sector work departments in the Republic of South Africa, including the four independent TBVC states and the six self-governing territories before 27 April 1994. While research questionnaires were sent to all these institutions, a major political event in South Africa during the time the empirical part of this research was being conducted, had a direct effect on the number of work departments who decided to participate in the research and thus also on the number of potential respondents. This major political event was the first nonracial, democratic elections held on 27 April 1994, which brought about the reincorporation of the former independent states into South Africa and the abolishment of the self-governing territories.

As a consequence of the prevailing political conditions leading up to the elections only four questionnaires were received back from one of the then four independent states (80 were originally expected from all the states) and only sixteen from three of the six self-governing territories (60 were originally expected from all the territories). These poor responses and the fact that during the period of this research these work departments actually ceased to exist, called for their exclusion from the original intended research population. The results presented, then, do not include any participants from these work departments of the former independent states and self-governing territories.

The estimated total size of the research population was thus reduced from 380 to 240 potential participants. Of this revised figure, a total of 172

questionnaires were received back, representing a response rate of 72 percent. This high response rate compares favourably with other reported survey research by mail questionnaires where returns of less than 40 or 50 percent are common (Kerlinger 1986: 380). The high response rate is an advantage for later valid generalizations and its obtainment is partially attributed to the two-step approach followed in the despatch of questionnaires.

It should further be noted that, with the exception of one own affairs administration (notwithstanding several attempts to persuade the administration in question to consider participation), all the remaining departments and administrations completed and returned research questionnaires. By excluding this own affairs administration, the total number of outstanding questionnaires was thus reduced from 68 (i.e. 240 minus 172) to 48. These outstanding questionnaires thus either represented potential participants who exercised the choice of non-participation or of original over-optimistic estimates of the total number of potential participants. However, there is no reason to believe that these outstanding questionnaires represent any particular bias or other viewpoints or would significantly affect the obtained results although it is true that the results obtained do not reflect the opinions, beliefs or perceptions of this one own affairs administration who declined participation. While this may limit later generalization to some extent, their estimated number of potential participants was small (20) and with the new political dispensation following 27 April 1994, the administration in question actually no longer exists.

4.2.2 Research population categorization

Using the same the broad categorization utilized in both the conceptual frameworks for the content and process of implementation depicted in figures 3.1 and 3.2, the research results are generally categorized into two types of crossbreaks (Kerlinger 1986: 147, 160). The results are presented first for the three levels of management (i.e. Group A: top, Group B: middle and Group C: lower or functional management - note that these groups are generally referred to as managerial groups) and second, the three groups which reflect the extent to which project management is applied in the relevant department (i.e. Group I: formal application, Group II: informal application and Group III: no application - note that these three groups are generally referred to as application groups). An example of a 3 x 3 crossbreak, incorporating both the three levels of management and the three application groups, is illustrated in table 4.1.

Table 4.1: General 3 x 3 crossbreak

CROSSBREAK	EXTENT OF PROJECT MANAGEMENT APPLIED		
	FORMAL GROUP I	INFORMAL GROUP II	NONE GROUP III
LEVEL OF MANAGEMENT			
TOP GROUP A			
MIDDLE GROUP B			
LOWER GROUP C			

4.2.3 Statistical techniques utilized

All statistical results reported in this chapter were obtained through the use of the computer program, Statistical Analysis System (SAS version 6.06).

In questions where the results are reported by means of simple cross tabulations (all the questions in Part A, B and some questions in part C of the questionnaire), the values for chi-square (χ^2), the probability of a chance occurrence (p) and the contingency coefficients (C) are indicated at the bottom of each table. Results are only considered statistically significant (and only then indicated) when the obtained χ^2 values are greater than the critical χ^2 value for a significant level of 0.05 or lower (i.e. 0.025, 0.01 or 0.005). In such instances, the relationship under consideration is judged to be more than a chance occurrence. In appropriate cases, the mean (\bar{X}) and standard deviation (S) values are also indicated. In addition, a one-way analysis of variance (ANOVA) between the means of the categorised groups is also done for a significance level of $\alpha = 0.05$. Where the indicated p-value (based on the obtained F-value) is smaller than this preselected α value, the means between the groups is considered to be statistically significantly different. In such instances, the difference between the groups under consideration is judged to be more than a chance occurrence.

In questions where respondents were asked to indicate a rank order listing of items (the other questions in Part C of the questionnaire), the means reported is weighted averages, based on the following assigned weights: first choice = weight 1, second choice = weight 2, third choice = weight 3, and so on. The item which is then ranked first represents the one with the smallest (or lowest) value, the second placed item, the one with the second smallest value, and so on. One-way analysis of variances (ANOVA) is also carried out for these questions, again for a significance level of $\alpha = 0.05$.

In questions where respondents were asked to indicate the relative importance of different identified factors (all the questions in Part D of the questionnaire), the means reported are again weighted averages, based on

the following assigned weights: very important = weight 1, important = weight 2, desirable = weight 3, and not important = weight 4. As before, the item which is ranked first (most important) represents the one with the smallest (or lowest) value. One-way analysis of variances (ANOVA) is once again carried out with the same significance level of $\alpha = 0.05$. In addition to these statistical procedures, factor analysis is further done on the questions in Part D of the questionnaire.

Kerlinger (1986: 590) sees factor analysis as a construct validity tool. It is a statistical technique, where based on the correlations between items, "new factors" (also called constructs or new hypothetical variables) are explained by the underlying unities (also referred to as communalities) or common factor variances of the items themselves (Kerlinger 1986: 570). The technique thus provides the correlations (also referred to as factor loadings) between the original variables (or items) with the new hypothetical factors or dimensions. In this study, the principal factor method was used and the solution was rotated by the varimax-criterion to obtain a maximum interpretable pattern.

In the last part of the questionnaire, respondents were asked to predict the chances of successfully implementing formalized project management, based on their answers in the two previous questions. It is thus appropriate in this question that, apart from simple cross tabulation and one-way analysis of variance of the results, correlational analysis be done with these other two questions. Here the Pearson product-moment correlation coefficients (r) and p -value under H_0 are reported. Correlations are only considered statistically significant (and only then indicated) when the p -values are smaller than the significant level of 0.05. In such instances, the correlation between the results of the two questions is judged to be more than a chance occurrence.

4.3 CLASSIFICATION OF RESEARCH POPULATION

4.3.1 Question 1.1 (Code Q1)

The first question in part A of the research questionnaire asked respondents to indicate their current managerial position or level. The results were as indicated in tables 4.2 and 4.3.

Table 4.2: Number of respondents per managerial level

LEVEL OF MANAGEMENT	TOP N	MIDDLE N	LOWER N	TOTAL N
TOTAL	24	97	45	166
%T	15%	58%	27%	100%

Table 4.3: Number of respondents per application group

APPLICATION GROUP	FORMAL N	INFORMAL N	NONE N	TOTAL N
TOTAL	72	63	33	168
%T	43%	37%	20%	100%

4.3.2 Question 1.2 (Code Q2)

In the second question of part A respondents were asked to indicate the total number of years they had worked in a public sector department. The results were as indicated in tables 4.4 and 4.5.

Table 4.4: Number of years worked in a public sector department and one-way analysis of variance between means per managerial group

NUMBER OF YEARS	GROUP A N	GROUP B N	GROUP C N	TOTAL N %T
0 - 5	2	15	20	37 24%
6 - 10	2	30	14	46 29%
11 - 15	4	12	6	22 14%
16 - 20	9	19	2	30 19%
21 - 25	3	7	1	11 7%
26 - 30	1	3	0	4 3%
31 - 35	1	3	0	4 3%
36 - 40	0	2	0	2 1%
TOTAL %T	22 14%	91 58%	43 28%	156 100% 100%
\bar{X} S	16.238 7.538	13.264 8.808	6.643 5.333	12.048# 7.226#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q2	13.93	0.0001*	(A;B)(C)	

#Average of 3 groups

One-way ANOVA with $\alpha = 0.05$

*Result statistically significant at 0.05 level

Table 4.5: Number of years worked in a public sector department and one-way analysis of variance between means per application group

NUMBER OF YEARS	GROUP I N	GROUP II N	GROUP III N	TOTAL N %T
0 - 5	12	16	9	37 23%
6 - 10	22	16	10	48 30%
11 - 15	12	8	3	23 14%
16 - 20	13	14	3	30 19%
21 - 25	7	3	1	11 7%
26 - 30	1	2	1	4 3%
31 - 35	1	2	1	4 3%
36 - 40	0	0	2	2 1%
TOTAL %T	68 43%	61 38%	30 19%	159 100% 100%
\bar{X} S	12.015 7.085	11.492 8.374	11.933 11.157	11.813# 8.872#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q2	0.07	0.9361	(1;2;3)	

#Average of 3 groups
One-way ANOVA with $\alpha = 0.05$

4.3.3 Question 1.3 (Code Q3)

The third question in part A of the questionnaire asked respondents to indicate their professional status. The results were as indicated in tables 4.6 and 4.7.

Table 4.6: Professional status per managerial group

PROFESSIONAL STATUS	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
ARCHITECT	6	25% 15%	26	27% 65%	8	18% 20%	40 24%
ENGINEER	12	50% 23%	26	27% 50%	14	32% 27%	52 32%
QUANTITY SURVEYOR	4	17% 11%	25	26% 67%	8	18% 22%	37 23%
OTHER	2	8% 6%	19	20% 54%	14	32% 40%	35 21%
TOTAL %T	24	15%	96	58%	44	27%	164 100%

$\chi^2=9.698$ $p=0.138$ $C=0.236$ $N=164$

Table 4.7: Professional status per application group

PROFESSIONAL STATUS	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
ARCHITECT	17	24% 42%	19	31% 46%	5	15% 12%	41 25%
ENGINEER	19	27% 36%	20	32% 38%	14	43% 26%	53 32%
QUANTITY SURVEYOR	13	18% 34%	13	21% 34%	12	36% 32%	38 23%
OTHER	22	31% 65%	10	16% 29%	2	6% 6%	34 20%
TOTAL %T	71	43%	62	37%	33	20%	166 100%

$\chi^2=14.973$ $p=0.020^*$ $C=0.288$ $N=166$

* Results statistically significant at 0.025 level where $\chi^2=14.449$ for 6 degrees of freedom

4.3.4 Question 1.4 (Code Q4)

In the fourth question of part A respondents were asked to indicate their highest formal qualification. The results were as indicated in tables 4.8 and 4.9.

Table 4.8: Highest formal qualification per managerial group

HIGHEST FORMAL QUALIFICATION	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
DEGREE	18 75% 16%	66 71% 60%	26 63% 24%	110 69%
DIPLOMA	6 25% 19%	18 19% 58%	7 17% 23%	31 20%
OTHER	0 0% 0%	9 10% 53%	8 20% 47%	17 11%
TOTAL %T	24 15%	93 59%	41 26%	158 100%

$\chi^2=6.447$ $p=0.168$ $C=0.198$ $N=158$

Table 4.9: Highest formal qualification per application group

HIGHEST FORMAL QUALIFICATION	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
DEGREE	45 66% 40%	41 67% 36%	27 85% 24%	113 70%
DIPLOMA	14 21% 44%	15 25% 47%	3 9% 9%	32 20%
OTHER	9 13% 56%	5 8% 31%	2 6% 13%	16 10%
TOTAL %T	68 42%	61 38%	32 20%	161 100%

$\chi^2=4.993$ $p=0.288$ $C=0.173$ $N=161$

4.4 GENERAL ORIENTATION TO PROJECT MANAGEMENT

4.4.1 Question 2.1 (Code Q5)

The first question in part B of the questionnaire asked respondents to indicate only whether project management was currently being applied in their department or not. The results were as indicated in table 4.10.

Table 4.10: Current application of project management per managerial group

CURRENT APPLICATION	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
YES (w1)	18 75% 18%	54 61% 54%	28 67% 28%	100 65%
NO (w2)	6 25% 11%	35 39% 64%	14 33% 25%	55 35%
TOTAL %T	24 16%	89 57%	42 27%	155 100% 100%

$\chi^2=1.811$ $p=0.404$ $C=0.107$ $N=155$

4.4.2 Question 2.2 (Code Q6)

The second question in part B of the questionnaire asked respondents to indicate to what extent project management was currently being applied in their departments. The result was as indicated in table 4.11.

Table 4.11: Extent of current project management application per managerial group

EXTENT OF APPLICATION	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
FORMAL	12 52% 17%	38 40% 55%	19 43% 28%	69 42%
INFORMAL	7 31% 11%	39 41% 64%	15 34% 25%	61 38%
NONE	4 17% 13%	18 19% 56%	10 23% 31%	32 20%
TOTAL %T	23 14%	95 59%	44 27%	162 100% 100%

$\chi^2=1.701$ $p=0.791$ $C=0.102$ $N=162$

4.4.3 Question 2.3 (Code Q7/Q8)

The third question in part B of the questionnaire asked respondents to indicate what they believed the general attitude was to project management by first, their department generally and secondly, by themselves. The results were as indicated in tables 4.12, 4.13, 4.14 and 4.15.

Table 4.12: General attitude to project management of department and one-way analysis of variance between means per managerial group

ATTITUDE OF DEPARTMENT	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
POSITIVE (w3)	15 63% 18%	45 48% 52%	26 59% 30%	86 53%
NEUTRAL (w2)	7 29% 11%	43 46% 65%	16 36% 24%	66 41%
NEGATIVE (w1)	2 8% 20%	6 6% 60%	2 5% 20%	10 6%
TOTAL %T	24 15%	94 58%	44 27%	162 100% 100%
\bar{X} S	2.522 0.658	2.413 0.612	2.535 0.589	2.490# 0.620#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q7	0.70	0.4979	(A;B;C)	

$\chi^2=3.132$ $p=0.536$ $C=0.138$ $N=162$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.13: General attitude to project management of department and one-way analysis of variance between means per application group

ATTITUDE OF DEPARTMENT	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
POSITIVE (w3)	53 75% 62%	22 36% 26%	10 32% 12%	85 52%
NEUTRAL (w2)	16 22% 24%	37 61% 54%	15 49% 22%	68 42%
NEGATIVE (w1)	2 3% 20%	2 3% 20%	6 19% 60%	10 6%
TOTAL %T	71 44%	61 37%	31 19%	163 100% 100%
\bar{X} S	2.718 0.512	2.328 0.539	2.129 0.718	2.392# 0.590#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q7	14.35	0.0001**	(1)(2;3)	

$\chi^2=35.023$ $p=0.000^*$ $C=0.421$ $N=163$ #Average of 3 groups

*Results statistically significant at 0.005 level where $\chi^2=14.860$ for 4 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at 0.05 level

Table 4.14: General attitude to project management of respondents and one-way analysis of variance between means per managerial group

ATTITUDE OF RESPONDENTS	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
POSITIVE (w3)	21 91% 15%	78 82% 58%	36 82% 27%	135 83%
NEUTRAL (w2)	0 0% 0%	16 17% 73%	6 14% 27%	22 14%
NEGATIVE (w1)	2 9% 40%	1 1% 20%	2 4% 40%	5 3%
TOTAL %T	23 14%	95 59%	44 27%	162 100% 100%
\bar{X} S	2.818 0.576	2.817 0.420	2.767 0.522	2.801# 0.506#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q8	0.17	0.8407	(A;B;C)	

$\chi^2=7.994$ $p=0.092$ $C=0.217$ $N=162$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.15: General attitude to project management of respondents and one-way analysis of variance between means per application group

ATTITUDE OF RESPONDENTS	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
POSITIVE (w3)	63 90% 46%	50 81% 36%	24 75% 18%	137 84%
NEUTRAL (w2)	4 6% 18%	12 19% 55%	6 19% 27%	22 13%
NEGATIVE (w1)	3 4% 60%	0 0% 0%	2 6% 40%	5 3%
TOTAL %T	70 43%	62 38%	32 19%	164 100% 100%
\bar{X} S	2.857 0.460	2.806 0.398	2.688 0.592	2.784# 0.483#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q8	1.45	0.2378	(1;2;3)	

$\chi^2=9.412$ $p=0.052$ $C=0.233$ $N=164$
One-way ANOVA with $\alpha=0.05$

4.4.4 Question 2.4 (Code Q9/Q10)

In the fourth question of part B respondents were asked to indicate their general knowledge about project management with regard to first, its concepts and philosophy and secondly, its techniques, such as PERT/CPM. The results were as indicated in tables 4.16, 4.17, 4.18 and 4.19.

Table 4.16: General knowledge of project management concepts and philosophy and one-way analysis of variance between means per managerial group

KNOWLEDGE OF CONCEPTS & PHILOSOPHY	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
GOOD (w3)	12	50% 20%	33	35% 56%	14	31% 24%	59 35%
AVERAGE (w2)	10	42% 12%	52	54% 64%	20	44% 24%	82 50%
LIMITED (w3)	2	8% 8%	11	11% 46%	11	25% 46%	24 15%
TOTAL %T	24	15%	96	58%	45	27%	165 100% 100%
\bar{X} S	2.435 0.654		2.245 0.640		2.046 0.751		2.242# 0.682#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q9	2.74		0.0678		(A;B)(B;C)		

$\chi^2=6.929$ $p=0.140$ $C=0.201$ $N=165$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.17: General knowledge of project management concepts and philosophy and one-way analysis of variance between means per application group

KNOWLEDGE OF CONCEPTS & PHILOSOPHY	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
GOOD (w3)	31 43% 52%	17 27% 29%	11 33% 19%	59 35%
AVERAGE (w2)	35 49% 42%	35 57% 42%	14 43% 16%	84 50%
LIMITED (w1)	6 8% 25%	10 16% 42%	8 24% 33%	24 15%
TOTAL %T	72 43%	62 37%	33 20%	167 100% 100%
\bar{X} S	2.347 0.632	2.113 0.655	2.091 0.765	2.184# 0.684#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q9	2.70	0.0705	(1;2;3)	

$\chi^2=7.463$ $p=0.113$ $C=0.207$ $N=167$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.18: General knowledge of project management techniques and one-way analysis of variance between means per managerial group

KNOWLEDGE OF TECHNIQUES	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
GOOD (w3)	6 26% 17%	22 24% 61%	8 19% 22%	36 23%
AVERAGE (w2)	12 52% 20%	30 32% 50%	18 42% 30%	60 38%
LIMITED (w1)	5 22% 8%	41 44% 65%	17 39% 27%	63 39%
TOTAL %T	23 14%	93 59%	43 27%	159 100% 100%
\bar{X} S	2.046 0.706	1.813 0.802	1.786 0.742	1.882# 0.750#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q10	0.92	0.3989	(A;B;C)	

$\chi^2=5.000$ $p=0.287$ $C=0.175$ $N=159$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.19: General knowledge of project management techniques and one-way analysis of variance between means per application group

KNOWLEDGE OF TECHNIQUES	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
GOOD (w3)	20 29% 56%	8 13% 22%	8 25% 22%	36 22%
AVERAGE (w2)	26 37% 43%	27 46% 44%	8 25% 13%	61 38%
LIMITED (w1)	24 34% 37%	24 41% 38%	16 50% 25%	64 40%
TOTAL %T	70 43%	59 37%	32 20%	161 100%
\bar{X} S	1.943 0.796	1.729 0.691	1.750 0.842	1.807# 0.776#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q10	1.44	0.2410	(1;2;3)	

$\chi^2=7.114$ $p=0.130$ $C=0.206$ $N=161$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5 MANAGEMENT OF CHANGE

4.5.1 Question 3.1 (Code Q11)

The first question in part C of the questionnaire asked respondents to estimate the chances of successfully implementing project management in their department, given expressly that **no changes were made** in the way it currently operated. The results were as indicated in tables 4.20 and 4.21.



Table 4.20: Chances of successfully implementing project management with no changes made and one-way analysis of variance between means per managerial group

CHANCES OF IMPLEMENTING	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
SMALL (0-24%)(w1)	4 17% 12%	20 21% 59%	10 22% 29%	34 21%
LIMITED (25-49%)(w2)	5 21% 11%	33 34% 70%	9 20% 19%	47 28%
REASONBLE (50-74%)(w3)	12 50% 18%	35 36% 54%	18 40% 28%	65 39%
GOOD (75-99%)(w4)	3 12% 15%	9 9% 45%	8 18% 40%	20 12%
TOTAL %T	24 15%	97 58%	45 27%	166 100% 100%
\bar{X} S	2.565 0.929	2.337 0.912	2.523 1.036	2.475# 0.959#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q11	0.88	0.4186	(A;B;C)	

$\chi^2=5.737$ $p=0.453$ $C=0.183$ $N=166$ #Average of 3 groups
One-way ANOVA with $\alpha =0.05$

Table 4.21: Chances of successfully implementing project management with no changes made and one-way analysis of variance between means per application group

CHANCES OF IMPLEMENTING	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
SMALL (0-24%)(w1)	10 14% 29%	13 21% 37%	12 36% 34%	35 21%
LIMITED (25-49%)(w2)	16 22% 33%	17 27% 36%	15 46% 31%	48 29%
REASONABLE (50-74%)(w3)	32 44% 50%	27 43% 42%	5 15% 8%	64 38%
GOOD (75-99%)(w4)	14 20% 67%	6 9% 28%	1 3% 5%	21 12%
TOTAL %T	72 43%	63 37%	33 20%	168 100% 100%
\bar{X} S	2.694 0.944	2.413 0.927	1.849 0.795	2.319# 0.889#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q11	9.77	0.0001**	(1;2)(3)	

$\chi^2=21.141$ $p=0.002^*$ $C=0.334$ $N=168$

*Results statistically significant at a 0.005 level where $\chi^2=18.548$ for 6 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at a 0.05 level

4.5.2 Question 3.2 (Code Q12/Q13)

In the second question of part C respondents were asked to judge the past performance of their department with regard to first, it meeting its objectives and secondly, it utilizing its resources management efficiently. The results were as indicated in tables 4.22, 4.23, 4.24 and 4.25.

Table 4.22: Past performance of department in meeting its objectives and one-way analysis of variance between means per managerial group

PAST PERFORMANCE OBJECTIVES	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
GOOD (w3)	7 29% 12%	36 38% 62%	15 34% 26%	58 35%
AVERAGE (w2)	17 71% 19%	50 52% 55%	24 55% 26%	91 56%
POOR (w1)	0 0% 0%	10 10% 67%	5 11% 33%	15 9%
TOTAL %T	24 15%	96 58%	44 27%	164 100% 100%
\bar{X} S	2.304 0.464	2.266 0.640	2.233 0.642	2.268# 0.582#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q12	0.10	0.9021	(A;B;C)	

$\chi^2=4.232$ $p=0.376$ $C=0.159$ $N=164$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.23: Past performance of department in meeting its objectives and one-way analysis of variance between means per application group

PAST PERFORMANCE OBJECTIVES	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
GOOD (w3)	32 45% 53%	21 35% 34%	8 24% 13%	61 37%
AVERAGE (w2)	34 47% 39%	33 54% 37%	21 64% 24%	88 53%
POOR (w1)	6 8% 35%	7 11% 41%	4 12% 24%	17 10%
TOTAL %T	72 43%	61 37%	33 20%	166 100% 100%
\bar{X} S	2.361 0.635	2.230 0.643	2.121 0.600	2.237# 0.626#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q12	1.79	0.1705	(1;2;3)	

$\chi^2=4.287$ $p=0.369$ $C=0.159$ $N=166$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.24: Past performance of department in utilizing resources and one-way analysis of variance between means per managerial group

PAST PERFORMANCE RESOURCES	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
GOOD (w3)	4 17% 10%	26 27% 67%	9 21% 23%	39 24%
AVERAGE (w2)	17 71% 18%	54 57% 57%	23 55% 25%	94 58%
POOR (w1)	3 12% 11%	15 16% 53%	10 24% 36%	28 18%
TOTAL %T	24 15%	95 59%	42 26%	161 100% 100%
\bar{X} S	2.044 0.550	2.118 0.650	1.976 0.680	2.046# 0.627#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q13	0.70	0.4972	(A;B;C)	

$\chi^2=3.324$ $p=0.505$ $C=0.142$ $N=161$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.25: Past performance of department in utilizing its resources and one-way analysis of variance between means per application group

PAST PERFORMANCE RESOURCES	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
GOOD (w3)	20 28% 50%	12 20% 30%	8 25% 20%	40 25%
AVERAGE (w2)	41 59% 44%	36 59% 39%	16 50% 17%	93 57%
POOR (w1)	9 13% 30%	13 21% 43%	8 25% 27%	30 18%
TOTAL %T	70 43%	61 37%	32 20%	163 100% 100%
\bar{X} S	2.157 0.629	1.984 0.645	2.000 0.718	2.047# 0.664#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q13	1.33	0.2684	(1;2;3)	

$\chi^2=3.611$ $p=0.461$ $C=0.147$ $N=163$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.3 Question 3.3 (Code Q14)

The third question in part C of the questionnaire asked respondents to indicate whether they believed there were disrupting forces which restrained the department from obtaining optimal performance. The results were as indicated in tables 4.26 and 4.27.

Table 4.26: Disrupting forces which restrain the department obtaining optimal performance and one-way analysis of variance between means per managerial group

DISRUPTING FORCES	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
YES (w1)	21 88% 16%	80 82% 60%	33 75% 24%	134 81%
NO (w2)	3 12% 10%	17 18% 55%	11 25% 35%	31 19%
TOTAL %T	24 14%	97 59%	44 27%	165 100% 100%
\bar{X} S	1.130 0.338	1.168 0.382	1.256 0.438	1.185# 0.386#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q14	1.02	0.3644	(A;B;C)	

$\chi^2=1.836$ $p=0.399$ $C=0.105$ $N=165$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.27: Disrupting forces which restrain the department obtaining optimal performance and one-way analysis of variance between means per application group

DISRUPTING FORCES	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
YES (w1)	60	85% 44%	51	81% 38%	25	76% 18%	136 81%
NO (w2)	11	15% 35%	12	19% 39%	8	24% 26%	31 19%
TOTAL %T	71	42%	63	38%	33	20%	167 100%
\bar{X} S	1.155 0.364		1.190 0.396		1.242 0.435		1.196# 0.398#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q14	0.57		0.5656		(1;2;3)		

$\chi^2=1.157$ $p=0.561$ $C=0.083$ $N=167$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.4 Question 3.4 (Code Q15)

In the fourth question of part C respondents were asked to indicate whether they believed that some adjustments inside the department were necessary to maintain or improve the department's performance. The results were as indicated in tables 4.28 and 4.29.

Table 4.28: Adjustments necessary inside the department to maintain or improve its performance and one-way analysis of variance between means per managerial group

ADJUSTMENTS NEEDED	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
YES (w1)	18 78% 14%	79 85% 60%	35 83% 26%	132 84%
NO (w2)	5 22% 19%	14 15% 54%	7 17% 27%	26 16%
TOTAL %T	23 14%	93 59%	42 27%	158 100%
\bar{X} S	1.227 0.422	1.154 0.360	1.171 0.377	1.184# 0.386#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q15	0.34	0.7152	(A;B;C)	

$\chi^2=0.601$ $p=0.740$ $C=0.062$ $N=158$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.29: Adjustments necessary inside the department to maintain or improve its performance and one-way analysis of variance between means per application group

ADJUSTMENTS NEEDED	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
YES (w1)	57 81% 43%	49 83% 37%	26 87% 20%	132 83%
NO (w2)	13 19% 48%	10 17% 37%	4 13% 15%	27 17%
TOTAL %T	70 44%	59 37%	30 19%	159 100%
\bar{X} S	1.186 0.392	1.169 0.378	1.133 0.346	1.163# 0.372#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q15	0.20	0.8181	(1;2;3)	

$\chi^2=0.409$ $p=0.815$ $C=0.051$ $N=159$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.5 Question 3.5 (Code Q16)

In the fifth question of part C respondents were asked to indicate which of the two listed forces provided the greatest stimulus for change inside their departments. The results were as indicated in tables 4.30 and 4.31.

Table 4.30: Type of force providing the greatest stimulus for change inside department and one-way analysis of variance between means per managerial group

TYPE OF FORCE	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
EXTERNAL (w1)	11 48% 12%	54 57% 61%	24 56% 27%	89 55%
INTERNAL (w2)	12 52% 17%	41 43% 57%	19 44% 26%	72 45%
TOTAL %T	23 14%	95 59%	43 27%	161 100% 100%
\bar{X} S	1.500 0.511	1.419 0.498	1.429 0.502	1.449# 0.504#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q16	0.23	0.7915	(A;B;C)	

$\chi^2=0.616$ $p=0.735$ $C=0.062$ $N=161$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.31: Type of force providing the greatest stimulus for change inside department and one-way analysis of variance between means per application group

TYPE OF FORCE	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
EXTERNAL (w1)	42	59% 46%	33	54% 36%	16	52% 18%	91 56%
INTERNAL (w2)	29	41% 40%	28	46% 39%	15	48% 21%	72 44%
TOTAL %T	71	44%	61	37%	31	19%	163 100%
\bar{X} S	1.409 0.495		1.459 0.502		1.484 0.508		1.451# 0.502#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q16	0.30		0.7387		(1;2;3)		

$\chi^2=0.616$ $p=0.735$ $C=0.061$ $N=163$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.6 Question 3.6 (Code Q17/18)

The sixth question of part C asked respondents to indicate the general attitude of their department towards change, firstly in how changes were acted upon and secondly, how often changes were initiated. The results were as indicated in tables 4.32, 4.33, 4.34 and 4.35.

Table 4.32: General attitude of department on acting on changes and one-way analysis of variance between means per managerial group

ACTION TOWARDS CHANGES	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
EMBRACED (w1)	13 59% 18%	39 42% 55%	19 42% 27%	71 44%
RESISTED (w2)	9 41% 10%	54 58% 61%	26 58% 29%	89 56%
TOTAL %T	22 14%	93 58%	45 28%	160 100% 100%
\bar{X} S	1.381 0.503	1.582 0.496	1.591 0.499	1.518# 0.499#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q17	1.54	0.2173	(A;B;C)	

$\chi^2=2.239$ $p=0.326$ $C=0.117$ $N=160$ #Average of 3 groups
One-way ANOVA with $\alpha = 0.05$

Table 4.33: General attitude of department on acting on changes and one-way analysis of variance between means per application group

ACTION TOWARDS CHANGES	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
EMBRACED (w1)	34 59% 18%	25 42% 55%	11 42% 27%	70 44%
RESISTED (w2)	33 41% 10%	36 58% 61%	21 58% 29%	90 56%
TOTAL %T	67 42%	61 38%	32 20%	160 100% 100%
\bar{X} S	1.493 0.504	1.590 0.496	1.656 0.483	1.580# 0.494#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q17	1.33	0.2675	(1;2;3)	

$\chi^2=2.665$ $p=0.264$ $C=0.128$ $N=160$ #Average of 3 groups
One-way ANOVA with $\alpha = 0.05$

Table 4.34: General attitude of department towards initiation of changes and one-way analysis of variance between means per managerial group

INITIATION OF CHANGE	GROUP A		GROUP B		GROUP C		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
FREQUENTLY (w1)	13	54% 18%	41	43% 58%	17	39% 24%	71	44%
INFREQUENTLY (w2)	11	46% 12%	54	57% 59%	27	61% 29%	92	56%
TOTAL %T	24	15%	95	58%	44	27%	163	100%
\bar{X}	1.478		1.570		1.628		1.559#	
S	0.509		0.498		0.493		0.500#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q18	0.68		0.5076		(A;B;C)			

$\chi^2=1.538$ $p=0.463$ $C=0.097$ $N=163$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.35: General attitude of department towards initiation of changes and one-way analysis of variance between means per application group

INITIATION OF CHANGE	GROUP I		GROUP II		GROUP III		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
FREQUENTLY (w1)	33	47% 47%	28	45% 39%	10	30% 14%	71	43%
INFREQUENTLY (w2)	37	53% 39%	34	55% 36%	23	70% 25%	94	57%
TOTAL %T	70	42%	62	38%	33	20%	165	100%
\bar{X}	1.529		1.548		1.700		1.592#	
S	0.503		0.502		0.467		0.491#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q18	1.39		0.2527		(1;2;3)			

$\chi^2=2.778$ $p=0.249$ $C=0.129$ $N=165$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.7 Question 3.7 (Code Q19)

The seventh question of part C asked respondents to indicate whether they believed that implementing project management would contribute towards solutions to deal with the disrupting forces which affect their department. The results were as indicated in tables 4.36 and 4.37.

Table 4.36: Contribution of implementing project management to deal with forces and one-way analysis of variance between means per managerial group

CONTRIBUTION OF PROJECT MANAGEMENT	GROUP A		GROUP B		GROUP C		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
YES (w1)	20	83% 16%	71	76% 56%	35	81% 28%	126	78%
NO (w2)	4	17% 11%	23	24% 66%	8	19% 23%	35	22%
TOTAL %T	24	15%	94	58%	43	27%	161	100%
\bar{X}	1.174		1.250		1.190		1.205#	
S	0.381		0.432		0.394		0.402#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q19	0.48		0.6225		(A;B;C)			

$\chi^2=1.023$ $p=0.600$ $C=0.079$ $N=161$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.37: Contribution of implementing project management to deal with forces and one-way analysis of variance between means per application group

CONTRIBUTION OF PROJECT MANAGEMENT	GROUP I		GROUP II		GROUP III		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
YES (w1)	53	76% 41%	51	82% 40%	24	77% 19%	128	79%
NO (w2)	17	24% 49%	11	18% 31%	7	23% 20%	35	21%
TOTAL %T	70	43%	62	38%	31	19%	163	100%
\bar{X}	1.243		1.177		1.226		1.215#	
S	0.432		0.385		0.425		0.414#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q19	0.43		0.6540		(1;2;3)			

$\chi^2=0.863$ $p=0.650$ $C=0.073$ $N=163$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.8 Question 3.8 (Code Q20)

The eighth question of part C asked respondents to indicate how many changes or adjustments were needed to implement project management in their department effectively and efficiently. The results were as indicated in tables 4.38 and 4.39.

Table 4.38: Number of changes needed to implement project management and one-way analysis of variance between means per managerial group

NUMBER OF CHANGES NEEDED	GROUP A		GROUP B		GROUP C		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
MANY (w1)	5	21% 10%	30	31% 61%	14	32% 29%	49	29%
SOME (w2)	17	71% 15%	67	69% 59%	30	67% 26%	114	69%
NONE (w3)	2	8% 67%	0	0% 0%	1	1% 33%	3	2%
TOTAL %T	24	15%	97	58%	45	27%	166	100%
\bar{X} S	1.870 0.537		1.684 0.465		1.705 0.506		1.753# 0.503#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q20	1.34		0.2655		(A;B;C)			

$\chi^2=8.214$ $p=0.084$ $C=0.217$ $N=166$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.39: Number of changes needed to implement project management and one-way analysis of variance between means per application group

NUMBER OF CHANGES NEEDED	GROUP I		GROUP II		GROUP III		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
MANY (w1)	16	22% 31%	21	33% 40%	15	45% 29%	52	31%
SOME (w2)	54	75% 48%	41	65% 36%	18	55% 16%	113	67%
NONE (w3)	2	3% 67%	1	2% 33%	0	0% 0%	3	2%
TOTAL %T	72	43%	63	37%	33	20%	168	100%
\bar{X} S	1.806 0.464		1.683 0.502		1.545 0.506		1.678# 0.491#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q20	3.37		0.0367*		(1;2)(2;3)			

$\chi^2=6.609$ $p=0.158$ $C=0.195$ $N=168$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

* Result statistically significant at 0.05 level

4.5.9 Question 3.9 (Code Q21/Q22/Q23/Q24)

The ninth question of part C asked respondents to indicate whether certain statements assuming that project management would be implemented in their departments were true or false. The first statement postulated that substantial time was needed, the second, that extensive change would be indicated, the third, that the general attitude of personnel would be unfavourable, and finally, that an outside consultant would be best to manage the implementation. The results were as indicated in tables 4.40 to 4.47.

Table 4.40: Statement: Substantial time is needed to implement project management and one-way analysis of variance between means per managerial group

SUBSTANTIAL TIME IS NEEDED	GROUP A		GROUP B		GROUP C		TOTAL	
	N	c% r%	N	c% r%	N	c% r%	N	%T
TRUE (w1)	8	40% 9%	62	70% 65%	25	60% 26%	95	63%
FALSE (w2)	12	60% 22%	26	30% 47%	17	40% 31%	55	37%
TOTAL %T	20	13%	88	59%	42	28%	150	100%
\bar{X}	1.632		1.291		1.415		1.446#	
S	0.503		0.459		0.497		0.486#	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
CODE Q21	4.28		0.0156**		(A;C)(B;C)			

$\chi^2=6.873$ $p=0.032^*$ $C=0.209$ $N=150$ #Average of 3 groups

*Results statistically significant at 0.05 level where $\chi^2=5.991$ for 2 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at 0.05 level

Table 4.41: Statement: Substantial time is needed to implement project management and one-way analysis of variance between means per application group

SUBSTANTIAL TIME IS NEEDED	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
TRUE (w1)	40 63% 43%	38 66% 40%	16 59% 17%	94 63%
FALSE (w2)	24 37% 44%	20 34% 36%	11 41% 20%	55 37%
TOTAL %T	64 43%	58 39%	27 18%	149 100%
\bar{X} S	1.375 0.488	1.345 0.479	1.407 0.501	1.376# 0.489#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q21	0.16	0.8520	(1;2;3)	

$\chi^2=0.326$ $p=0.849$ $C=0.047$ $N=149$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.42: Statement: Extensive change would be indicated to implement project management and one-way analysis of variance between means per managerial group

EXTENSIVE CHANGE INDICATED	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
TRUE (w1)	6 30% 9%	44 52% 65%	18 45% 26%	68 47%
FALSE (w2)	14 70% 18%	40 48% 53%	22 55% 29%	76 53%
TOTAL %T	20 14%	84 58%	40 28%	144 100% 100%
\bar{X} S	1.684 0.470	1.488 0.502	1.564 0.504	1.579# 0.492#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q22	1.28	0.2814	(A;B;C)	

$\chi^2=3.356$ $p=0.187$ $C=0.151$ $N=144$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.43: Statement: Extensive change would be indicated to implement project management and one-way analysis of variance between means per application group

EXTENSIVE CHANGE INDICATED	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
TRUE (w1)	22	36% 32%	30	55% 43%	17	61% 25%	69 48%
FALSE (w2)	39	64% 52%	25	45% 33%	11	39% 15%	75 52%
TOTAL %T	61	42%	55	38%	28	20%	144 100% 100%
\bar{X} S	1.639 0.484		1.455 0.503		1.393 0.497		1.496# 0.495#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q22	3.19		0.0440**		(1;2;3)		

$\chi^2=6.239$ $p=0.044^*$ $C=0.204$ $N=144$ #Average of 3 groups

*Results statistically significant at 0.05 level where $\chi^2=5.991$ for 2 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at 0.05 level

Table 4.44: Statement: The general attitude of personnel is unfavourable to implement project management and one-way analysis of variance between means per managerial group

GENERAL ATTITUDE UNFAVOURABLE	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
TRUE (w1)	7	30% 11%	39	47% 60%	19	48% 29%	65 45%
FALSE (w2)	16	70% 20%	44	53% 54%	21	52% 26%	81 55%
TOTAL %T	23	16%	83	57%	40	27%	146 100% 100%
\bar{X} S	1.682 0.470		1.531 0.502		1.513 0.506		1.575# 0.493#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q23	0.93		0.3958		(A;B;C)		

$\chi^2=2.196$ $p=0.334$ $C=0.122$ $N=146$ #Average of 3 groups

One-way ANOVA with $\alpha=0.05$



Table 4.45: Statement: The general attitude of personnel is unfavourable to implement project management and one-way analysis of variance between means per application group

GENERAL ATTITUDE UNFAVOURABLE	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
TRUE (w1)	28 43% 40%	27 51% 39%	15 50% 21%	70 47%
FALSE (w2)	37 57% 48%	26 49% 33%	15 50% 19%	78 53%
TOTAL %T	65 44%	53 36%	30 20%	148 100%
\bar{X} S	1.569 0.499	1.491 0.505	1.500 0.509	1.520# 0.504#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q23	0.41	0.6635	(1;2;3)	

$\chi^2=0.835$ $p=0.659$ $C=0.075$ $N=148$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.46: Statement: An outside consultant is best to manage implementation of project management and one-way analysis of variance between means per managerial group

OUTSIDE CONSULTANT BEST	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
TRUE (w1)	8 36% 12%	38 44% 56%	22 51% 32%	68 45%
FALSE (w2)	14 64% 17%	48 56% 58%	21 49% 25%	83 55%
TOTAL %T	22 15%	86 57%	43 28%	151 100%
\bar{X} S	1.619 0.492	1.548 0.500	1.500 0.506	1.556# 0.499#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q24	0.40	0.6721	(A;B;C)	

$\chi^2=1.346$ $p=0.510$ $C=0.094$ $N=151$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.47: Statement: An outside consultant is best to manage implementation of project management and one-way analysis of variance between means per application group

OUTSIDE CONSULTANT BEST	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
TRUE (w1)	25 41% 36%	25 42% 36%	20 65% 28%	70 46%
FALSE (w2)	36 59% 44%	34 58% 42%	11 35% 14%	81 54%
TOTAL %T	61 40%	59 39%	31 21%	151 100% 100%
\bar{X} S	1.590 0.496	1.576 0.498	1.355 0.486	1.507# 0.493#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q24	2.64	0.0749	(1;2;3)	

$\chi^2=5.196$ $p=0.074$ $C=0.182$ $N=151$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.10 Question 3.10 (Code Q25/Q26/Q27/Q28)

The tenth question of part C asked respondents to indicate a rank order for different items with the greatest priority for change, for project management to be implemented. The first item concerned the functions and tasks of personnel, the second, the control and decision procedures inside the department, the third, the overall direction and objectives of the department, and finally, the attitudes of individuals and groups. The results were as indicated in tables 4.48 and 4.49.

Table 4.48: Rank order of items with the greatest priority for change to implement project management and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q25 FUNCTIONS	2.435	(2)	2.374	(2)	2.342	(2)	2.384	(2)
	1.841		1.024		0.955		1.273	
Q26 PROCEDURES	2.136	(1)	2.292	(1)	2.203	(1)	2.210	(1)
	0.869		0.976		0.901		0.915	
Q27 DIRECTION	2.727	(3)	2.585	(3)	2.851	(4)	2.721	(3)
	1.369		1.125		1.216		1.236	
Q28 ATTITUDES	3.046	(4)	2.773	(4)	2.605	(3)	2.808	(4)
	1.041		1.148		1.171		1.120	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q25	0.05		0.9523		(A;B;C)			
Q26	0.30		0.7403		(A;B;C)			
Q27	0.79		0.4561		(A;B;C)			
Q27	1.10		0.3367		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.49: Rank order of items with the greatest priority for change to implement project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q25 FUNCTIONS	2.181 0.936	(2)	2.486 1.419	(3)	2.540 1.067	(3)	2.402 1.140	(2)
Q26 PROCEDURES	2.143 0.883	(1)	2.343 0.963	(1)	2.328 1.053	(1)	2.271 0.966	(1)
Q27 DIRECTION	2.985 1.206	(4)	2.470 1.144	(2)	2.520 1.152	(2)	2.658 1.167	(3)
Q28 ATTITUDES	2.792 1.135	(3)	2.825 1.184	(4)	2.611 1.146	(4)	2.742 1.155	(4)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q25	1.62		0.2013		(1;2;3)			
Q26	0.85		0.4303		(1;2;3)			
Q27	3.66		0.0278*		(1;2;3)			
Q27	0.39		0.6753		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

4.5.11 Question 3.11 (Code Q29/Q30/Q31/Q32)

The eleventh question of part C asked respondents to indicate a rank order for different methods which they believed would be the most appropriate for project management to be implemented. The first method was labelled technological, the second, structural, the third, managerial and the final one, the human-oriented method. The results were as indicated in tables 4.50 and 4.51.

Table 4.50: Rank order of methods most appropriate to implement project management and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q29 TECHNOLOGIC	3.119	(3)	3.112	(4)	3.067	(4)	3.099	(4)
	0.877		0.920		1.080		0.959	
Q30 STRUCTURAL	2.071	(2)	2.038	(1)	2.163	(1)	2.091	(1)
	1.040		1.028		1.104		1.057	
Q31 MANAGERIAL	3.205	(4)	2.778	(3)	2.449	(3)	2.811	(3)
	1.846		1.327		1.026		1.400	
Q32 HUMAN-ORIENT	1.929	(1)	2.234	(2)	2.320	(2)	2.161	(2)
	1.052		1.320		1.101		1.158	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q29	0.04		0.9636		(A;B;C)			
Q30	0.22		0.8013		(A;B;C)			
Q31	2.41		0.0928		(A;B)(B;C)			
Q32	0.74		0.4806		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.51: Rank order of methods most appropriate to implement project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q29 TECHNOLOGIC	2.902	(3)	3.146	(4)	3.308	(4)	3.118	(4)
	1.004		0.981		0.898		0.961	
Q30 STRUCTURAL	1.982	(1)	2.079	(1)	2.326	(2)	2.129	(1)
	1.015		0.985		1.163		1.054	
Q31 MANAGERIAL	3.058	(4)	2.622	(3)	2.468	(3)	2.716	(3)
	1.060		1.410		1.669		1.379	
Q32 HUMAN-ORIENT	2.127	(2)	2.402	(2)	2.134	(1)	2.221	(2)
	1.074		1.475		1.057		1.202	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q29	2.17		0.1171		(1;2;3)			
Q30	1.22		0.2990		(1;2;3)			
Q31	2.89		0.0586		(1;2;3)			
Q32	0.93		0.3952		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order

4.5.12 Question 3.12 (Code Q33)

The twelfth question of part C asked respondents to indicate which of two identified change policies would be best suited for implementing project management. The policies dealt with either immediate or gradual implementation. The results were as indicated in tables 4.52 and 4.53.

Table 4.52: Change policies for implementing project management and one-way analysis of variance between means per managerial group

CHANGE POLICIES	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
GRADUAL (w1)	14	61% 15%	56	58% 60%	23	52% 25%	93 57%
IMMEDIATE (w2)	9	39% 13%	40	42% 57%	21	48% 30%	70 43%
TOTAL %T	23	14%	96	59%	44	27%	163 100% 100%
\bar{X}	1.409		1.426		1.465		1.433#
S	0.499		0.496		0.505		0.500#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q33	0.12		0.8834		(A;B;C)		

$\chi^2=0.611$ p=0.737 C=0.061 N=163 #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.53: Change policies for implementing project management and one-way analysis of variance between means per application group

CHANGE POLICIES	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
GRADUAL (w1)	35	50% 38%	40	65% 43%	18	55% 19%	93 56%
IMMEDIATE (w2)	35	50% 48%	22	35% 31%	15	45% 21%	72 44%
TOTAL %T	70	42%	62	38%	33	20%	165 100% 100%
\bar{X}	1.500		1.355		1.455		1.437#
S	0.504		0.482		0.506		0.497#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q33	1.44		0.2411		(1;2;3)		

$\chi^2=2.872$ p=0.238 C=0.131 N=165 #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.13 Question 3.13 (Code Q34/Q35/Q36/Q37)

The thirteenth question of part C asked respondents to indicate a rank order for different strategies which would be the most appropriate for project management to be implemented. The first strategy was labelled facilitative, the second, informational, the third, attitudinal and the final one, political. The results were as indicated in tables 4.54 and 4.55.

Table 4.54: Rank order of strategies most appropriate to implement project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#	
	X	RO	X	RO	X	RO	X	RO
	S N=23		S N=97		S N=45		S N=165	
Q34 FACILITATIVE	2.146 1.944	(2)	2.173 1.351	(2)	2.011 1.100	(2)	2.110 1.465	(2)
Q35 INFORMATIONAL	1.715 0.572	(1)	2.122 1.416	(1)	1.905 0.768	(1)	1.914 0.918	(1)
Q36 ATTITUDINAL	2.908 0.812	(3)	2.429 0.882	(3)	2.530 0.900	(3)	2.622 0.865	(3)
Q37 POLITICAL	3.686 0.701	(4)	3.532 0.867	(4)	3.553 0.837	(4)	3.590 0.802	(4)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q34	0.20		0.8164		(A;B;C)			
Q35	1.20		0.3052		(A;B;C)			
Q36	2.50		0.0853		(A;B;C)			
Q37	0.29		0.7514		(A;B;C)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

Table 4.55: Rank order of strategies most appropriate to implement project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q34 FACILTATIVE	1.974 1.414	(1)	2.384 1.450	(2)	1.947 1.053	(1)	2.102 1.306	(2)
Q35 INFORNATIONAL	2.189 1.545	(2)	1.747 0.768	(1)	2.174 0.867	(2)	2.036 1.060	(1)
Q36 ATTITUDINAL	2.585 0.844	(3)	2.484 0.934	(3)	2.379 0.960	(3)	2.483 0.913	(3)
Q37 POLITICAL	3.600 0.846	(4)	3.536 0.802	(4)	3.500 0.919	(4)	3.545 0.856	(4)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q34	1.84		0.1622		(1;2;3)			
Q35	2.63		0.0749		(1;2;3)			
Q36	0.61		0.5465		(1;2;3)			
Q37	0.18		0.8339		(1;2;3)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

4.5.14 Question 3.14 (Code Q38/Q39/Q40)

The fourteenth question of part C asked respondents to indicate a rank order for the activities they regard as the most critical elements for project management to be implemented. The first activity had to do with the feasibility study prior to implementation, the second, the actual implementation, and the final one, supporting the implementation. The results were as indicated in tables 4.56 and 4.57.

Table 4.56: Rank order of activities most critical for implementing project management and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q38 FEASIBILITY	3.755 2.024	(3)	3.382 1.526	(2)	3.462 1.812	(2)	3.533 1.787	(3)
Q39 IMPLEMENTING	3.005 1.235	(1)	3.441 1.377	(3)	3.209 1.319	(1)	3.218 1.310	(1)
Q40 SUPPORTING	3.537 1.322	(2)	3.211 1.069	(1)	3.481 1.817	(3)	3.410 1.403	(2)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q38	0.43		0.6484		(A;B;C)			
Q39	1.11		0.3331		(A;B;C)			
Q40	1.25		0.2880		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.57: Rank order of activities most critical for implementing project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q38 FEASIBILITY	3.391 1.711	(2)	3.547 1.740	(3)	3.343 1.549	(2)	3.427 1.667	(3)
Q39 IMPLEMENTING	3.465 1.252	(3)	3.303 1.436	(2)	3.000 1.312	(1)	3.256 1.333	(1)
Q40 SUPPORTING	3.285 1.223	(1)	3.255 0.988	(1)	3.657 1.138	(3)	3.399 1.116	(2)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q38	0.21		0.8118		(1;2;3)			
Q39	1.36		0.2600		(1;2;3)			
Q40	1.57		0.2111		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

4.5.15 Question 3.15 (Code Q41-Q44/Q45-Q48/Q49-Q52)

The fifteenth question of part C asked respondents to indicate a rank order for different people, whom they believed would be the best suited to fulfil certain positions for project management to be implemented. The first category was top-level managers, the second, middle managers, the third, functional managers and the final one, project managers. The positions listed were first, the change manager, second, the change agent, and lastly, the change target. The results were as indicated in tables 4.58 to 4.63.

Table 4.58: Rank order of persons best suited to fulfil the position of change manager and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=11		S N=56		S N=24		S N=91	
Q41 TOP-LEVEL	1.818 1.250	(1)	1.796 1.171	(1)	2.174 1.424	(2)	1.929 1.282	(1)
Q42 MIDDLE MGMT	2.182 0.603	(2)	2.259 0.726	(2)	2.130 0.762	(1)	2.190 0.697	(2)
Q43 FUNCTIONAL	3.000 0.775	(3)	2.926 0.999	(3)	2.957 0.776	(4)	2.961 0.850	(4)
Q44 PROJECT MGMT	3.000 1.183	(3)	3.019 1.079	(4)	2.739 1.179	(3)	2.919 1.147	(3)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q41	0.75		0.4777		(A;B;C)			
Q42	0.27		0.7649		(A;B;C)			
Q43	0.03		0.9680		(A;B;C)			
Q44	0.53		0.5881		(A;B;C)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

Table 4.59: Rank order of persons best suited to fulfil the position of change manager and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X} S	RO N=39	\bar{X} S	RO N=34	\bar{X} S	RO N=19	\bar{X} S	RO N=92
Q41 TOP-LEVEL	1.359 0.873	(1)	2.294 1.292	(2)	2.167 1.505	(2)	1.940 1.223	(1)
Q42 MIDDLE MGMT	2.359 0.668	(2)	2.147 0.744	(1)	2.111 0.832	(1)	2.206 0.748	(2)
Q43 FUNCTIONAL	3.051 0.724	(3)	2.852 1.105	(4)	2.833 0.857	(3)	2.912 0.895	(3)
Q44 PROJECT MGMT	3.231 1.012	(4)	2.706 1.169	(3)	2.889 1.023	(4)	2.942 1.068	(4)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q41	6.42		0.0025*		(1)(2;3)			
Q42	1.06		0.3495		(1;2;3)			
Q43	0.57		0.5673		(1;2;3)			
Q44	2.22		0.1143		(1;2;3)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups
*Result statistically significant at 0.05 level

Table 4.60: Rank order of persons best suited to fulfil the position of change agent and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X} S	RO N=11	\bar{X} S	RO N=56	\bar{X} S	RO N=24	\bar{X} S	RO N=91
Q45 TOP-LEVEL	3.273 1.104	(4)	2.870 1.182	(4)	2.955 1.128	(4)	3.033 1.138	(4)
Q46 MIDDLE MGMT	2.000 0.894	(1)	2.204 0.974	(1)	1.773 0.887	(1)	1.992 0.918	(1)
Q47 FUNCTIONAL	2.273 1.001	(2)	2.704 1.018	(3)	2.682 0.982	(3)	2.553 1.000	(3)
Q48 PROJECT MGMT	2.455 1.214	(3)	2.222 1.160	(2)	2.591 1.201	(2)	2.423 1.192	(2)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q45	0.54		0.5843		(A;B;C)			
Q46	1.67		0.1948		(A;B;C)			
Q47	0.85		0.4320		(A;B;C)			
Q48	0.84		0.4339		(A;B;C)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

Table 4.61: Rank order of persons best suited to fulfil the position of change agent and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=39		S N=34		S N=19		S N=92	
Q45 TOP-LEVEL	2.421	(2)	3.273	(4)	3.316	(4)	3.003	(4)
	1.130		1.039		1.057		1.075	
Q46 MIDDLE MGMT	2.053	(1)	2.091	(1)	2.211	(2)	2.118	(1)
	1.114		0.914		0.855		0.961	
Q47 FUNCTIONAL	2.790	(4)	2.515	(3)	2.579	(3)	2.628	(3)
	0.905		1.064		1.071		1.013	
Q48 PROJECT MGMT	2.737	(3)	2.121	(2)	1.895	(1)	2.251	(2)
	1.201		1.083		1.049		1.111	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q45	7.06		0.0014*		(1)(2;3)			
Q46	0.16		0.8504		(1;2;3)			
Q47	0.71		0.4922		(1;2;3)			
Q48	4.45		0.0144*		(1;2)(2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level



Table 4.62: Rank order of persons best suited to fulfil the position of change target and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=11		S N=56		S N=24		S N=91	
Q49 TOP-LEVEL	3.182	(4)	3.315	(4)	3.095	(3)	3.197	(4)
	1.250		1.104		1.272		1.208	
Q50 MIDDLE MGMT	2.546	(3)	2.463	(3)	2.333	(2)	2.447	(3)
	0.522		0.761		0.894		0.726	
Q51 FUNCTIONAL	2.000	(1)	2.074	(1)	2.333	(2)	2.134	(1)
	1.183		1.032		1.002		1.072	
Q52 PROJECT MGMT	2.273	(2)	2.148	(2)	2.238	(1)	2.219	(2)
	1.191		1.166		1.211		1.189	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q49	0.30		0.7405		(A;B;C)			
Q50	0.32		0.7285		(A;B;C)			
Q51	0.57		0.5654		(A;B;C)			
Q52	0.08		0.9233		(A;B;C)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

Table 4.63: Rank order of persons best suited to fulfil the position of change target and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=39		S N=34		S N=19		S N=92	
Q49 TOP-LEVEL	3.378	(4)	3.303	(4)	2.737	(3)	3.139	(4)
	1.063		1.015		1.408		1.162	
Q50 MIDDLE MGMT	2.757	(3)	2.424	(3)	2.000	(1)	2.394	(3)
	0.683		0.830		0.667		0.726	
Q51 FUNCTIONAL	1.946	(2)	2.242	(2)	2.368	(2)	2.185	(1)
	0.880		1.119		1.116		1.038	
Q52 PROJECT MGMT	1.919	(1)	2.030	(1)	2.895	(4)	2.281	(2)
	1.115		1.104		1.049		1.089	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q49	2.20		0.1173		(1;2;3)			
Q50	6.70		0.0020*		(1;2)(2;3)			
Q51	1.30		0.2784		(1;2;3)			
Q52	5.38		0.0063*		(1;2)(3)			

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

4.5.16 Question 3.16 (Code Q53/Q54/Q55)

The sixteenth question of part C asked respondents to indicate a rank order for sources of resistance they believed were the greatest barriers to project management being implemented. The first source of resistance was barriers to acceptance, second, barriers to acting, and the final one, barriers to understanding. The results were as indicated in tables 4.64 and 4.65.

Table 4.64: Rank order of sources of greatest resistance for implementing project management and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q53 ACCEPTANCE	2.202 0.906	(3)	2.125 0.855	(3)	2.233 0.794	(3)	2.187 0.852	(3)
Q54 ACTING	2.114 1.171	(2)	1.983 0.940	(2)	1.852 0.879	(1)	1.983 0.997	(2)
Q55 UNDERSTAND	1.869 0.687	(1)	1.937 0.696	(1)	1.915 0.689	(2)	1.907 0.691	(1)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q53	0.26		0.7703		(A;B;C)			
Q54	0.58		0.5587		(A;B;C)			
Q55	0.09		0.9179		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.65: Rank order of sources of greatest resistance for implementing project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q53 ACCEPTANCE	2.221 0.889	(3)	2.232 0.779	(3)	2.006 0.873	(2)	2.153 0.847	(3)
Q54 ACTING	1.921 0.984	(2)	2.025 0.968	(2)	1.919 0.860	(1)	1.955 0.937	(2)
Q55 UNDERSTAND	1.917 0.613	(1)	1.810 0.746	(1)	2.075 0.672	(3)	1.934 0.677	(1)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q53	0.87		0.4217		(1;2;3)			
Q54	0.23		0.7977		(1;2;3)			
Q55	1.61		0.2028		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

4.5.17 Question 3.17 (Code Q56)

The seventeenth question in part C of the questionnaire asked respondents to indicate whether project management as a formal policy, could easily fit in with the "way things were done" in their department and the "way people thought and acted". The results were as indicated in tables 4.66 and 4.67.

Table 4.66: "Easy fit" for project management in department and one-way analysis of variance between means per managerial group

EASY FIT FOR PROJECT MANAGEMENT	GROUP A N c% r%	GROUP B N c% r%	GROUP C N c% r%	TOTAL N %T
YES (w1)	19 83% 18%	57 61% 53%	31 69% 29%	107 66%
NO (w2)	4 17% 7%	37 39% 67%	14 31% 26%	55 34%
TOTAL %T	23 14%	94 58%	45 28%	162 100%
\bar{X} S	1.182 0.388	1.391 0.491	1.318 0.468	1.297# 0.449#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q56	1.81	0.1664	(A;B;C)	

$\chi^2=4.202$ $p=0.122$ $C=0.159$ $N=162$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.67: "Easy fit" for project management in department and one-way analysis of variance between means per application group

EASY FIT FOR PROJECT MANAGEMENT	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
YES (w1)	54 77% 51%	36 60% 34%	16 48% 15%	106 65%
NO (w2)	16 23% 28%	24 40% 42%	17 52% 30%	57 35%
TOTAL %T	70 43%	60 37%	33 20%	163 100% 100%
\bar{X} S	1.229 0.423	1.400 0.494	1.515 0.508	1.381# 0.475#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q56	4.76	0.0098**	(1;2)(2;3)	

$\chi^2=9.156$ $p=0.010^*$ $C=0.231$ $N=163$ #Average of 3 groups

*Results statistically significant at a 0.025 level where $\chi^2=7.378$ for 2 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at 0.05 level

4.5.18 Question 3.18 (Code Q57)

The eighteenth question in part C of the questionnaire asked respondents to indicate whether the existing organizational structure would have to be changed in order to accommodate implementing project management. The results were as indicated in tables 4.68 and 4.69.

Table 4.68: Change of organizational structure to implement project management and one-way analysis of variance between means per managerial group

CHANGE STRUCTURE	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
YES (w1)	12	52% 11%	71	73% 64%	28	62% 25%	111 67%
NO (w2)	11	48% 20%	26	27% 48%	17	38% 32%	54 33%
TOTAL %T	23	14%	97	59%	45	27%	165 100%
\bar{X} S	1.455 0.511		1.263 0.445		1.364 0.490		1.361# 0.482#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q57	1.83		0.1644		(A;B;C)		

$\chi^2=4.449$ $p=0.108$ $C=0.162$ $N=165$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

Table 4.69: Change of organizational structure to implement project management and one-way analysis of variance between means per application group

CHANGE STRUCTURE	GROUP I		GROUP II		GROUP III		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
YES (w1)	43	61% 38%	46	73% 40%	25	76% 22%	114 68%
NO (w2)	28	39% 53%	17	27% 32%	8	24% 15%	53 32%
TOTAL %T	71	42%	63	38%	33	20%	167 100%
\bar{X} S	1.394 0.492		1.270 0.447		1.242 0.435		1.302# 0.458#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q57	1.73		0.1801		(1;2;3)		

$\chi^2=3.455$ $p=0.178$ $C=0.142$ $N=167$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$

4.5.19 Question 3.19 (Code Q58/Q59/Q60)

The nineteenth question of part C asked respondents to indicate a rank order for the best means to ensure that once project management was implemented, it would remain effectively and efficiently applied. The first way was the departmental structure, second, support for management, and the final one, the positive actions of personnel. The results were as indicated in tables 4.70 and 4.71.

Table 4.70: Rank order of best means to ensure the continued application of project management and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q58 STRUCTURE	2.619 0.581	(3)	2.070 0.898	(3)	2.046 0.889	(3)	2.245 0.789	(3)
Q59 SUPPORT MGMT	1.864 1.072	(2)	1.933 0.750	(1)	1.921 0.735	(1)	1.906 0.852	(1)
Q60 PERSONNEL	1.714 0.883	(1)	2.039 0.888	(2)	2.034 0.801	(2)	1.929 0.857	(2)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q58	3.83		0.0238*		(A)(B;C)			
Q59	0.07		0.9356		(A;B;C)			
Q60	1.27		0.2850		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.71: Rank order of best means to ensure the continued application of project management and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X} S	RO N=71	\bar{X} S	RO N=63	\bar{X} S	RO N=33	\bar{X} S	RO N=167
Q58 STRUCTURE	2.151 0.884	(3)	2.171 0.899	(3)	2.030 0.847	(2)	2.117 0.876	(3)
Q59 SUPPORT MGMT	1.881 0.711	(1)	1.995 0.897	(2)	1.909 0.765	(1)	1.928 0.791	(1)
Q60 PERSONNEL	2.034 0.955	(2)	1.898 0.802	(1)	2.061 0.827	(3)	1.998 0.861	(2)
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q58	0.30		0.7443		(1;2;3)			
Q59	0.35		0.7035		(1;2;3)			
Q60	0.50		0.6096		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

4.5.20 Question 3.20 (Code Q61/Q62/Q63)

The twentieth question of part C asked respondents to indicate a rank order for the most effective managerial assignment position to oversee the implementation of project management. The first position was managers from outside the department, second, managers within the department, and the final one, managers from both outside and within the department. The results were as indicated in tables 4.72 and 4.73.

Table 4.72: Rank order of most effective managerial assignment position for project management implementation and one-way analysis of variance between means per managerial group

ITEM CODES	GROUP A		GROUP B		GROUP C		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=23		S N=97		S N=45		S N=165	
Q61 OUTSIDE MGMT	2.736	(3)	2.578	(3)	2.636	(3)	2.650	(3)
	0.995		0.642		0.712		0.783	
Q62 INSIDE MGMT	1.543	(1)	1.774	(1)	1.460	(1)	1.592	(1)
	0.689		1.079		0.707		0.825	
Q63 BOTH MGMT	1.876	(2)	1.786	(2)	1.904	(2)	1.855	(2)
	0.675		0.674		0.614		0.654	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q61	0.46		0.6321		(A;B;C)			
Q62	1.84		0.1619		(A;B;C)			
Q63	0.53		0.5895		(A;B;C)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.73: Rank order of most effective managerial assignment position for project management implementation and one-way analysis of variance between means per application group

ITEM CODES	GROUP I		GROUP II		GROUP III		TOTAL#	
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO
	S N=71		S N=63		S N=33		S N=167	
Q61 OUTSIDE MGMT	2.646	(3)	2.625	(3)	2.546	(3)	2.605	(3)
	0.607		0.807		0.711		0.708	
Q62 INSIDE MGMT	1.678	(1)	1.663	(1)	1.576	(1)	1.639	(1)
	1.044		0.925		0.751		0.907	
Q63 BOTH MGMT	1.802	(2)	1.838	(2)	1.879	(2)	1.839	(2)
	0.648		0.641		0.696		0.662	
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping			
Q61	0.23		0.7963		(1;2;3)			
Q62	0.14		0.8722		(1;2;3)			
Q63	0.16		0.8537		(1;2;3)			

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

4.6 FORCE FIELD ANALYSIS OF PROJECT MANAGEMENT

4.6.1 Question 4.1 (Code P1-P14/S1-S9/O1-O8/J1-J10/H1-H6)

The first question in part D of the questionnaire asked respondents to indicate the relative importance of the factors which they believed would contribute to the implementation of project management. The different factors were classified into five main categories: philosophical (P1-P14), situational (S1-S9), organizational (O1-O8), job-dimensional (J1-J10) and human-oriented factors (H1-H6). The results of the one-way analysis of variance between the means of the different groups were as indicated in tables 4.74 to 4.83. The results of the factor analysis within the five main categories were as indicated in tables 4.84 to 4.88. Note that the item codes used refer to the factors identified in the questionnaire (attached in Annexure B).

Table 4.74: Rank order of philosophical factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
	S	N=23	S	N=97	S	N=45	S	N=165			
P1	1.500 0.730	(4)	1.368 0.583	(2)	1.296 0.506	(2)	1.388 0.606	(2)	0.89	0.4141	(A;B;C)
P2	2.333 1.041	(11)	1.968 0.989	(12)	1.818 0.834	(10)	2.040 0.955	(12)	2.09	0.1272	(A;B;C)
P3	1.682 0.714	(7)	1.568 0.749	(7)	1.682 0.889	(8)	1.644 0.784	(7)	0.42	0.6561	(A;B;C)
P4	1.455 0.590	(3)	1.351 0.577	(1)	1.432 0.583	(3)	1.413 0.583	(3)	0.45	0.6362	(A;B;C)
P5	1.636 0.902	(6)	1.632 0.782	(8)	1.727 0.773	(9)	1.665 0.819	(8)	0.23	0.7968	(A;B;C)
P6	1.524 0.680	(5)	1.505 0.752	(5)	1.455 0.659	(4)	1.495 0.697	(5)	0.10	0.9093	(A;B;C)
P7	1.500 0.665	(4)	1.558 0.677	(6)	1.591 0.723	(7)	1.550 0.688	(6)	0.13	0.8808	(A;B;C)
P8	1.773 0.864	(8)	1.726 0.907	(9)	1.818 1.014	(10)	1.772 0.928	(9)	0.15	0.8595	(A;B;C)
P9	1.182 0.388	(1)	1.368 0.651	(2)	1.273 0.506	(1)	1.274 0.515	(1)	1.08	0.3422	(A;B;C)
P10	1.500 0.730	(4)	1.463 0.595	(3)	1.523 0.757	(5)	1.495 0.694	(5)	0.13	0.8807	(A;B;C)
P11	1.773 0.689	(8)	1.819 0.749	(10)	2.046 0.812	(12)	1.879 0.750	(10)	1.58	0.2099	(A;B;C)
P12	2.091 0.878	(9)	1.853 0.755	(11)	1.886 0.842	(11)	1.943 0.825	(11)	0.80	0.4499	(A;B;C)
P13	1.409 0.656	(2)	1.484 0.614	(4)	1.568 0.723	(6)	1.487 0.664	(4)	0.48	0.6223	(A;B;C)
P14	2.182 0.887	(10)	2.076 0.820	(13)	2.095 0.763	(13)	2.118 0.823	(13)	0.15	0.8610	(A;B;C)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.75: Rank order of philosophical factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I X RO S N=71		GROUP II X RO S N=63		GROUP III X RO S N=33		TOTAL# X RO S N=167		F-value	p-value	Tukey's grouping
P1	1.352 0.537	(3)	1.413 0.687	(1)	1.303 0.529	(2)	1.356 0.584	(2)	0.40	0.6740	(1;2;3)
P2	1.757 0.842	(11)	2.143 0.998	(12)	2.182 1.014	(8)	2.027 0.951	(13)	3.68	0.0273*	(1;2;3)
P3	1.563 0.788	(8)	1.651 0.722	(6)	1.546 0.794	(4)	1.587 0.768	(8)	0.30	0.7436	(1;2;3)
P4	1.338 0.559	(2)	1.500 0.621	(3)	1.242 0.502	(1)	1.360 0.561	(3)	2.50	0.0849	(1;2;3)
P5	1.592 0.709	(9)	1.778 0.812	(9)	1.636 0.994	(5)	1.669 0.838	(9)	0.92	0.4012	(1;2;3)
P6	1.386 0.621	(4)	1.571 0.665	(5)	1.546 0.938	(4)	1.501 0.741	(6)	1.27	0.2839	(1;2;3)
P7	1.437 0.603	(7)	1.667 0.672	(7)	1.636 0.859	(5)	1.580 0.711	(7)	2.12	0.1239	(1;2;3)
P8	1.662 0.844	(10)	1.921 0.938	(10)	1.697 1.015	(6)	1.760 0.932	(10)	1.45	0.2374	(1;2;3)
P9	1.225 0.453	(1)	1.444 0.713	(2)	1.303 0.585	(2)	1.324 0.584	(1)	2.33	0.1002	(1;2;3)
P10	1.394 0.573	(5)	1.683 0.758	(8)	1.303 0.529	(2)	1.460 0.620	(4)	5.02	0.0077*	(1;2)(1;3)
P11	1.871 0.741	(12)	1.968 0.782	(11)	1.697 0.728	(6)	1.845 0.750	(11)	1.40	0.2493	(1;2;3)
P12	1.944 0.876	(13)	1.968 0.740	(11)	1.636 0.699	(5)	1.849 0.772	(12)	2.15	0.1195	(1;2;3)
P13	1.423 0.577	(6)	1.556 0.713	(4)	1.485 0.667	(3)	1.488 0.652	(5)	0.70	0.4977	(1;2;3)
P14	2.000 0.780	(14)	2.237 0.795	(13)	2.061 0.864	(7)	2.099 0.813	(14)	1.44	0.2390	(1;2;3)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.76: Rank order of situational factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X} S	RO N=23	\bar{X} S	RO N=97	\bar{X} S	RO N=45	\bar{X} S	RO N=165			
S1	1.227 0.422	(1)	1.190 0.492	(1)	1.296 0.661	(1)	1.238 0.525	(1)	0.59	0.5580	(A;B;C)
S2	2.095 0.921	(6)	2.236 1.055	(9)	2.233 1.123	(7)	2.188 1.033	(7)	0.16	0.8554	(A;B;C)
S3	2.524 1.058	(9)	2.191 1.053	(7)	2.163 0.971	(6)	2.293 1.027	(8)	1.00	0.3708	(A;B;C)
S4	1.955 0.733	(5)	1.884 0.869	(5)	1.698 0.758	(4)	1.846 0.787	(5)	1.00	0.3713	(A;B;C)
S5	2.500 0.790	(8)	2.192 0.918	(8)	2.296 0.905	(8)	2.329 0.871	(9)	1.11	0.3337	(A;B;C)
S6	1.364 0.583	(2)	1.674 0.800	(3)	1.705 0.787	(5)	1.581 0.723	(3)	1.64	0.1978	(A;B;C)
S7	1.682 0.765	(4)	1.705 0.724	(4)	1.614 0.684	(3)	1.667 0.724	(4)	0.24	0.7861	(A;B;C)
S8	1.636 0.722	(3)	1.579 0.703	(2)	1.386 0.614	(2)	1.534 0.680	(2)	1.46	0.2350	(A;B;C)
S9	2.182 1.072	(7)	2.063 0.977	(6)	2.296 1.022	(8)	2.180 1.024	(6)	0.82	0.4423	(A;B;C)

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

Table 4.77: Rank order of situational factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I		GROUP II		GROUP III		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
S1	1.197 0.524	(1)	1.254 0.595	(1)	1.182 0.392	(1)	1.211 0.504	(1)	0.27	0.7600	(1;2;3)
S2	2.063 1.001	(6)	2.333 1.078	(9)	2.375 1.100	(7)	2.257 1.060	(7)	1.41	0.2464	(1;2;3)
S3	2.172 1.047	(9)	2.175 0.976	(6)	2.625 1.129	(9)	2.324 1.051	(9)	2.43	0.0917	(1;2;3)
S4	1.857 0.839	(5)	1.952 0.792	(4)	1.727 0.839	(5)	1.845 0.823	(5)	0.82	0.4410	(1;2;3)
S5	2.169 0.862	(8)	2.290 0.816	(8)	2.394 1.059	(8)	2.284 0.912	(8)	0.78	0.4585	(1;2;3)
S6	1.563 0.649	(4)	1.746 0.803	(3)	1.636 0.962	(4)	1.648 0.805	(3)	0.93	0.3983	(1;2;3)
S7	1.465 0.629	(3)	1.984 0.707	(5)	1.546 0.754	(3)	1.665 0.697	(4)	10.36	0.0001*	(1;3)(2)
S8	1.394 0.573	(2)	1.714 0.682	(2)	1.515 0.834	(2)	1.541 0.696	(2)	3.81	0.0242*	(1;3)(2;3)
S9	2.129 1.020	(7)	2.238 0.962	(7)	2.030 1.075	(6)	2.132 1.019	(6)	0.49	0.6152	(1;2;3)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.78: Rank order of organizational factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#	F-value	p-value	Tukey's grouping	
	\bar{X} S	RO N=23	\bar{X} S	RO N=97	\bar{X} S	RO N=45					\bar{X} S
O1	2.364 0.974	(4)	1.840 0.910	(4)	1.591 0.654	(1)	1.932 0.846	(3)	6.01	0.0030*	(A)(B;C)
O2	2.227 0.850	(3)	1.564 0.778	(2)	1.750 0.894	(3)	1.847 0.841	(2)	6.18	0.0026*	(A)(B;C)
O3	2.429 0.953	(5)	2.132 0.792	(6)	2.333 0.846	(5)	2.298 0.864	(5)	1.61	0.2033	(A;B;C)
O4	2.046 0.853	(2)	1.832 0.731	(3)	2.140 0.765	(4)	2.006 0.783	(4)	2.70	0.0706	(A;B;C)
O5	2.682 0.982	(6)	2.330 1.092	(8)	2.364 1.053	(6)	2.459 1.042	(7)	0.98	0.3776	(A;B;C)
O6	2.727 1.137	(8)	1.989 0.857	(5)	2.381 0.728	(7)	2.366 0.907	(6)	7.50	0.0008*	(A;C)(B;C)
O7	1.952 1.019	(1)	1.547 0.692	(1)	1.744 0.859	(2)	1.748 0.857	(1)	2.72	0.0691	(A;B;C)
O8	2.700 0.966	(7)	2.277 0.919	(7)	2.405 0.979	(8)	2.461 0.955	(8)	1.70	0.1863	(A;B;C)

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups
*Result statistically significant at 0.05 level

Table 4.79: Rank order of organizational factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I		GROUP II		GROUP III		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
	S	N=71	S	N=63	S	N=33	S	N=167			
O1	1.958 0.963	(4)	1.810 0.780	(2)	1.719 0.851	(3)	1.829 0.865	(3)	0.96	0.3849	(1;2;3)
O2	1.688 0.724	(2)	1.841 0.846	(3)	1.688 0.965	(2)	1.739 0.845	(2)	1.24	0.2924	(1;2;3)
O3	2.118 0.744	(5)	2.288 0.832	(6)	2.303 1.015	(7)	2.236 0.864	(6)	0.86	0.4230	(1;2;3)
O4	1.857 0.767	(3)	2.000 0.783	(4)	1.970 0.770	(4)	1.942 0.773	(4)	0.61	0.5446	(1;2;3)
O5	2.386 1.107	(7)	2.444 0.980	(8)	2.212 1.193	(5)	2.347 1.093	(7)	0.51	0.6014	(1;2;3)
O6	2.232 0.926	(6)	2.213 0.897	(5)	2.242 0.969	(6)	2.229 0.931	(5)	0.01	0.9876	(1;2;3)
O7	1.681 0.831	(1)	1.730 0.745	(1)	1.515 0.755	(1)	1.642 0.777	(1)	0.83	0.4361	(1;2;3)
O8	2.397 0.917	(8)	2.397 0.943	(7)	2.323 1.045	(8)	2.372 0.968	(8)	0.08	0.9264	(1;2;3)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.80: Rank order of job-dimensional factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X} S	RO N=23	\bar{X} S	RO N=97	\bar{X} S	RO N=45	\bar{X} S	RO N=165			
J1	1.682 0.714	(4)	1.221 0.468	(1)	1.364 0.529	(2)	1.422 0.570	(3)	7.10	0.0011*	(A)(B;C)
J2	1.955 0.878	(5)	1.642 0.865	(6)	1.705 0.895	(7)	1.767 0.879	(6)	1.13	0.3256	(A;B;C)
J3	1.636 0.656	(3)	1.516 0.694	(4)	1.523 0.757	(4)	1.558 0.702	(4)	0.26	0.7676	(A;B;C)
J4	1.500 0.665	(2)	1.611 0.758	(5)	1.614 0.650	(5)	1.575 0.691	(5)	0.23	0.7977	(A;B;C)
J5	2.182 0.834	(6)	2.075 0.871	(9)	2.114 0.804	(9)	2.124 0.836	(8)	0.15	0.8651	(A;B;C)
J6	1.636 0.656	(3)	1.516 0.751	(4)	1.523 0.589	(4)	1.558 0.665	(4)	0.28	0.7570	(A;B;C)
J7	2.182 0.968	(6)	1.737 0.916	(7)	1.636 0.806	(6)	1.852 0.897	(7)	2.90	0.0579	(A;B)(B;C)
J8	1.318 0.559	(1)	1.284 0.520	(2)	1.409 0.539	(3)	1.337 0.539	(2)	0.83	0.4383	(A;B;C)
J9	1.318 0.559	(1)	1.295 0.524	(3)	1.341 0.603	(1)	1.318 0.562	(1)	0.11	0.8986	(A;B;C)
J10	2.636 1.118	(7)	1.842 1.058	(8)	2.000 0.965	(8)	2.159 1.047	(9)	5.13	0.0070*	(A)(B;C)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups
*Result statistically significant at 0.05 level

Table 4.81: Rank order of job-dimensional factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I		GROUP II		GROUP III		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
J1	1.225 0.421	(2) S N=71	1.429 0.588	(2) S N=63	1.303 0.637	(2) S N=33	1.319 0.549	(2) S N=167	2.43	0.0911	(1;2;3)
J2	1.549 0.807	(6)	1.921 0.989	(7)	1.576 0.663	(5)	1.682 0.820	(7)	3.54	0.0314*	(1;2;3)
J3	1.479 0.652	(4)	1.651 0.765	(3)	1.394 0.659	(4)	1.508 0.692	(4)	1.76	0.1755	(1;2;3)
J4	1.493 0.582	(5)	1.698 0.733	(4)	1.667 0.990	(6)	1.619 0.768	(6)	1.45	0.2366	(1;2;3)
J5	2.000 0.862	(9)	2.145 0.743	(8)	2.313 1.030	(9)	2.153 0.878	(10)	1.53	0.2191	(1;2;3)
J6	1.479 0.606	(4)	1.714 0.792	(5)	1.364 0.603	(3)	1.519 0.667	(5)	3.44	0.0342*	(1;2)(1;3)
J7	1.690 0.855	(7)	1.905 0.893	(6)	1.697 1.015	(7)	1.764 0.921	(8)	1.09	0.3394	(1;2;3)
J8	1.296 0.518	(3)	1.397 0.555	(1)	1.273 0.574	(1)	1.322 0.549	(3)	0.80	0.4508	(1;2;3)
J9	1.183 0.425	(1)	1.397 0.525	(1)	1.364 0.742	(3)	1.315 0.564	(1)	2.94	0.0559	(1;2;3)
J10	1.817 1.060	(8)	2.238 1.043	(9)	1.818 1.074	(8)	1.958 1.059	(9)	3.11	0.0471*	(1;2;3)

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.82: Rank order of human-oriented factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
	S	N=23	S	N=97	S	N=45	S	N=165			
H1	1.227 0.422	(1)	1.232 0.516	(1)	1.386 0.576	(1)	1.282 0.505	(1)	1.42	0.2457	(A;B;C)
H2	1.227 0.518	(1)	1.362 0.545	(2)	1.477 0.588	(3)	1.355 0.550	(2)	1.55	0.2160	(A;B;C)
H3	1.409 0.656	(2)	1.421 0.610	(3)	1.409 0.618	(2)	1.413 0.628	(3)	0.01	0.9928	(A;B;C)
H4	2.500 1.123	(5)	2.340 1.053	(6)	2.205 1.002	(6)	2.348 1.059	(6)	0.60	0.5522	(A;B;C)
H5	1.818 0.650	(3)	1.716 0.800	(4)	1.705 0.695	(4)	1.746 0.715	(4)	0.19	0.8263	(A;B;C)
H6	2.046 0.878	(4)	1.926 0.909	(5)	1.955 0.796	(5)	1.976 0.861	(5)	0.16	0.8497	(A;B;C)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

Table 4.83: Rank order of human-oriented factors according to relative importance for contributing to the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I		GROUP II		GROUP III		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
	S	N=71	S	N=63	S	N=33	S	N=167			
H1	1.169 0.377	(1)	1.413 0.663	(1)	1.212 0.415	(1)	1.265 0.485	(1)	4.06	0.0190*	(1;3)(2;3)
H2	1.268 0.506	(2)	1.508 0.619	(3)	1.406 0.560	(2)	1.394 0.562	(2)	3.09	0.0484*	(1;2;3)
H3	1.366 0.660	(3)	1.444 0.590	(2)	1.424 0.561	(3)	1.411 0.604	(3)	0.29	0.7519	(1;2;3)
H4	2.254 1.010	(6)	2.286 1.054	(6)	2.625 1.128	(6)	2.239 1.064	(6)	1.50	0.2256	(1;2;3)
H5	1.634 0.615	(4)	1.794 0.744	(4)	1.788 0.960	(4)	1.739 0.773	(4)	0.92	0.3989	(1;2;3)
H6	1.859 0.833	(5)	2.064 0.896	(5)	1.909 0.947	(5)	1.944 0.892	(5)	0.94	0.3943	(1;2;3)

One-way ANOVA with $\alpha=0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level



Table 4.84: VARIMAX-rotated four-factor pattern of items P1-P14 of "philosophical success factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	FACTOR 3#	FACTOR 4#	Communality*
P14	0.6848				0.5108
P12	0.6449				0.4872
P11	0.5544	0.4861			0.5496
P5	0.5251				0.3422
P13	0.3575				0.2261
P10	0.3472	0.3348			0.2611
P6		0.5769			0.3927
P7		0.4935			0.3643
P4		0.4522			0.2203
P8			0.6597		0.4544
P9			0.5987		0.4562
P1			0.3722		0.2187
P3					0.1792
P2				0.6983	0.5001
Cronbach α	0.7708	0.7013**	0.7138**		

Shaded area in factor columns indicates where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the four factors

**Adjusted with the Spearman-Brown formula for comparison purposes

Table 4.85: VARIMAX-rotated three-factor pattern of items S1-S9 of "situational success factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	FACTOR 3#	Communality*
S7	0.7114			0.5445
S8	0.4926			0.2705
S9	0.4332			0.2542
S1				0.0962
S5		0.7903		0.5229
S4		0.6627		0.5782
S6	0.3606	0.3787		
S3			0.7145	0.5574
S2		0.4935	0.6894	0.5574
Cronbach α	0.5742	0.6817		

Shaded area in factor columns indicate where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the three factors

Table 4.86: VARIMAX-rotated two-factor pattern of items O1-O8 of "organizational success factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	Communality*
O3	0.6307	0.3155	0.4974
O8	0.6306		0.4343
O6	0.6106		0.3901
O4	0.5802		0.3526
O7	0.3657	0.3518	0.2574
O1		0.7010	0.4917
O2	0.3236	0.5225	0.3777
O5		0.4129	0.2329
Cronbach α	0.7324	0.6849**	

Shaded area in factor columns indicate where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the two factors

**Adjusted with the Spearman-Brown formula for comparison purposes

Table 4.87: VARIMAX-rotated three-factor pattern of items J1-J10 of "job-dimensional success factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	FACTOR 3#	Communality*
J1	0.6250			0.4037
J2	0.5952			0.3637
J3	0.4878			0.3455
J4	0.4526			0.3447
J5	0.3928			0.2748
J7	0.3235			0.1885
J8		0.7840		0.6363
J6	0.3148	0.5835		0.4437
J9		0.5468		0.3443
J10			0.7508	0.5860
Cronbach α	0.6845	0.7959**		

Shaded area in factor columns indicate where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the three factors

**Adjusted with the Spearman-Brown formula for comparison purposes

Table 4.88: VARIMAX-rotated two-factor pattern of items H1-H6 of "human-oriented success factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	Communality*
H6	0.6018		0.4026
H4	0.5173		0.2677
H5	0.7172		0.3150
H3	0.3504		0.1746
H2		0.7430	0.6312
H1		0.6290	0.4027
Cronbach α	0.5862		

Shaded area in factor columns indicate where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the two factors

4.6.2 Question 4.2 (Code C1-C13)

The second question in part D of the questionnaire asked respondents to

indicate the relative importance of the factors which they believed would restrain the implementation of project management. The results of the one-way analysis of variance between the means for the different groups were as indicated in tables 4.89 and 4.90. The results of the factor analysis for the combined restraining factors were as indicated in table 4.91.

Table 4.89: Rank order of combined restraining factors according to relative importance for restraining the implementation of project management and one-way analysis of variance between means per managerial group

ITEM CODE	GROUP A		GROUP B		GROUP C		TOTAL#		F-value	p-value	Tukey's grouping
	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO	\bar{X}	RO			
	S	N=23	S	N=97	S	N=45	S	N=165			
C1	2.273	(3)	1.642	(4)	1.909	(4)	1.941	(4)	5.72	0.0040*	(A;C)(B;C)
	1.054		0.662		0.982		0.899				
C2	1.773	(2)	1.432	(2)	1.750	(3)	1.652	(3)	4.02	0.0198*	(A;B;C)
	0.850		0.646		0.809		0.768				
C3	2.500	(5)	2.074	(6)	2.046	(6)	2.207	(6)	2.47	0.0879	(A;B;C)
	0.947		0.820		0.866		0.878				
C4	2.409	(4)	2.147	(8)	2.068	(7)	2.208	(7)	1.08	0.3420	(A;B;C)
	1.033		0.894		0.809		0.912				
C5	1.636	(1)	1.600	(3)	1.659	(2)	1.632	(2)	0.11	0.8960	(A;B;C)
	0.656		0.702		0.743		0.700				
C6	2.273	(3)	2.000	(5)	2.091	(8)	2.121	(5)	0.73	0.4853	(A;B;C)
	1.126		0.930		1.014		1.023				
C7	2.636	(6)	2.138	(7)	2.000	(5)	2.258	(8)	3.54	0.0313*	(A;B)(B;C)
	0.896		0.936		0.965		0.932				
C8	2.727	(9)	2.330	(9)	2.523	(11)	2.527	(11)	1.85	0.1604	(A;B;C)
	0.974		0.902		0.991		0.956				
C9	3.091	(10)	2.716	(13)	2.705	(12)	2.837	(13)	1.28	0.2808	(A;B;C)
	0.900		1.030		1.087		1.006				
C10	2.714	(8)	2.602	(12)	2.523	(11)	2.613	(12)	0.29	0.7502	(A;B;C)
	1.041		0.927		0.990		0.986				
C11	2.682	(7)	2.463	(11)	2.273	(10)	2.473	(10)	1.44	0.2405	(A;B;C)
	0.885		1.021		0.757		0.888				
C12	2.409	(4)	2.337	(10)	2.233	(9)	2.326	(9)	0.27	0.7665	(A;B;C)
	0.988		1.000		0.997		0.995				
C13	1.773	(2)	1.411	(1)	1.546	(1)	1.577	(1)	2.59	0.0780	(A;B;C)
	0.964		0.608		0.694		0.755				

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order # Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.90: Rank order of combined restraining factors according to the relative importance for restraining the implementation of project management and one-way analysis of variance between means per application group

ITEM CODE	GROUP I		GROUP II		GROUP III		TOTAL#		F-value	p-value	Tukey's grouping
	X	RO	X	RO	X	RO	X	RO			
	S	N=71	S	N=63	S	N=33	S	N=167			
C1	1.704 0.744	(4)	1.984 0.871	(5)	1.636 0.929	(3)	1.775 0.848	(4)	2.65	0.0735	(1;2;3)
C2	1.535 0.651	(2)	1.603 0.794	(2)	1.515 0.755	(1)	1.551 0.733	(2)	0.21	0.8085	(1;2;3)
C3	2.197 0.856	(6)	2.000 0.861	(6)	2.091 0.879	(6)	2.096 0.865	(5)	0.88	0.4184	(1;2;3)
C4	2.268 0.910	(7)	2.143 0.840	(8)	2.000 0.935	(5)	2.137 0.895	(7)	1.06	0.3488	(1;2;3)
C5	1.648 0.739	(3)	1.635 0.789	(3)	1.667 0.645	(4)	1.650 0.724	(3)	0.02	0.9802	(1;2;3)
C6	2.197 1.037	(6)	1.905 0.875	(4)	2.212 1.053	(7)	2.105 0.988	(6)	1.80	0.1688	(1;2;3)
C7	2.183 0.946	(5)	2.081 0.911	(7)	2.242 1.091	(8)	2.169 0.983	(8)	0.35	0.7049	(1;2;3)
C8	2.366 0.849	(8)	2.581 0.950	(12)	2.364 1.113	(9)	2.437 0.971	(11)	1.01	0.3664	(1;2;3)
C9	2.831 1.000	(12)	2.794 1.080	(13)	2.667 1.051	(11)	2.764 1.044	(13)	0.28	0.7525	(1;2;3)
C10	2.771 0.951	(11)	2.532 0.900	(11)	2.469 1.047	(10)	2.591 0.966	(12)	1.55	0.2145	(1;2;3)
C11	2.662 0.925	(10)	2.444 0.912	(10)	2.000 0.968	(5)	2.369 0.935	(10)	5.72	0.0040*	(1;2)(3)
C12	2.465 0.908	(9)	2.194 0.989	(9)	2.394 1.171	(9)	2.351 1.023	(9)	1.27	0.2830	(1;2;3)
C13	1.479 0.714	(1)	1.508 0.669	(1)	1.606 0.864	(2)	1.531 0.749	(1)	0.35	0.7074	(1;2;3)

One-way ANOVA with $\alpha = 0.05$ RO=Rank Order #Average of 3 groups

*Result statistically significant at 0.05 level

Table 4.91: VARIMAX-rotated four-factor pattern of items C1-C13 of "combined restraining factors" only

ITEM CODE	FACTOR 1#	FACTOR 2#	FACTOR 3#	FACTOR 4#	Communality*
C10	0.7279				0.5536
C11	0.5762				0.3993
C12	0.5546				0.3296
C4	0.4963				0.4907
C6		0.6779			0.5297
C13		0.6068			0.4657
C5		0.5834			0.3612
C8			0.8362		0.7754
C1			0.5599		0.3709
C7			0.3508		0.3289
C9					0.2002
C2			0.3042	0.5398	0.4493
C3				0.4838	0.3392
Cronbach α	0.7346	0.7480**	0.7005**		

Shaded area in factor columns indicate where shifts occur because of greater loadings on the next factor

#Only values greater than 0.3000 reported

*Indicates the amount of variance explained by the four factors

**Adjusted with the Spearman-Brown formula for comparison purposes

4.7 THEORETICAL CHANCES OF SUCCESSFULLY IMPLEMENTING PROJECT MANAGEMENT

4.7.1 Question 4.3 (Code Q4_3)

The final question in part D of the questionnaire asked respondents to again predict the chances of successfully implementing project management in their department, given expressly their answers provided in questions 4.1 (see subsection 4.6.1) and 4.2 (see subsection 4.6.2). The results were as indicated in tables 4.92 and 4.93.

This question thus required respondents to take their answers to the two

previous questions into consideration, before predicting the chances of successfully implementing project management. The two previous questions dealt with a force field analysis of success driving and success restraining factors in the implementation of project management. It is therefore appropriate that an association, through correlational analysis, be examined between each of the success driving and success restraining factors in this question with question 4.3. The results were as indicated in tables 4.94 to 4.99.

Table 4.92: Chances of successfully implementing project management with answers provided earlier in force field analysis and one-way analysis of variance between means per managerial group

CHANCES OF IMPLEMENTING	GROUP A		GROUP B		GROUP C		TOTAL N %T
	N	c% r%	N	c% r%	N	c% r%	
SMALL (0-24%)(w1)	1	4% 8%	8	9% 67%	3	7% 25%	12 7%
LIMITED (25-49%)(w2)	3	13% 8%	22	23% 61%	11	24% 31%	36 22%
REASONBLE (50-74%)(w3)	13	57% 16%	49	52% 60%	20	45% 24%	82 51%
GOOD (75-99%)(w4)	6	26% 19%	15	16% 47%	11	24% 34%	32 20%
TOTAL %T	23	14%	94	58%	45	28%	162 100% 100%
\bar{X} S	3.046 0.767		2.763 0.825		2.841 0.869		2.883# 0.820#
ONE-WAY ANOVA	F-value		p-value under Ho		Tukey's grouping		
CODE Q4_3	1.04		0.3565		(A;B;C)		

$\chi^2=3.703$ $p=0.717$ $C=0.149$ $N=162$ #Average of 3 groups
One-way ANOVA with $\alpha=0.05$



Table 4.93: Chances of successfully implementing project management with answers provided earlier in force field analysis and one-way analysis of variance between means per application group

CHANCES OF IMPLEMENTING	GROUP I N c% r%	GROUP II N c% r%	GROUP III N c% r%	TOTAL N %T
SMALL (0-24%)(w1)	4 6% 33%	5 8% 42%	3 9% 25%	12 7%
LIMITED (25-49%)(w2)	10 14% 27%	16 26% 43%	11 33% 30%	37 22%
REASONABLE (50-74%)(w3)	32 46% 38%	37 60% 43%	16 49% 19%	85 52%
GOOD (75-99%)(w4)	24 34% 77%	4 6% 13%	3 9% 10%	31 19%
TOTAL %T	70 42%	62 38%	33 20%	165 100% 100%
\bar{X} S	3.086 0.847	2.645 0.726	2.576 0.792	2.769# 0.788#
ONE-WAY ANOVA	F-value	p-value under Ho	Tukey's grouping	
CODE Q4_3	7.01	0.0012**	(1)(2;3)	

$\chi^2=21.513$ $p=0.001$ * C=0.340 N=165 #Average of 3 groups

*Results statistically significant at a 0.005 level where $\chi^2=18.548$ for 6 degrees of freedom

One-way ANOVA with $\alpha=0.05$

**Result statistically significant at a 0.05 level

Table 4.94: Pearson product-moment correlation coefficients between philosophical factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
P1	168	0.0376	0.6281
P2	167	-0.1894	0.0142*
P3	168	-0.0897	0.2476
P4	167	0.0459	0.5558
P5	167	-0.0496	0.5247
P6	166	-0.1129	0.1477
P7	168	-0.0446	0.5663
P8	168	0.0516	0.5070
P9	168	-0.0856	0.2698
P10	168	-0.0282	0.7170
P11	167	-0.1264	0.1036
P12	168	-0.1153	0.1368
P13	168	0.0205	0.7918
P14	163	-0.0827	0.2937

*Result statistically significant at 0.05 level

Table 4.95: Pearson product-moment correlation coefficients between situational factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
S1	168	-0.0218	0.7795
S2	160	-0.0906	0.2545
S3	160	-0.1166	0.1419
S4	167	-0.0961	0.2165
S5	167	-0.1047	0.1780
S6	168	-0.0051	0.9478
S7	168	-0.1366	0.0775
S8	168	-0.0740	0.3403
S9	167	0.0023	0.9767



Table 4.96: Pearson product-moment correlation coefficients between organizational factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
O1	167	0.0920	0.2370
O2	167	-0.0898	0.2486
O3	161	-0.0699	0.3784
O4	167	-0.0180	0.8171
O5	167	0.0847	0.2767
O6	164	-0.1070	0.1727
O7	166	0.0995	0.2021
O8	163	0.0239	0.7620

Table 4.97: Pearson product-moment correlation coefficients between job-dimensional factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
J1	168	-0.0479	0.5371
J2	168	-0.0063	0.9356
J3	168	-0.0049	0.9498
J4	168	-0.1583	0.0404*
J5	166	-0.2282	0.0031*
J6	168	-0.1103	0.1548
J7	168	-0.0026	0.9730
J8	168	-0.0939	0.2260
J9	168	-0.0279	0.7201
J10	168	-0.0379	0.6253

*Result statistically significant at 0.05 level

Table 4.98: Pearson product-moment correlation coefficients between human-oriented factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
H1	168	0.0124	0.8733
H2	167	-0.0967	0.2139
H3	168	0.0017	0.9825
H4	166	-0.0771	0.3237
H5	168	-0.1567	0.0425*
H6	168	0.0033	0.9662

*Result statistically significant at 0.05 level

Table 4.99: Pearson product-moment correlation coefficients between combined restraining factors and question 4.3 for whole research population

ITEM CODE	TOTAL N	r-correlation coefficient	p-value under Ho
C1	168	0.0586	0.4504
C2	168	0.0096	0.9015
C3	168	0.1553	0.0444*
C4	168	0.1573	0.0417*
C5	168	-0.0368	0.6360
C6	168	0.0531	0.4945
C7	167	0.1258	0.1053
C8	167	-0.0102	0.8955
C9	168	-0.0622	0.4235
C10	165	0.1047	0.1808
C11	168	0.0336	0.6652
C12	167	0.0407	0.6018
C13	168	-0.1152	0.1371

*Result statistically significant at 0.05 level

4.8 CHAPTER SUMMARY

Chapter 4 presented the results of the research questionnaire. No attempt was made to either discuss or analyze these results but, where applicable, explanations were given for the statistical terminology and methodology used.

After the introduction in section 4.1, section 4.2 presented further details of the research population delineation (subsection 4.2.1) and categorization (subsection 4.2.2). It was noted that due to historical political events in South Africa, both during and after the research questionnaires were despatched and collected, some of the potential participants (i.e. the former independent states and self-governing territories work departments), no longer existed and had to be excluded from the research. The estimated total size of the population was reduced from 380 to 240. The number of research questionnaires returned was 172, representing a response rate of over 70 percent. The statistical techniques utilized for the different parts of the questionnaire were described in subsection 4.2.3.

Section 4.3 presented the results for part A of the questionnaire. This part dealt with the overall classification of the research population. In section 4.4, the results for part B of the questionnaire were reported. Part B questions focused on the general orientation of respondents to formalized project management.

Section 4.5 provided the results for part C of the questionnaire. This section dealt mainly with the process-related issues of formulating and implementing a strategy for project management. Section 4.6 presented the results for part D of the questionnaire. Part D questions focused on the content-related issues of strategy formulation and implementation.

Finally, section 4.7 presented the research results for the last part of the research questionnaire. This part attempted to theoretically assess the chances of successfully implementing a strategy of formalized project management in public sector work departments.

Chapter 5 will present the discussion and analysis of the results, with specific reference to the theoretical framework of the research as presented in chapter 2.