

CHAPTER 5

DISCUSSION OF THE RESEARCH RESULTS

5.1 INTRODUCTION

This chapter presents the discussion and analysis of the research results reported in chapter 4. Where applicable, the results are also examined in association with the theoretical research propositions, formulated in chapter 2, the literature review.

Section 5.2 presents the discussion of results as related to part A of the research questionnaire. This part dealt with the general classification of the respondents. Section 5.3 presents the discussion of the results for part B of the questionnaire. Part B examined the general orientation of personnel employed in public sector work departments to project management.

The discussion of the results of part C of the questionnaire is presented in section 5.4. Part C focused on the process-related issues of formulating and implementing a strategy for formalized project management. The results of the content-related issues, which were incorporated into part D of the research questionnaire, are discussed in section 5.5.

Section 5.6 presents the discussion of the results of the last portion of the questionnaire. In this portion, an attempt was made to theoretically assess the chances of successfully implementing formalized project management in public sector work departments. Finally, section 5.7 gives the chapter summary.

5.2 PART A: CLASSIFICATION OF RESEARCH POPULATION

5.2.1 Number of respondents

As noted in subsection 4.2.1, 172 questionnaires were returned out of an estimated research population size of 240. While 172 questionnaires were returned, only an average of 167 could finally be used. The difference is attributed to a number of questionnaires that had to be discarded during the data capturing process. This was necessary because in some cases, questionnaires were completed by individuals who, based on the research population criteria, had to be excluded from participating in this research and in other cases, complete blank questionnaires were returned. These discarded questionnaires typically represent variations of α and β errors described in section 3.6. The 70 percent response rate after this correction is still high and the correction should not affect the overall representativeness of the research results.

5.2.2 Analysis of respondents

The results of the breakdown of the total number of respondents in the different managerial levels were reported in table 4.2. Middle management (group B) represented the single largest proportion at 58 percent, then lower or functional management (group C) at 27 percent and finally, top management (group A) constituted 15 percent. Ideally, the proportion of lower management should be greater in order to better reflect the typical hierarchical structures found in organizations.

The breakdown of the total number of respondents in the different application groups was reported in table 4.3. Group I (where formal project management is applied) represented 43 percent of the respondents, group II (where informal project management is applied) - 37 percent, and group

III (where no project management is applied) - only 20 percent.

Given the high proportion of respondents who indicated that formal project management was already being applied in their departments and a focus point of this research, namely to develop an implementation strategy for formalized project management in public sector work departments generally, this result was unexpectedly high. However, it may be argued that the results of the research could still be of use to departments where informal or no project management is currently being applied (in this case 57 percent of respondents work in such departments). Furthermore, a close examination of the results for group I may provide valuable insights into the practical experiences of respondents gained during the actual implementation of formalized project management in their respective departments.

5.2.3 Number of years worked in a public sector work department

As a whole (hereafter referred to as "overall"), the average number of years that respondents had worked in a public sector work department was 12. The breakdown of the average number of years in the different managerial groups (see table 4.4) was 16 for top management (group A), 13 for middle management (group B), and 6 for lower management (group C). Statistically, groups A and B are similar but different to group C.

In the case of the breakdown in the different application groups (see table 4.5), the average number of years was very similar for all three groups. For group I (formal project management) it was 12 years, while for both group II (informal project management) and group III (no project management), it was 11 years.

5.2.4 Professional status of respondents

Overall, the breakdown of respondents in the different professional groups were: architects (24%), engineers (32%), quantity surveyors (23%) and "others" (21%). The "others" category included personnel, such as land surveyors, town and regional planners, valuers and works supervisors.

The professional status of respondents in the different managerial groups showed some variation from the overall breakdown as reported above (see table 4.6). Deviations of more than 5 percent which are noteworthy are group A - engineers (+18%), quantity surveyors (-6%), and "others" (-13%); group C - architects (-6%) and "others" (+11%).

In the case of the breakdown in the different application groups (see table 4.7), the professional status of respondents in each group again did not reflect the overall pattern reported above. Deviations of more than 5 percent which are noteworthy are group I - "others" (+10%); group II - architects (+7%); group III - architects (-9%), engineers (+11%), quantity surveyors (+13%) and "others" (-15%).

5.2.5 Highest formal qualification

Overall, the breakdown of the highest formal qualification of respondents was degrees (69%), diplomas (20%) and "other" (11%). The personnel in the "other" category generally held senior certificates.

The highest formal qualification of respondents in the different managerial groups showed some variation from the overall breakdown reported above (see table 4.8). Deviations of more than 5 percent which are noteworthy are group A - degrees (+6%) and "other" (-11%); group C - degrees (-6%) and "others" (+9%). Moreover, it should be noted that all respondents in group

A either held a degree or diploma, while in groups B and C, 90 percent and 80 percent of the respondents, respectively, were similarly qualified.

In the case of the breakdown in the different application groups (see table 4.9), the highest formal qualifications of respondents in each group again did not reflect the overall breakdown reported above. Deviations of more than 5 percent which are noteworthy are group III - degrees (+16%) and diplomas (-11%).

5.3 PART B: GENERAL ORIENTATION TO PROJECT MANAGEMENT

5.3.1 Current application of project management

Overall, 65 percent of the respondents confirmed that project management was currently being applied in their departments. The confirmation percentages in the different managerial groups (see table 4.10) were group A - 75%, group B - 61% and group C - 67%.

5.3.2 Extent of current application of project management

The overall breakdown of the total number of respondents in the different application groups was previously reported in subsection 4.3.1. There 80 percent of respondents indicated that project management was either formally or informally applied. The division in the different managerial groups, reported in table 4.11, showed minor variations from the overall pattern. For group A, the corresponding figure was 83%, for group B - 81% and for group C - 77%.

5.3.3 General attitude towards project management

Overall, 53 percent of the respondents perceived that their department held a positive, 41 percent a neutral and only 6 percent a negative attitude towards project management. The division in the different managerial groups, reported in table 4.12, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - positive (+10%) and neutral (-12%); group C - positive (+6%).

In the case of the breakdown in the different application groups (see table 4.13), group I was statistically, significantly different to groups II and III. In this group (note it is the group where formal project management is currently being applied), 75 percent of the respondents perceived their department's attitude as positive, 22 percent as neutral and only 3 percent as negative. In group II (where informal project management is currently being applied), 36 percent of the respondents perceived their department's attitude towards project management as positive, 61 percent as neutral and 3 percent as negative. Of particular interest is group III (where no project management is currently being applied), where 32 percent of the respondents perceived their department's attitude as positive, 49 percent as neutral but 19 percent (the highest of the three application groups) as negative. Statistically, groups II and III are similar but different to group I.

Focusing on the respondents' own attitude towards project management, overall, 83 percent held a positive, 14 percent a neutral and only 3 percent a negative attitude. The division in the different managerial groups, reported in table 4.14, showed minor variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - positive (+8%), neutral (-14%) and negative (+6%). In the case of the breakdown in the different application groups (see table 4.15), there were also minor variations from the overall pattern. Deviations of more than 5 percent

which are noteworthy are group I - positive (+7%) and neutral (-8%); group III - positive (-8%).

5.3.4 General knowledge of project management

Overall, 35 percent of the respondents felt they had a good knowledge about project management concepts and philosophy, 50 percent an average knowledge and 15 percent a limited knowledge. The division in the different managerial groups, reported in table 4.16, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - good (+15%), average (-8%) and limited (-7%); group C - average (-6%) and limited (+10%). In the case of the breakdown in the different application groups (see table 4.17), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - good (+8%) and limited (-7%); group II - good (-8%) and average (+7%); group III - average (-7%) and limited (+9%).

With regard to knowledge about project management techniques, overall, 23 percent of the respondents felt they had a good knowledge, 38 percent an average knowledge and 39 percent a limited knowledge. The division in the different managerial groups, reported in table 4.18, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - average (+14%) and limited (-17%); group B - average (-6%). In the case of the breakdown in the different application groups (see table 4.19), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - good (+6%) and limited (-5%); group II - good (-10%) and average (+8%); group III - average (-13%) and limited (+11%).

5.4 PART C: MANAGEMENT OF CHANGE

5.4.1 Chances of successfully implementing project management with no changes in current operations

Overall, 21 percent of the respondents believed that the chances of successfully implementing project management, with no changes in the way it currently operated, were small (less than a 25% chance of success), 28 percent believed the chances were limited (25% but less than a 50% chance of success), 39 percent believed the chances were reasonable (50% but less than a 75% chance of success), and 12 percent believed the chances were good (greater than a 75% chance of success).

The division in the different managerial groups, reported in table 4.20, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - limited (-7%) and reasonable (+11%); group B - limited (+6%); group C - limited (-8%) and good (+6%). In the case of the breakdown in the different application groups (see table 4.21), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - small (-7%), limited (-7%), reasonable (+6%) and good (+8%); group III - small (+15%), limited (+17%), reasonable (-23%) and good (-9%). Statistically, groups I and II are similar but significantly different to group III. This means that group III (where no project management is being applied) believe that the chances of successfully implementing project management are significantly different (in this case, smaller) to groups I and II.

5.4.2 Past performance of the departments

Overall, 35 percent of the respondents believed that the past performance of their department was good in meeting its objectives, 56 percent believed

it was average and only 9 percent believed it was poor. The division in the different managerial groups, reported in table 4.22, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - good (-6%), average (+15%) and poor (-9%); group B - average (-6%). In the case of the breakdown in the different application groups (see table 4.23), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - good (+10%) and average (-9%); group III - good (-11%) and average (+8%).

With regard to the past performance of the department in utilizing its resources efficiently, overall, 24 percent of the respondents believed it was good, 58 percent believed it was average, and 18 percent believed it was poor. The division in the different managerial groups, reported in table 4.24, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - good (-7%), average (+13%) and poor (-6%); group C - poor (+6%). In the case of the breakdown in the different application groups (see table 4.25), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group III - average (-8%) and poor (+7%).

In summary, 91 percent of the respondents overall, believed that the past performance of their departments in meeting their objectives was average or good, while 82 percent believed that the past performance of their departments in utilizing their resources efficiently was average or good. With reference to research proposition 74 (see subsection 2.4.8.2), it may thus be concluded that the past performance of the departments are perceived to be effective. The first part of that proposition can thus generally be confirmed.

5.4.3 Disrupting forces in the departments

Overall, 81 percent of the respondents confirmed that there were disrupting forces which restrained their department from obtaining optimal performance. The confirmation percentages in the different managerial groups (see table 4.26) were group A - 88%, group B - 82% and group C - 75%. In the case of the breakdown in the different application groups (see table 4.27), the confirmation percentages in the different application groups were as follows: group I - 85%, group II - 81% and group III - 76%.

With reference to research proposition 62 (see subsection 2.4.3), it may thus be concluded that there are disrupting forces present which restrain the departments from obtaining optimal performance.

5.4.4 Adjustments necessary inside the departments

Overall, 84 percent of the respondents confirmed that adjustments inside the department were necessary in order to maintain or improve on their performance. The confirmation percentages in the different managerial groups (see table 4.28) were group A - 78%, group B - 85% and group C - 83%. In the case of the breakdown in the different application groups (see table 4.29), the confirmation percentages in the different application groups were group I - 81%, group II - 83% and group III - 87%.

With reference to research proposition 62 (see subsection 2.4.3), it may thus be concluded that adjustments inside the departments are necessary in order to maintain or improve on their performances.

5.4.5 Origin of the force providing the greatest stimulus for change

Overall, 55 percent of the respondents believed that the origin of forces providing the greatest stimulus for change were external while 45 percent believed it was internal. The division in the different managerial groups, reported in table 4.30, differed from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - external (-7%) and internal (+7%). Groups B and C thus conform to the overall pattern where the origin of the greatest force was external but group A (top management) believed the origin of the force to be internal.

In the case of the breakdown in the different application groups (see table 4.31), there were only minor variations from the overall pattern but no deviations of more than 5 percent are noted. All three groups believed that the origin of greatest force providing the stimulus for change was external.

With reference to research proposition 62 (see subsection 2.4.3), it may thus be concluded that the origin of the force providing the greatest stimulus for change is external (note that for group A - top management it was internal). The proposition can thus generally be confirmed.

5.4.6 General attitude of the departments towards change

Overall, 56 percent of the respondents believed that their department generally resisted changes while 44 percent believed that their department embraced changes. The division in the different managerial groups, reported in table 4.32, differed from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - embraced (+15%) and resisted (-15%). Groups B and C thus conform to the overall pattern where changes were generally resisted but group A (top management) believed that changes were generally embraced.

In the case of the breakdown in the different application groups (see table 4.33), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - embraced (+15%) and resisted (-15%). Groups II and III thus conform to the overall pattern where changes are generally resisted but group I (where formal project management is applied) believed that changes are generally embraced.

With regard to the general attitude of the departments towards the initiation of changes, overall 56 percent of the respondents believed changes were infrequently initiated, while 44 percent believed they were frequently initiated. The division in the different managerial groups, reported in table 4.34, showed some variation from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - frequently (+10%) and infrequently (-10%). Groups B and C thus conform to the overall pattern where changes generally are infrequently initiated but group A (top management), believed that changes are frequently initiated.

In the case of the breakdown in the different application groups (see table 4.35), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group III - frequently (-14%) and infrequently (+14%). All three groups believed that generally, changes are infrequently initiated.

In summary, it may thus be concluded that departments acting on changes generally resist and infrequently initiate changes. Note that for group A (top management) and group I (where formal project management is applied) changes are generally embraced. With reference to research proposition 63 (see subsection 2.4.3), it may thus be concluded (with these two exceptions noted) that the departments generally reflect resistance to change. The proposition can thus generally be confirmed.

5.4.7 Contribution of implementing project management

Overall, 78 percent of the respondents confirmed that they believed implementing project management would contribute to a solution to deal with the disrupting forces which affect their departments. The confirmation percentages in the different managerial groups (see table 4.36) were group A - 83%, group B - 76% and group C - 81%. In the case of the breakdown in the different application groups (see table 4.37), the confirmation percentages were group I - 76%, group II - 82% and group III - 77%.

With reference to research proposition 61 (see subsection 2.4.2), it may thus be concluded that implementing project management in public sector work departments through a managed organizational change process may contribute to dealing with the disrupting forces which restrict them from obtaining optimal performance. The proposition can thus generally be confirmed.

5.4.8 Number of changes needed to implement project management

Overall, 29 percent of the respondents believed that many changes would be needed in order to implement project management effectively and efficiently in their department, 69 percent believed that some changes were needed, while only 2 percent believed that no changes would be needed.

The division in the different managerial groups, reported in table 4.38, differed from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - many changes (-8%) and no changes (+6%). In the case of the breakdown in the different application groups (see table 4.39), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - many changes (-7%) and some changes (+6%); group III - many changes (+16%) and

some changes (+14%). Statistically, groups I and II as well as groups II and III are similar. Groups I and III are significantly different to each other. This means that for group I (where formal project management is being applied), the number of changes needed to implement project management are significantly different (in this case, less) to those for group III where no project management is applied.

In summary, it may thus be concluded that some changes would be needed in order to implement project management. Note that for group I, the number of changes needed are significantly less than for group III where no project management is applied. This result is relevant for propositions 74 and 75. These propositions will be discussed in subsections 5.4.17 and 5.4.20.

5.4.9 Criteria for the selection of change strategies

Overall, 63 percent of the respondents confirmed that they believed that substantial time was needed to implement project management. The confirmation percentages in the different managerial groups (see table 4.40) were group A - 40%, group B - 70% and group C - 60%. Group A (top management) thus rather believed that implementing project management would not require substantial time. Statistically, groups A and C as well as groups B and C are similar. Groups A and B are significantly different to each other. This means that for group A, the time needed to implement project management is significantly different (in this case, less) than for group B. In the case of the breakdown in the different application groups (see table 4.41), the confirmation percentages were group I - 63%, group II - 66% and group III - 59%.

Overall, 53 percent of the respondents confirmed that they did not believe that extensive changes were needed to implement project management.

The confirmation percentages in the different managerial groups (see table 4.42) were group A - 70%, group B - 48% and group C - 55%. Group B (middle management) thus rather believed that extensive changes would be needed to implement project management. In the case of the breakdown in the different application groups (see table 4.43), the confirmation percentages (statistically significant) were group I - 64%, group II - 45% and group III - 39%. Groups II and III thus rather believed that extensive changes would be needed in order to implement project management.

Overall, 55 percent of the respondents confirmed that the general attitude of personnel employed within their departments to implementing project management was favourable. The confirmation percentages in the different managerial groups (see table 4.44) were group A - 70%, group B - 53% and group C - 52%. In the case of the breakdown in the different application groups (see table 4.45), the confirmation percentages were group I - 57%, group II - 49% and group III - 50%. Groups II and III thus did not show a clear indication whether personnel within their departments would either be favourably or unfavourably disposed to implementing project management.

Overall, 55 percent of the respondents rejected the notion that an outside consultant would be the best to manage the implementation of project management. The rejection percentages in the different managerial groups (see table 4.46) were group A - 64%, group B - 56% and group C - 49%. Group C (lower management) thus did not show a clear indication of its preference in the use of an outside consultant or not. In the case of the breakdown in the different application groups (see table 4.47), the confirmation percentages were group I - 59%, group II - 58% and group III - 35%. Group III thus rather believed that an outside consultant would be best to manage the implementation of project management.

In summary, it may thus be concluded that (1) substantial time was needed to implement project management (note that for group A the time needed was significantly less) (2) extensive changes would not be needed (note that for group B extensive changes were indicated and for groups II and III extensive changes, statistically significant, were indicated) (3) the general attitude of personnel was favourable (note that groups II and III did not give a clear indication of personnel favourableness) and (4) an outside consultant would not be the best person to manage the implementation of project management (note that for group III an outside consultant was the preferred choice).

Given the obtained research results, research proposition 66 (see subsection 2.4.5.1) can thus not be confirmed. The proposition should rather be reformulated to reflect the position as follows: (1) time required - long (2) extensiveness of change - small (3) favourableness of change target - favourable and (4) suitability of change agent - manager from within the department to manage the implementation.

5.4.10 Objects of change for implementing project management

Overall, the rank order for the objects of change for implementing project management with the greatest priority was (1) procedures (organizational processes) (2) functions (individual task behaviour) (3) direction (strategic direction) and (4) attitudes (organizational culture). The division in the different managerial groups, reported in table 4.48, differed slightly from the overall pattern. Deviations which are noteworthy are group C - ranked attitudes in (3) and direction in (4). A plausible explanation for their rank order is that lower management typically do not concern themselves with the strategic direction of the organization. In the case of the breakdown in the different application groups (see table 4.49), there were also some variations from the overall pattern. Deviations which are noteworthy are

group I - ranked attitudes as (3) direction as (4); groups II and III - ranked direction as (2) and functions as (3). A plausible explanation for this higher rank order of strategic direction is that in these groups formal project management is not yet applied and it would require a strategic decision to do so.

Given the obtained research results, research proposition 64 (see subsection 2.4.4.1) can thus not be confirmed. The proposition should rather be reformulated to reflect the rank order as follows: (1) procedures (organizational processes) (2) functions (individual task behaviour) (3) direction (strategic direction) and (4) attitudes (organizational culture).

5.4.11 Methods of change for implementing project management

Overall, the rank order for the methods of change for implementing project management which were the most appropriate was (1) structural (2) human-oriented (3) managerial and (4) technological. The division in the different managerial groups, reported in table 4.50, differed from the overall pattern. Deviations which are noteworthy are group A - ranked the positions as: (1) human-oriented (2) structural (3) technological and (4) managerial. In the case of the breakdown in the different application groups (see table 4.51), there were also some variations from the overall pattern. Deviations which are noteworthy are group I - ranked technological methods in (3) and managerial methods in (4); group III - ranked human-oriented methods in (1) and structural methods in (2).

With reference to research proposition 65 (see subsection 2.4.4.2), it may thus be concluded that the rank order of methods which are most appropriate for implementing project management in public sector work departments is (1) structural (2) human-oriented (3) managerial and (4) technological. The proposition can thus generally be confirmed.

5.4.12 Change policies for implementing project management

Overall, 57 percent of the respondents confirmed that a change policy for implementing project management should allow for gradual implementation. The confirmation percentages in the different managerial groups (see table 4.52) were group A - 61%, group B - 58% and group C - 52%. In the case of the breakdown in the different application groups (see table 4.53), the confirmation percentages were group I - 50%, group II - 65% and group III - 55%. Group I thus did not show a clear indication whether a change policy for project management should allow for either gradual or immediate implementation.

With reference to research proposition 70 (see subsection 2.4.7.1), it may thus be concluded that a change policy for implementing project management should allow for gradual implementation. The proposition can thus generally be confirmed.

5.4.13 Change strategies for implementing project management

Overall, the rank order for the change strategies for implementing project management which were the most appropriate was (1) informational (2) facilitative (3) attitudinal and (4) political. The division in the different managerial groups, reported in table 4.54, showed no variation from the overall pattern. In the case of the breakdown in the different application groups (see table 4.55), there were some differences to the overall pattern. Deviations which are noteworthy are groups I and III - both ranked facilitative strategies as (1) and informational strategies as (2).

Given the obtained research results, research proposition 67 (see subsection 2.4.5.2) can thus not be confirmed. The proposition should rather be reformulated to reflect the rank order as follows: (1) informational

(2) facilitative (3) attitudinal and (4) political.

5.4.14 Critical activities for implementing project management

Overall, the rank order for the most critical activities for implementing project management was (1) implementing (2) supporting (institutionalization) and (3) feasibility. The division in the different managerial groups, reported in table 4.56, differed from the overall pattern. Deviations which are noteworthy are group B - ranked supporting as (1) feasibility as (2) and implementing as (3); group C - ranked feasibility as (2) and supporting as (3). In the case of the breakdown in the different application groups (see table 4.57), there were some variations from the overall pattern. Deviations which are noteworthy are group I - ranked supporting as (1) feasibility as (2) and implementing as (3); group II - ranked supporting as (1) implementing as (2) and feasibility as (3); group III - ranked feasibility as (2) and supporting as (3).

Given the obtained research results, research proposition 71 (see subsection 2.4.7.2) can thus not be confirmed. The proposition should rather be reformulated to reflect the rank order as (1) implementing (2) supporting and (3) feasibility.

5.4.15 Participants for implementing project management

Overall, the rank order for the best person suited to fulfil the role of change manager when implementing project management was (1) top-level management (2) middle management (3) project management and (4) lower or functional management. The division in the different managerial groups, reported in table 4.58, differed from the overall pattern. Deviations which are noteworthy are group A - ranked both project and lower management as (3); group B - ranked lower management as (3) and

project management as (4). In the case of the breakdown in the different application groups (see table 4.59), there were also some variations from the overall pattern. Deviations which are noteworthy are group I - ranked lower management as (3) and project management as (4); groups II and III - ranked middle management as (1) and top-level management as (2).

Overall, the rank order for the best person suited to fulfil the role of change agent when implementing project management was (1) middle management (2) project management (3) lower or functional management and (4) top-level management. The division in the different managerial groups, reported in table 4.60, differed from the overall pattern. Deviations which are noteworthy are group A - ranked lower management as (2) and project management as (3). In the case of the breakdown in the different application groups (see table 4.61), there were also some variations from the overall pattern. Deviations which are noteworthy are group I - ranked top-level management as (2) project management as (3) and lower management as (4); group III - ranked project management as (1) and middle management as (2).

Overall, the rank order for the best person suited to fulfil the role of the change target when implementing project management was (1) lower or functional management (2) project management (3) middle management and (4) top-level management. The division in the different managerial groups, reported in table 4.62, differed from the overall pattern. Deviations which are noteworthy are group C - ranked project management as (1) and both middle and lower management as (2). In the case of the breakdown in the different application groups (see table 4.63), there were also some variations from the overall pattern. Deviations which are noteworthy are groups I and II - ranked project management as (1) and lower management as (2); group III - ranked middle management as (1) lower management as (2) top-level management as (3) and project management as (4).

With reference to research proposition 68 (see subsection 2.4.6), it may thus be concluded that the persons best suited for implementing project management are the change manager - top-level management; the change agent - middle management; and the change target - lower or functional management. The proposition can thus generally be confirmed.

5.4.16 Source of resistance to implementing project management

Overall, the rank order for the greatest source (or barrier to) of resistance when implementing project management was (1) understanding (2) acting and (3) acceptance. The division in the different managerial groups, reported in table 4.64, differed from the overall pattern. Deviations which are noteworthy are group C - ranked acting as (1) and understanding as (2). In the case of the breakdown in the different application groups (see table 4.65), there were some variations from the overall pattern. Deviations which are noteworthy are group III - ranked acting as (1) acceptance as (2) and understanding as (3).

Given the obtained research results, research proposition 69 (see subsection 2.4.6.2) can thus not be confirmed. The proposition should rather be reformulated to reflect the rank order as follows: (1) understanding (2) acting and (3) acceptance.

5.4.17 "Easy fit" for project management in departments

Overall, 66 percent of the respondents confirmed that they believed that project management would easily fit into "the way things were done" in their department and also "the way people thought and acted". The confirmation percentages in the different managerial groups (see table 4.66) were group A - 83%, group B - 61% and group C - 69%. In the case of the breakdown in the different application groups (see table 4.67), the

confirmation percentages were group I - 77%, group II - 60% and group III - 48%. Group III thus did not believe that project management would easily fit into "the way things were done" in their department and also with "the way people thought and acted".

With reference to research proposition 75 (see subsection 2.4.8.3), it may thus be concluded that implementing project management in public sector work departments would easily fit in with "the way things were done" in the departments and also with "the way people thought and acted". Note the exception of group III (where no project management is applied), where they believe the opposite to be true.

This research proposition was formulated based on the Pearce and Robinson (1985) model, which required both an indication of the number of changes needed (see subsection 5.4.8) and the potential compatibility of the changes with the existing organizational culture. Previously it was reported that some changes would be needed in order to implement project management and, based on the result discussed above, these changes are compatible with the existing culture. Consequently, the departments are in the "synergistic position" (according to the model) where emphasis should be placed on reinforcing the existing culture.

Given the obtained research results, research proposition 75 can thus not be confirmed. The proposition should rather be reformulated to reflect the position as follows: few changes would be necessary to implement formalized project management and the changes that are needed are compatible with the existing organizational culture. The departments are thus in the synergistic position and should focus on reinforcing the existing organizational culture.

5.4.18 Change of organizational structure

Overall, 67 percent of the respondents confirmed that they believed that the organizational structure had to be changed in order to implement project management. The confirmation percentages in the different managerial groups (see table 4.68) were group A - 52%, group B - 73% and group C - 62%. In the case of the breakdown in the different application groups (see table 4.69), the confirmation percentages in the different application groups were group I - 61%, group II - 73% and group III - 76%.

With reference to research proposition 73 (see subsection 2.4.8.1), it may thus be concluded that the organizational structures in public sector work departments need to be changed in order to implement project management. The proposition can thus generally be confirmed.

5.4.19 Means to ensure continued application of project management

Overall, the rank order for the best means to ensure the continued application of project management was (1) management support (organizational leadership) (2) personnel attitudes (organizational culture) and (3) structure (structural adjustments). The division in the different managerial groups, reported in table 4.70, differed from the overall pattern. Deviations which are noteworthy are group A - ranked personnel attitudes as (1) and management support as (2). In the case of the breakdown in the different application groups (see table 4.71), there were also some variations from the overall pattern. Deviations which are noteworthy are group II - ranked personnel attitudes as (1) and management support as (2); group III ranked structure as (2) and personnel attitudes as (3).

Given the obtained research results, research proposition 72 (see subsection 2.4.8) can thus not be confirmed. The proposition should rather

be reformulated to reflect the rank order as follows: (1) management support (organizational leadership) (2) personnel attitudes (organizational culture) and (3) structure (structural adjustments).

5.4.20 Managerial assignment position for implementing project management

Overall, the rank order for the most effective managerial assignment position for implementing project management was (1) internal management only (2) combination of internal and new outside management and (3) new outside management only. The division in the different managerial groups, reported in table 4.72, showed no variations from the overall pattern. In the case of the breakdown in the different application groups (see table 4.73), there were also no variations from the overall pattern.

With reference to research proposition 74 (see subsection 2.4.8.2), it may thus be concluded that the most effective managerial assignment position for implementing project management would be the use of internal managers from within the department only.

This research proposition was formulated based on the Pearce and Robinson (1985) model, which required both an indication of the number of changes needed (see subsection 5.4.8) and the assessment of past performance (see subsection 5.4.2). Previously it was reported that some changes would be needed in order to implement project management and that the past performance of the departments was perceived to be effective. Based on these results, the departments are in the "stability situation" (according to the model) where the major emphasis should be on the existing managers via internal promotions and transfers. The result for this question, namely that internal managers were seen as the most effective managers for implementing project management, thus confirms the

respondents' selection as also indicated in the model.

Given the obtained research results, research proposition 74 can thus not be confirmed. The proposition should rather be reformulated to reflect the position as follows: few changes would be necessary to implement formalized project management and the past performance of the departments is perceived to be effective. The departments are thus in the stability situation and the main emphasis should be on using internal managers from within the department to implement project management.

5.4.21 Summary of research propositions 61 to 75

A summary of the results for part C of the questionnaire in association with research propositions is presented in table 5.1.

Table 5.1: Summary of research propositions 61 to 75

PROPOSITION	CONFIRMED	REFORMULATED	REFORMULATION
61: 5.4.7	YES		
62: 5.4.3 : 5.4.4 : 5.4.5	YES*		* Note exception for Group A
63: 5.4.6	YES*		* Note exceptions for Groups A and III
64: 5.4.10	NO	YES	Rank order of objects of change: (1) procedures (organizational processes) (2) functions (individual task behaviour) (3) direction (strategic direction) (4) attitudes (organizational culture)
65: 5.4.11	YES		
66: 5.4.9	NO	YES	Criteria for change strategies: (1) time required - long (2) extensiveness of change - small (3) change target - favourable (4) change agent - manager from within the department
67: 5.4.13	NO	YES	Rank order of change strategies: (1) informational (2) facilitative (3) attitudinal (4) political
68: 5.4.15	YES		
69: 5.4.16	NO	YES	Rank order of sources of resistance: (1) understanding (2) acting (3) acceptance
70: 5.4.12	YES		
71: 5.4.14	NO	YES	Rank order of critical activities: (1) implementing (2) supporting (3) feasibility
72: 5.4.19	NO	YES	Rank order of institutionalizing means: (1) management support (leadership) (2) personnel (organizational culture) (3) structure (structural adjustments)
73: 5.4.18	YES		
74: 5.4.2 : 5.4.8 : 5.4.20	NO	YES	Managerial assignment position: The departments are in the "stability" situation and the main major emphasis should be on using managers within the department to implement project management
75: 5.4.8 : 5.4.17	NO	YES	Managing organizational culture: The departments are in the "synergistic" position and focus should be on reinforcing the existing culture

5.5 PART D: FORCE FIELD ANALYSIS OF PROJECT MANAGEMENT

5.5.1 Criteria for the interpretation of the average values

To gain some insight into the relative importance of the different factors, table 5.2 provides simplistic interpretation criteria which may be used to interpret the various average values obtained for each factor. In general, if all the respondents (100%) indicated that the factor was considered very important, the average (\bar{X}) for the factor would be equal to 1.000. Similarly, if all the respondents indicated that the factor was considered important, the average would be equal to 2.000, 3.000 for desirable and 4.000 for not important. Note that each average indicated in table 5.2 reflects the "best" possible position in terms of these importance categories. For example, an average of 1.100 suggests that 90 percent of the respondents believe the factor to be very important while the remaining percentage of the respondents (10%) believe the factor to be only important. If the remaining respondents were evenly distributed among the other possible categories of important, desirable and not important, the average would be equal to 1.200. This value, which is greater than 1.100, thus suggests a "less favourable" position.

The results for the force field analysis of project management are discussed in subsections 5.5.2 to 5.5.9. Subsection 5.5.10 provides a summary of the significant and important contributors (or restrainers) for the implementation of formalized project management in public sector work departments. The rank orders for the factors which respondents believed either contributed the most or had the most restraining influence on the implementation of formalized project management are highlighted in summarized tables. Factors considered significant, with average values of 1.500 or lower, are shaded in these tables. Based on the simple interpretation criteria in table 5.2, at least 50 percent of the respondents

believe these factors to be very important (or very restraining) while the remainder believe them to be important (or restraining). These factors may be regarded as significant contributors (or restrainers) in the implementation of formalized project management in public sector work departments.

Table 5.2: Interpretation criteria

AVERAGE (\bar{X})	% VERY IMPORTANT	% IMPORTANT	% DESIRABLE	% NOT IMPORTANT
1.000	100	0	0	0
1.100	90	10	0	0
1.200	80	20	0	0
1.300	70	30	0	0
1.400	60	40	0	0
1.500	50	50	0	0
1.600	40	60	0	0
1.700	30	70	0	0
1.800	20	80	0	0
1.900	10	90	0	0
2.000	0	100	0	0
2.100	0	90	10	0
2.200	0	80	20	0
2.300	0	70	30	0
2.400	0	60	40	0
2.500	0	50	50	0
2.600	0	40	60	0
2.700	0	30	70	0
2.800	0	20	80	0
2.900	0	10	90	0
3.000	0	0	100	0
3.100	0	0	90	10
3.200	0	0	80	20
3.300	0	0	70	30
3.400	0	0	60	40
3.500	0	0	50	50
3.600	0	0	40	60
3.700	0	0	30	70
3.800	0	0	20	80
3.900	0	0	10	90
4.000	0	0	0	100

Factors with averages above 1.500 up to 2.000, indicated with an asterisk (*), are only regarded as important contributors or restrainers. Based on the interpretation criteria of table 5.2, either more than 50 percent of the respondents believe these factors to be important and the remainder

believe them to be very important (values above 1.500 but below 2.000) or 100 percent believe the factors to be important (as in the case of a value of 2.000).

5.5.2 Contributing philosophical factors in project management implementation

The rank order of philosophical factors (see tables 4.74 and 4.75) which respondents believed contributed the most to the implementation of project management are summarized in table 5.3. From table 4.84 it should be noted that the four "new" hypothetical variables (or factors) obtained through factor analysis are not readily interpretable and are thus not discussed further.

Table 5.3: Philosophical factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	P9	P9	P4	P9	P9	P1	P4
(2)	P1	P13	P1;P9	P1	P4	P9	P1;P9; P10
(3)	P4	P4	P10	P4	P1	P4	P13
(4)	P13	P1;P7; P10	P13	P6	P6	P13*	P3*;P6*
(5)	P6;P10	P6*	P6*	P10*	P10	P6*	P5*;P7*; P12*

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as significant (or when important - indicated with an *) philosophical contributors to the implementation of project management: RP:39 (P9) (top-level management commitment and support for project management concept); RP:1 (P1) (routine involvement in project-type activities); RP:8 (P4) (realistic project objectives); RP:58 (P13) (integrative planning and control); RP:9

(P6) (key project management elements) and RP:36 (P10) (training and education in project management concepts, methods and techniques).

In the different managerial groups, other research propositions which may be confirmed are group A - RP:41 (P7) (project-oriented information and control system). In the different application groups, other research propositions which may be confirmed are group III - RP:6 (P3*) (application of the systems approach to management), RP:47 (P5*) (clear definition of project success), RP:41 (P7*) (project-oriented information system) and RP:55 (P12*) (possible advantages of project management).

5.5.3 Contributing situational factors in project management implementation

The rank order of situational factors (see tables 4.76 and 4.77) which respondents believed contributed the most to the implementation of project management are summarized in table 5.4. From table 4.85 it should be noted that the three "new" hypothetical variables (or factors) obtained through factor analysis are again not readily interpretable and are thus not discussed further.

Table 5.4: Situational factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	S1	S1	S1	S1	S1	S1	S1
(2)	S8*	S6	S8*	S8	S8	S8*	S8*
(3)	S6*	S8*	S6*	S7*	S7	S6*	S7*
(4)	S7*	S7*	S7*	S4*	S6*	S4*	S6*
(5)	S4*	S4*	S4*	S6*	S4*	S7*	S4*

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as

significant (or when important - indicated with an *) situational contributors to the implementation of project management: RP:53 (S1) (effective control of projects during execution); RP:54 (S8*) (ability to increase the strength of the driving forces of project success); RP:57 (S6*) (coordinating and integrating large projects with interdisciplinary and independent activities); RP:59 (S7*) (ability to deal with complex tasks in both slow and fast changing external environments); and RP:43 (S4*) (sensitivity to environmental influences). In the different managerial and application groups, there are no other research propositions which may additionally be confirmed.

5.5.4 Contributing organizational factors in project management implementation

The rank order of organizational factors (see tables 4.78 and 4.79) which respondents believed contributed the most to the implementation of project management are summarized in table 5.5. From table 4.86 it should be noted that the two "new" hypothetical variables (or factors) obtained through factor analysis, are again not readily interpretable and are thus not discussed further.

Table 5.5: Organizational factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	O7*	O7*	O7*	O1*	O7*	O7*	O7*
(2)	O2*		O2*	O7*	O2*	O1*	O2*
(3)	O1*		O4*	O2*	O4*	O2*	O1*
(4)			O1*		O1*	O4*	O4*
(5)			O6*				

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as

significant (or when important - indicated with an *) organizational contributors to the implementation of project management: RP:37 (O7*) (effective transitional management); RP:26 (O2*) (a dynamic organizational structure); and RP:4 (O1*) (an adaptable organizational form). In the different managerial groups, other research propositions which may be confirmed are group B - RP:33 (O6*) (a matrix organizational structure). In the different application groups, there are no other research propositions which may additionally be confirmed.

5.5.5 Contributing job-dimensional factors in project management implementation

The rank order of job-dimensional factors (see tables 4.80 and 4.81) which respondents believed contributed the most to the implementation of project management are summarized in table 5.6. From table 4.87 it should be noted that the three "new" hypothetical variables (or factors) obtained through factor analysis, are again not readily interpretable and are thus not discussed further.

Table 5.6: Job-dimensional factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	J9	J8;J9	J1	J9	J9	J8;J9	J8
(2)	J8	J4	J8	J1	J1	J1	J1
(3)	J1	J3*;J6*	J9	J8	J8	J3*	J6;J9
(4)	J3*;J6*	J1*	J3*;J6*	J3*;J6*	J3;J6	J4*	J3
(5)	J4*	J2*	J4*	J4*	J4	J6*	J2*

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as significant (or when important - indicated with an *) job-dimensional contributors to the implementation of project management: RP:52 (J9)

(communication and information sharing between participants); RP:51 (J8) (commitment, cooperation between participants); RP:10 (J1) (variety of project manager roles to be performed); RP:11 (J3*) (principal responsibility of project manager for project end-item); RP: 19 (J6*) (cohesive project team established) and RP:12 (J4*) (interface role of project manager). In the different managerial groups, other research propositions which may be confirmed are group A - RP:24 (J2*) (project manager held accountable for success/failure of project). In the different application groups, other research propositions which may be confirmed are group III - RP:24 (J2*) (project manager held accountable for success/failure of project).

5.5.6 Contributing human-oriented factors in project management implementation

The rank order of human-oriented factors (see tables 4.82 and 4.83) which respondents believed contributed the most to the implementation of project management are summarized in table 5.7. From table 4.88 it should be noted that the two "new" hypothetical variables (or factors) obtained through factor analysis, are again not readily interpretable and are thus not discussed further.

Table 5.7: Human-oriented factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	H1	H1;H2	H1	H1	H1	H1	H1
(2)	H2	H3	H2	H3	H2	H3	H2
(3)	H3	H5*	H3	H2	H3	H2*	H3
(4)	H5*		H5*	H5*	H5*	H5*	H5*
(5)	H6*		H6*	H6*	H6*		H6*

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as significant (or when important - indicated with an *) human-oriented contributors to the implementation of project management: RP:7 (H1) (managerial proficiency of project manager); RP:14 (H2) (desired personal characteristics of project manager); RP:15 (H3) (behavioural, business and technical skills of project manager); RP:17 (H5*) (leadership through participation and delegation); and RP: 42 (H6*) (participant's satisfaction through all project stages). In the different managerial and application groups, there are no other research propositions which may additionally be confirmed.

5.5.7 Other contributing factors in project management implementation

From an open-ended question in the questionnaire, which was placed after the structured questions which dealt with contributing factors in project management implementation, other factors indicated were project manager's integrity, the use of computer programs, mature instruction (not manipulation), attitude of humility, earning respect, showing initiative, providing incentives, setting objectives, belief in excellence in the work place, logical and realistic thinking, commitment to superior product quality, emphasis on planning not doing, participation through delegation of work, cost controls and integration of diverse professional skills. From these extracts it can be seen that the emphasis of these other factors identified was placed on factors within the job-dimensional and human-oriented categories.

5.5.8 Combined restraining factors in project management implementation

The rank order of combined restraining factors (see tables 4.89 and 4.90) which respondents believed would be the most constraining in the

implementation of project management are summarized in table 5.8. From table 4.91 it should be noted that the four "new" hypothetical variables (or factors) obtained through factor analysis, are again not readily interpretable and are thus not discussed further.

Table 5.8: Combined restraining factors

RANK ORDER	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
(1)	C13*	C5*	C13	C13*	C13	C13*	C2*
(2)	C5*	C2* C13*	C2	C5*	C2*	C2*	C13*
(3)	C2*		C5*	C2*	C5*	C5*	C1*
(4)	C1*		C1*	C1*	C1*	C6*	C5*
(5)				C7*		C1*	C4* C11*

* Average greater than 1.500 up to 2.000

Overall, the following research propositions (RP) can thus be confirmed as significant (or when important - indicated with an *) restrainers in the implementation of project management: RP:49 (C13*) (failures due to unsuitable project manager); RP:50 (C5*) (failures due to user not being involved); RP:48 (C2*) (failures due to unsupportive top-level management); RP:5 (C1*) (traditional management approaches used for project-type work). In the different managerial groups, other research propositions which may be confirmed are group C - RP:27 (C7*) (pure functional differentiated organization). In the different application groups, other research propositions which may be confirmed are group III - RP:18 (C4*) (high tendency for conflict in project environment) and RP:21 (C11*) (staffing complexities of the project team).

5.5.9 Other restraining factors in project management implementation

From an open-ended question in the questionnaire, which was placed after

the structured questions which dealt with restraining factors in project management implementation, other factors indicated were communication "blockages", people insensitivity, lack of patience and foresight, politicians, changing priorities within the departments, "the minister's last speech said ...", limiting financial and fiscal policies, too many chiefs, too many managers on a project, training of project managers and proof of project management skills. From these extracts it can be seen that the emphasis of these other factors identified was placed on factors within the situational, job-dimensional and human-oriented categories.

5.5.10 Summary of research propositions 1 to 60

A summary of the results for part D of the questionnaire in association with research propositions is presented in tables 5.9, 5.10 and 5.11.

Table 5.9: Summary of research propositions 1 to 20

PROPOSITION	CONFIRMED SIGNIFICANT	CONFIRMED IMPORTANT	COMMENTS
1: 5.5.2	YES*		* All groups
2	NO	NO	
3	NO	NO	
4: 5.5.4	NO	YES*	* All groups
5: 5.5.8	NO	YES*	* All groups
6: 5.5.2	NO	YES*	* Only for group III
7: 5.5.6	YES*		* All groups
8: 5.5.2	YES*		* All groups
9: 5.5.2	YES*		* All groups
10: 5.5.5	YES*		* All groups
11: 5.5.5	NO	YES*	* All groups
12: 5.5.5	NO	YES*	* All groups
13	NO	NO	
14: 5.5.6	YES*		* All groups
15: 5.5.6	YES*		* All groups
16	NO	NO	
17: 5.5.6	NO	YES*	* All groups
18: 5.5.8	NO	YES*	* Only group III
19: 5.5.5	NO	YES*	* All groups
20	NO	NO	

Table 5.10: Summary of research propositions 21 to 40

PROPOSITION	CONFIRMED SIGNIFICANT	CONFIRMED IMPORTANT	COMMENTS
21: 5.5.8	NO	YES*	* Only group III
22	NO	NO	
23	NO	NO	
24: 5.5.5	NO	YES*	* Only for groups A and III
25	NO	NO	
26: 5.5.4	NO	YES*	* All groups
27: 5.5.8	NO	YES*	* Only for group C
28	NO	NO	
29	NO	NO	
30	NO	NO	
31	NO	NO	
32	NO	NO	
33: 5.5.4	NO	YES*	* Only for group B
34	NO	NO	
35	NO	NO	
36: 5.5.2	YES*		* All groups
37: 5.5.4	NO	YES*	* All groups
38	NO	NO	
39: 5.5.2	YES*		* All groups
40	NO	NO	

Table 5.11: Summary of research propositions 41 to 60

PROPOSITION	CONFIRMED SIGNIFICANT	CONFIRMED IMPORTANT	COMMENTS
41: 5.5.2	YES*	YES**	* Only for group A ** Only for group III
42: 5.5.6	NO	YES*	* All groups
43: 5.5.3	NO	YES*	* All groups
44	NO	NO	
45	NO	NO	
46	NO	NO	
47: 5.5.2	NO	YES*	* Only for group III
48: 5.5.8	NO	YES*	* All groups
49: 5.5.8	NO	YES*	* All groups
50: 5.5.8	NO	YES*	* All groups
51: 5.5.5	YES*		* All groups
52: 5.5.5	YES*		* All groups
53: 5.5.3	YES*		* All groups
54: 5.5.3	NO	YES*	* All groups
55: 5.5.2	NO	YES*	* Only for group III
56	NO	NO	
57: 5.5.3	NO	YES*	* All groups
58: 5.5.2	YES*		* All groups
59: 5.5.3	NO	YES*	* All groups
60	NO	NO	

5.6 THEORETICAL CHANCES OF SUCCESSFULLY IMPLEMENTING PROJECT MANAGEMENT

On the basis of the indication of relative importance for each of the contributing and restraining factors (see section 5.5), respondents were asked to theoretically assess the chances of successfully implementing project management in their departments. Overall, 7 percent of the respondents believed that the chances of successfully implementing project management were small (less than a 25% chance of success), 22 percent

believed the chances were limited (25% but less than a 50% chance of success), 51 percent believed the chances were reasonable (50% but less than a 75% chance of success), and 20 percent believed the chances were good (greater than a 75% chance of success).

The division in the different managerial groups, reported in table 4.92, differed from the overall pattern. Deviations of more than 5 percent which are noteworthy are group A - limited (-9%), reasonable (+6%) and good (+6%); group C - reasonable (-6%). In the case of the breakdown in the different application groups (see table 4.93), there were also some variations from the overall pattern. Deviations of more than 5 percent which are noteworthy are group I - limited (-8%) and good (+14%); group II - reasonable (+9%) and good (-14%); group III - limited (+11%) and good (-11%). Statistically, groups II and III are similar but significantly different to group I. This means that group I (where formal project management is being applied) believe that the chances of successfully implementing project management are significantly different (in this case, higher) than those of groups II and III.

Should the results above be compared to those of a similar question earlier in the questionnaire (where respondents were asked to assess the chances of successfully implementing project management but - with the express condition that no changes were made in the current operations of their departments), the respondents now generally believed that the chances of success were higher (see table 5.12). The higher chance of success thus reflects a theoretical position where the factors which respondents indicated as success-driving forces are "present" (or "strengthened") and the success-restraining forces are "absent" (or "weakened"). The importance of these factors may thus be linked to this higher theoretical chance of successful implementation of project management.

Table 5.12: Percentage comparison of chances of success

CHANCES OF SUCCESS	OVERALL	GROUP A	GROUP B	GROUP C	GROUP I	GROUP II	GROUP III
0-24%	-14%	-13%	-12%	-15%	-8%	-13%	-27%
25-49%	-6%	-8%	-11%	+4%	-8%	-1%	-13%
50-74%	+12%	+7%	+16%	+5%	+2%	+17%	+34%
75-99%	+8%	+14%	+7%	+6%	+14%	-3%	+6%

Overall, 71 percent (this figure was previously 51%) of the respondents believed that the chances of successfully implementing project management, given that the results of the force field analysis were taken into consideration, were above 50 percent. In the case of the breakdown in the different managerial groups, the corresponding figures are group A - 83% (was 72%), group B - 68% (was 45%) and group C - 69% (was 58%). In the case of the breakdown in the different application groups, the corresponding figures are group I - 80% (was 64%), group II - 66% (was 52%) and group III - 58% (was 13%).

The correlation coefficients between the question dealing with the indication of chances of successful implementation of project management and each of the success-driving and success-restraining factors were reported in tables 4.94 to 4.99. Significant negative correlations between the results for this question and the contributing factors are RP3 (factor P2) (division of project into distinct life cycle phases), RP12 (factor J4) (interface role of project manager), RP13 (factor J5) (influence of project manager to supplement the lack of formal authority) and RP17 (factor H5) (leading project team primarily through participation and delegation). Note that because of the data capturing method used, negative correlations reflect situations where high numerical values were obtained for one variable (in this case, when the chances of successful implementation are good) while low numerical values were obtained for the other variable (in

this case, when the importance of the contributing factor is considered high). While both RP3 and RP13 show significant correlations with the chances of successful implementation, they were not confirmed earlier (see subsection 5.5.10) as important contributors to the implementation of project management.

Significant positive correlations between the results for this question and the restraining factors are RP56 (factor C3) (possible disadvantages of project management) and RP18 (factor C4) (the high tendency for conflict in project environments). Note again that because of the data capturing method used, positive correlations reflect situations where low numerical values were obtained for one variable (in this case, when the chances of successful implementation are small) and low numerical values were obtained for the other variable (in this case, when the restraining impact of the factor is considered high). While RP56 shows significant correlation with the chances of successful implementation, it was not confirmed (see subsection 5.5.10) as an important restrainer to the implementation of project management.

5.7 CHAPTER SUMMARY

Chapter 5 presented the discussion and analysis of the research results. Where applicable, the results were examined in association with the theoretical research propositions which were formulated in the literature review in chapter 2.

Following the introduction in section 5.1, the results for part A of the research questionnaire were discussed in section 5.2. This part described the characteristics of the respondents in terms of the number of years they had worked in a public sector work department, the professional status of the respondents and, finally, their level of education.

The discussion of the results for part B of the questionnaire was presented in section 5.3. In this section the respondents' general orientation to project management was discussed. Apart from determining the extent to which project management was currently being applied in public sector work departments, the general attitude of the respondents to and knowledge of project management were also described.

The discussion of the results for part C of the questionnaire was presented in section 5.4. This part focused on the process-related issues of formulating and implementing a strategy for formalized project management. Specifically, the results of the application of the general change management model of Conner and Lake (1988) were discussed in association with the theoretical propositions formulated in section 2.4.

The results for the content-related issues, contained in part D of the research questionnaire, were discussed in section 5.5. In this section, the outcome of the force field analysis of success-driving and success-restraining factors in project management implementation were discussed and in this case, in association with the theoretical propositions formulated in section 2.3.

Section 5.6 provided the discussion of the results for the last portion of the questionnaire. In this part, an attempt was made to theoretically assess the chances of successfully implementing formalized project management in public sector work departments. The assessment is based on the express condition that the implementation strategy utilized would reflect the results of the force field analysis of project management and then be implemented through a managed organizational change process.

Chapter 6 presents the final conclusions and recommendations of the research.