# CONCEPTUAL AND EMPIRICAL INVESTIGATION INTO A PROJECT MANAGEMENT SUPPORTIVE ORGANIZATION CULTURE

**by**

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# DECLARATION

Hereby I, John Myburgh Morrison, declare that this dissertation is my own original work and that all sources have been accurately reported and acknowledged, and that this dissertation has not previously in its entirety or in part been submitted at any university in order to obtain an academic qualification.

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# ABSTRACT

Projects inevitably appear on the agenda of organizations, especially those enterprises that are serious about surviving in a competitive and rapidly changing business environment. They have little say in whether they want to do projects, but they have the choice whether to take a project management approach, or whether to leave projects to their functional departments to carry out as part of their routine work. Growing numbers of organizations opt for project management, because they seek specific benefits such as the ability to accomplish targets under conditions of execution uncertainty and the ability to function across specialist disciplines.

Too many organizations find their project management performance disappointing and, despite substantial investments in appropriate systems and training, do not attain the benefits claimed by project management advocates. In response, project management researchers have increasingly speculated about the likely influence of organizational culture in the frustrating experiences organizations have with project management.

The reasoning behind this supposition appears sound. Most organizations attempting project management still have cultures shaped by a functionally dominated era of organization. Organizational cultures are only gradually breaking out of management traditions that emphasized principles such as high levels of structure and formalization, defined positions of authority, single channels of reporting, and minimal communication other than directions from management downwards. The philosophy of project management differs.

Beneath the scientific and methodological facade of project management, there exists a set of attendant leadership and behavioural patterns that have become equally crucial to its performance, for example: high levels of communication; autonomy for project managers; supportive and participative leadership styles; participants that accept reporting to more than one superior; and the emphasis on collective performance. One can add to this list, but these demonstrate the substantial differences that exist between a project management approach and the traditional approaches to managing work and controlling staff. These differences have provoked project management authors to recognize the influence of organizational culture and

to offer suggestions about the nature of a project management supportive organizational culture.

This study accepts this notion and postulates that organizations, despite mastering the more obvious methodologies of project management, may have negative cultural circumstances that fail to master the underlying management philosophies that support successful project management behaviour. A consolidated definition of organizational culture, which could discriminate between supportive and unsupportive environments for project management, has however remained elusive in the project management literature.

The expected relationship between organizational culture and project management has specifically been linked to project management in a matrix organization. In this environment, since there is an ongoing interaction between vertically managed (functional specialization) and horizontally managed (cross-functional) activity, the interdependency between project management and the organizational culture is likely to be strong.

The purpose of this study was to: (a) develop, through a comprehensive literature study, a framework of organizational culture dimensions that could be expected to impact on the effectiveness of project management; and (b) to seek, through empirical examination, confirmation about this relationship between organizational culture and project management. The study developed a multi-dimensional and multiple constituent perspective of project management performance as a measure of project management effectiveness in the empirical research.

The research found a statistically significant correlation between the hypothesized framework of organizational culture and project management effectiveness. This finding provides strong evidence to deduct that organizational culture and project management are interrelated and that organizational culture is an underlying variable that cannot be ignored when establishing a project management capability. The research further found statistically significant correlations between each of the twelve individual dimensions of organizational culture and project management effectiveness. The study has therefore also substantially progressed towards a framework that can assess the degree of supportiveness of the organizational culture in respect of project management. This should be a valuable tool for organizations struggling with unexplained problems in project management, or for organizations wanting to set up a project management capability.

# OPSOMMING

Projekte verskyn onvermydelik op die aksielys van organisasies, veral by die ondernemings wat hul voortbestaan in ‘n mededingende en snel veranderende sake-omgewing ernstig benader. Organisasies se keuse lê nie daarin of hulle projekte wil doen nie, maar tussen die toepassing van die beginsels van projekbestuur, of die toevertrou van projekte aan funksionele departmente  om dit binne die bestek van hul bedryfsfunksies uit te voer. Baie organisasies kies projekbestuur omdat hulle spesifieke voordele soos die vermoë om doelwitte onder ‘n hoë mate van taakonsekerheid na te jaag, en om trans-funksionele werk te bestuur, verlang.

Te veel organisasies vind hul pogings tot projekbestuur teleurstellend en, ten spyte van ‘n substansiële belegging in stelsels en opleiding, ontwyk die tipiese voordele waarop aanspraak gemaak word, hulle. In antwoord hierop skryf navorsers in projekbestuur toenemend oor die moontlikheid dat sekere tipes organisasie-kultuur verband hou met die frustrasies wat organisasies met projekbestuur ondervind.

Die onderliggende redenasies agter so ‘n afleiding blyk gesond te wees. Meeste organisasies wat tans projekbestuur aanpak, handhaaf steeds kulture wat in ‘n funksioneel georiënteerde tydperk van organisasie gevorm is. Organisasie-kulture wikkel hulle tans geleidelik los uit bestuurstradisies wat op beginsels van gestruktureerdheid, geformaliseerdheid, rigiede definisies van rolle en gesag, eenduidige kanale van rapportering, en minimale kommunikasie anders as opdraggewing van bestuur na laer vlakke, klem gelê het. Projekbestuur verskil hiervan.

Benede die wetenskaplike en metodologiese fasade van projekbestuur bestaan daar ‘n stel van gepaardgaande leierskaps- en gedragspatrone wat ewe noodsaaklik vir die suksesvolle prestasie van projekbestuur geword het, byvoorbeeld: hoë vlakke van kommunikasie; outonomie vir projekbestuurders; ondersteunende en deelnemende leierskapstyle; spanlede wat meervoudige gesagslyne kan aanvaar; en die belangrikheid van spanprestasie. Die lys kan nog uitgebrei word, maar hierdie illustreer die betekenisvolle verskille wat tussen ‘n projekbestuursaanslag, en tradisionele benaderings tot die bestuur van werk en die beheer van personeel, bestaan. Hierdie verskille dwing outeurs in projekbestuur reeds geruime tyd om

begrip vir die invloed van organisasie-kultuur te toon, en ook om bepaalde voorstelle oor die aard van ‘n ondersteunende kultuur vir projekbestuur aan die hand te doen.

Die studie gebruik hierdie denke as vertrekpunt en postuleer dat organisasies, ten spyte daarvan dat hulle die ooglopende beginsels van projekbestuur bemeester, negatiewe omstandighede in hul organisasie-kultuur mag koester wat nie met die onderliggende bestuursfilosofieë van suksesvolle projekbestuursgedrag kan vereenselwig nie.

Die verwagte verwantskap tussen organisasie-kultuur en projekbestuur word in besonder verbind met organisasies wat op ‘n matriksbasis funksioneer. In so ‘n omgewing is daar, as gevolg van die voortdurende interaksie tussen die vertikaalgerigte (funksioneel gespesialiseerde) en horisontaalgerigte (trans-funksionele) bestuur van werk, ‘n sterk verwagte interafhanklikheid tussen projekbestuur en organisasie-kultuur.

Die doel van die studie was om: (a) by wyse van ‘n omvattende literatuurstudie ‘n raamwerk van die dimensies van organisasie-kultuur wat ‘n waarskynlike impak op projekbestuur behoort te hê, te ontwikkel; en om (b) deur empiriese ondersoek, bevestiging vir die verwagte verwantskap tussen organisasie-kultuur en projekbestuur te vind. Die studie het ‘n multi-dimensionele perspektief, wat ook die evaluering van verskillende belanghebbendes insluit, as maatstaf vir die effektiwiteit van projekbestuur in die empiriese ondersoek, ontwikkel.

Die navorsing het ‘n statisties beduidende korrelasie tussen die gepostuleerde raamwerk van organisasie-kultuur en projekbestuurs-effektiwiteit bevind. Hierdie bevinding lewer sterk ondersteuning vir die afleiding dat organisasie-kultuur en projekbestuur interverwant is en dat organisasie-kultuur as ‘n onderliggende veranderlike in berekening gebring moet word by die vestiging van ‘n projekbestuursvermoë in ‘n organisasie. Die navorsing het verder bevind dat elkeen van die twaalf dimensies van die kultuurkonstruk individueel statisties beduidend met projekbestuurseffektiwiteit korreleer. Hiermee het die studie dan ook substansieel gevorder na die skep van ‘n raamwerk wat die graad van ondersteuning van ‘n organisasie se kultuur ten opsigte van projekbestuur kan assesseer. Hierdie behoort ‘n belangrike stuk gereedskap te wees vir organisasies wat met probleme in projekbestuur worstel asook vir organisasies wat projekbestuur as ‘n organisasie-vermoë wil vestig.

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# CHAPTER 1

## INTRODUCTION AND STATEMENT OF THE RESEARCH PROBLEM

### 1.1 INTRODUCTION

This research project concerns the relationship between project management and the organization. It argues that project management functions in an interdependent relationship with the rest of the organization, and competes for attention and resources alongside other organizational processes. The social make-up of the organization is therefore assumed to influence the way project management is conducted. Ample evidence in literature exists that suggests that project management is affected by conditions such as how the organization is structured, how inter-organizational relationships manifest, how power and authority is distributed, and how projects are supported by top management. Many scholars in organizational studies collectively group and research these social components of organization under the umbrella of organizational culture. In other words, this study investigates how the effectiveness of the project management of an organization is related to its organizational culture.

Project management has, in recent years, become a popular management tool that has found application far beyond the engineering industries where it originated. Several authors claim that project management has brought solutions that can benefit most organizations facing the pressures of an increasingly competitive business world. In this business environment organizations are forced to revitalize their lines of business on an ongoing basis, and they find themselves occupied with project type tasks on an increasing scale. Some businesses attempt to handle these projects as part of the routine operational activity within their departments, but this approach has serious weaknesses when projects are multi-disciplinary and need the cooperation of multiple departments at the same time. As a result, many organizations decide to adopt the formal methodology of project management to cope with this project challenge.

Project management is widely recognized for its systematic approach to the accomplishment of new product development and for its special emphasis on keeping tight control over duration, cost, and performance targets. These benefits, sufficiently supported by published

evidence of success, encourage businesses to invest in project management as a formal strategic capability.

Yet, in reality, the potential benefits of project management have apparently not that easily been achieved. Many organizations are disappointed with the results of their efforts to establish project management. It appears that organizations with a strong functional hierarchical tradition, especially, have found it hard to implement project management and achieve the desired level of performance.

Project management literature comprehensively covers topics associated with the successful or unsuccessful performance of project management. Earlier studies focused mainly on the application of tools and processes, but in recent years, the emphasis has increasingly shifted towards the behavioural context of project management. Studies addressing, for example, project teamwork issues, appropriate project leadership styles, or the ideal characteristics of project managers, have gradually attracted more attention as seemingly important determinants of project management success.

In line with this trend researchers have also become concerned with the role of the organization. Studies related to the organizational structure, the complexities of matrix management, senior management support for project management and the degree of authority enjoyed by project managers, have attracted prominent interest from scholars in the field. Many authors, based on these observations, have postulated the concept of a supportive organizational culture for project management. In line with several current project management authors, Rad (2000: 3), in an editorial in Project Management Journal, draws attention to the existence of such a distinct project mentality and expresses the need for organizations to encourage a culture and set of attitudes that is supportive of project management.

Despite the fact that the concept of a supportive culture has been recognized, authors in the field have so far mainly produced speculative and loosely connected evidence. The project management literature lacks a consolidated formulation, supported by empirical testing, of such a supportive culture.

This study has been initiated to search for a coherent and empirically supported meaning of the concept *project management supportive culture* at organizational level.

## 1.2 BACKGROUND

The study of organizational culture stems from the need to examine organizational dynamics in a systemic way. Ashkanasy, Wilderom and Peterson (2000: 2) describe this approach as the interest to investigate organizations holistically and to be concerned with grouped concepts and their combined influences rather than in lower order organizational transactions and behaviours. Glick (1985: 606), for example, stresses the importance of climate studies which pay attention to the issues where organizational and individual behaviour intersect, and which take a multi-dimensional perspective rather than confining studies to a single dimension. Earlier, Pettigrew (1979: 577) used entrepreneurship as example and warned against over-emphasizing the study of personal qualities and ignoring the equally important organizational dynamics in which entrepreneurial processes can take place.

According to Ashkanasy, *et al.* (2000: 2), the interest in studying constructs of shared attitudes has led to the popularity of climate and culture studies. The earlier studies at organizational level were mostly climate studies, but Ashkanasy, *et al.* (2000: 2) found that the focus of attention had shifted toward organizational culture, with its stronger emphasis on values, meanings and actions at the collective level of the organization. Glisson and James (2002: 768) comment that the 1982 publication of Peters and Waterman's *In Search of Excellence* has played an important role in the popularity of organizational culture as a research theme.

In many disciplines the impact of organizational culture or climate on aspects of performance has attracted attention from researchers. Examples exist where the influence of organizational culture on financial performance has been studied (Van der Post, De Coning, & Smit, 1998). Similarly, studies have been conducted to determine how the organizational level context supports the performance of other functions of the organization: marketing supportiveness (Jaworski & Kohli, 1993; Loubser, 2000); climates or cultures that encourage organizational innovativeness (Ahmed, 1998; Chandler, Keller & Lyon, 2000); and the organizational conditions associated with entrepreneurial behaviour (Covin & Slevin, 1991; Goosen, De Coning & Smit, 2002).

The observation that organizational culture can be a strong source of resistance against transformation, or that transformation needs to be accompanied by corresponding cultural

change, is also widely published. Project management in most cases means a substantial departure from traditional ways of managing work. Specifically the traditional principles of functional management are challenged by the nature of project work. Teamwork, cross-functional collaboration, and the acceptance of the dual authority situation by project team members are just some examples of the important deviations from the classical ways functional departments are managed. Dual authority is closely related to the matrix organization which has to be managed along both functional and project dimensions (Galbraith; 1994: 99). Tichy and Devanna (1990: 108) say that the change from a functional to a matrix structure calls for different management styles, for example, more openness to confrontation and negotiation.

Schein (1992: 140-141) notes that certain organizations change to teamwork, but ignore the need to pay attention to the underlying assumptions that may still support individualistic behaviour. Schein (1992: 274) also sketches the difficulties involved in getting people from different functional subcultures to work together on organizational level assignments, with people coming from different occupational backgrounds and with different assumptions and personality styles.

A study by Majchrzak and Wang (1996: 95) found that most organizations underestimate the difficulty in “breaking the functional mindset in organizations”. They asserted that structural changes alone, without changing the culture, will not change the values and behaviour of employees.

Many organizations recognize that their own cultures can be a restrictive environment for creative project work. Mintzberg (1991: 58) reports that “machine-like” organizations have been known to locate their research and development groups away from the main office to prevent them from being restrained by the dominant culture.

The field of project management has been slow in following the trend in other fields to constructively research the influence of organizational culture. Yet, there is ample evidence in the literature that puts culture on the agenda as a relevant and necessary domain of study in project management. Kerzner (1998b: 105) reports that most studies done around 1990 revealed that behavioural issues were the major causes of project failure, rather than failing to control quantitative matters such as costs and schedules. Maylor (2001: 93) asserts that, as

projects are under continuous confusion about priorities, most project failures result from problems at the strategic level. These problems cannot be solved by traditional project management methods, but have to be addressed at the organizational (strategic) level.

Graham and Englund (1997: 2) ascribe the lack of project results to organizations that, despite having invested in the necessary systems and training, are running project management under assumptions applicable to traditional functional management, and often within the jurisdiction of the functional departments. Because the emphasis in these departments is on stability and repetitive work they find it hard to cope with the highly changing nature of managing projects (Graham & Englund, 1997: 11).

There are several other sources in literature that address the problematic relationship between the environment in the organization and project management, and that suggest the need for more research. Examples of these sources are cited in the following paragraphs.

Wysocki (2000: 345) did a survey amongst 84 organizations and found that project management methodology is not widely understood by organizations, and that corporate environments are generally not supportive of current project management practices.

In a study of cross-functional structures, Ford and Randolph (1992: 290) concluded that there is a strong need for deeper research into the organizational circumstances required to achieve successful cross-functional management. Brown (1999b: 4), in his experience, recognizes the influence of organizational culture and its appropriateness (or lack thereof) for cross-functional or project management.

It is thus not surprising that Rad (2000: 3) writes that the organizational context is an emerging focus area of project management studies.

## 1.3 STATEMENT OF THE PROBLEM

The research problem is rooted in the fact that many organizations are not successful in applying project management sustainably at a satisfactory level of performance. This is evident despite the availability of a substantial body of knowledge covering both the technical and behavioural dimensions of successful functioning. This study addresses this problem from

a behavioural point of view and postulates that, typically, the culture of the organization may sustain and even promote behavioural patterns that are not conducive to sound project management. Because project management draws on organizational resources that are conditioned by the dominant values and management styles of the parent organization, these behaviours are imported into the project team and come into conflict with the styles associated with effective project management.

Although many project management studies address the ideal behavioural conditions and determinants of successful project management, there is not yet a consolidated description of a project management supportive culture at organizational level. This study thus addresses the crucial research question: what is a project management supportive organizational culture?

To resolve this question, a number of pertinent research questions need to be asked, namely:

- What can be defined as effective project management?
- What are the key dimensions of organizational culture that are associated with the effectiveness of project management?
- How do these dimensions impact on the effectiveness of project management?
- Can one define an ideal project management culture at the organizational level?

## 1.4 OBJECTIVES OF THE RESEARCH PROJECT

The aim of this study is to develop a framework of organizational culture that can distinguish between factors of organizational behaviour that support and those that inhibit effective project management practices.

The underlying philosophy of the study is to develop a generic model of culture. This implies that culture is not viewed exclusively in terms of dimensions that are anticipated by project management scholars to have an influence on project management, but that the culture model retains a generic character and finds support from generally accepted and studied dimensions of organizational culture.

The rationale behind this is twofold. First, this study does not attempt to discover the presence or absence of a project management defined concept of culture; the purpose of this study is to rather determine how a generic definition of culture relates to the important practices of project management. The target organization of this study is mostly organizations that have limited exposure to a project management way of achieving goals. The approach therefore is to view culture within a standard and accepted definition of culture assessment, and to explain to organizations how their scores on different dimensions will resist or support project management.

Secondly, this will also allow the opportunity for comparative studies into how the same set of dimensions impact on other functions or priorities of organizations, like marketing, entrepreneurship, research and innovation, or production. In this way an organization can more readily evaluate what type of culture to encourage based on the relative priorities of its various functions. As a practical research objective in organization management, this approach is considered more preferable than defining different constructs to evaluate the fit between culture and key organizational functions.

In order to comply with the main purpose of the study, a number of research objectives had to be set.

a. Develop a model of project management effectiveness.

Past project management studies, as well as studies in other fields that relate organizational culture to performance or effectiveness, have been criticized for using simplistic approaches to measuring the dependent variable (e.g. Cooke-Davies, 2002: 188). This study aims to develop a multi-dimensional model of project management effectiveness.

b. Develop a new model of organizational culture.

Although many frameworks and cultural constructs exist in the literature, no one on its own has been found to sufficiently address the cultural issues associated with project management.

c. Empirically test the relationship between the constructs.

By means of survey data and correlational statistical techniques, establish the relationships between the multiple dimensions of organizational culture and project management effectiveness.

## 1.5 DEMARCATION OF THE STUDY

This research has been aimed specifically at organizations that apply project management in a cross-functional situation and that are anticipated to have relatively established and influential organizational cultures. These imply a number of important guidelines for demarcating the categories of organizations targeted for this study:

- organizations that are applying project management in a matrix (cross-functional) arrangement;
- organizations that are running multiple projects and activities (where people and resources are subjected to multi-tasking by working on multiple projects or on a combination of functional and project work);
- organizations that are large enough to have multiple departments or functional units, and distinct top management and operational management structures; and
- organizations large enough and established enough to have either corporate or departmental cultures based largely on functional (departmental) orientations.

This would specifically exclude from consideration the following type of organizations:

- small dedicated entrepreneurial businesses, which are involved in a few projects, and are not anticipated to have established cultures created around different departments, different levels of management, and decision-making and control systems;
- larger project driven organizations with cultures established around their project hierarchies; and
- organizations running large long-term projects where the project participants are assigned to a project team for a relatively long period, thus where team members fully report to a project manager and not to functional managers.

To contain the scope of the research, this study has also been confined to South African organizations.

## 1.6 RELEVANCE OF THE RESEARCH

It has been stated earlier that a systematic approach to define a project management supportive culture has not yet received adequate research attention. From this point of view this study makes a valuable contribution. But it is also important to ask what contribution is being made to the practice of organization management.

The increasing popularity of project management as a management tool has already been noted. Dinsmore (1999: 6) summarizes this trend by saying that most businesses have become involved in projects because they need a regular supply of new products. The core skills of project management, namely to deliver within time, budget, sound human relations, and customer requirements, offer what is needed to get new products to the market fast.

Kloppenborg and Opfer (2000: 59) found that project management has started to find application in nearly all areas of commerce and industry. They foresaw that this trend would accelerate and that companies would increasingly rely on the skills of project managers to implement their new strategies.

The popularity of project management has followed in the wake of the 1988 Peter Drucker prediction in the Harvard Business Review (Drucker, 1988: 47), that layers of middle-management would disappear and that a substantial portion of future work would be done by task-focused teams involving specialists across various departments in the organization.

Project management offers this capability. Cleland (1999: 41) reflects the view of perhaps numerous authors by stating that project management can manage cross-functional teams and can operate across the departmental (intra-organizational) as well as organizational (customers and external stakeholders) boundaries. Project management and project managers also bring other advantages to the fore: experience in using influence rather than line authority (Frame, 1999: 4); the strong resource and cost control techniques which offer an alternative to downsizing organizations (Kerzner, 1998a: 1-2); and familiarity with outsourcing (Frame, 1999: 4).

Nevertheless, the apparent appeal of project management is contrasted by evidence that many organizations find it difficult to make project management succeed and do not realize the advantages it offers.

High failure rate statistics of projects are commonly found in the literature (see Frame, 1994: 8; Leach, 2000: 1; Reichelt and Lyneis, 1999: 135). Although project failure cannot be equated to project management failure (as will be shown later), questions can be still be asked about what impact ineffective project management has had on overall project failure statistics.

The failure to apply project management successfully at organizational level is well-reported. In a study involving more than 300 companies, Kerzner (2000: 18-19) found that many of them had not achieved a fair level of excellence in project management. Frame (1999: 184) states that project management competency at organizational level, is at an infant stage. Kerzner (1998b: 93) suggests that some organizations may take years (and even decades) to develop a desired level of competency in project management.

Earlier in the chapter it has been shown that authors have increasingly acknowledged the impact of organizational culture on project management. Brown (1999b) asserts that many organizations, through how they (the organizations) approach project management, fail to make it work or, at least, take full advantage of the benefits promoted in the textbooks. Ayas (1996: 131) says that as project management is carried out within an organizational context, it is impacted by the organizational structure. Arenius, Artto, Lahti and Meklin (2000: 176) also report on studies that have shown that current organizational structures are not compatible with the challenges facing project companies. Butterfield and Pendegraft (1996: 14) voice the opinion that many information system project failures start at the cultural level as large scale development projects rely on cooperation between organizational units.

The cross-functional ability of project management, which relies on matrix management principles, is also one of the root problems at organizational level. Galbraith (1994: 100) maintains that organizations that have not developed the capability to manage laterally are not likely to succeed in making a matrix organization work. This capability to manage laterally is a common dimension found in most organizational culture studies. For organizations that are changing to the cross-functional approach of project management, the question focusing on whether their cultures that can deal with lateral authority, and other implied departures from traditional management philosophies, need to be addressed.

The particular relevance of this study lies in addressing an area of management that is increasingly sought as a solution, but at the same time, due to the likely influence of organizational culture, is not meeting the expectations. This study attempts to develop a model that can measure culture and project management effectiveness, and that can provide empirical insight into the influence of different dimensions of organizational culture on project management. This should place focus on the true areas of concern in a particular organization regarding its successful application of project management and can be considered a major improvement over approaches that will attempt cultural change on a broader front and with speculative information.

## 1.7 KEY CONCEPTS OF THE STUDY

**Project management**

Project management for the purposes of this study is to be understood as the capability established in an organization for managing projects and which makes use of a formal and systematic approach in accordance with generally published project management principles and knowledge.

This definition diverts from the traditional definitions of project management which merely emphasize project management as the process of managing a project.

**Organization**

For the purposes of this study, organization means any formally organized business, as well as non-business (e.g. government), organization that has defined missions and deliverables, and that is largely employing staff full-time. Business units or divisions of larger organizations qualify as an organization as long as they have their own top management structures, departments of functional specialization, and a large degree of decision-making autonomy; by implication, they should have an own distinct culture.

**Organizational culture**

Organizational culture as used in this study refers to a manifest side of culture, specifically management and business philosophies that are actively in force and which determine the

nature of practices, decisions, and relationships in the organization. The cultural perspective of this study emphasizes a component of culture that is comparable across organizations.

This perspective acknowledges other interests in culture studies. Certain researchers focus on the deep hidden assumptions and value systems of key leaders in the organization; they are mainly the clinical researchers and organizational change specialists. Other researchers are more concerned with the deeper assumptions and convictions of all organizational members, and the meaning of social structures and symbols in that particular organization; they mainly use ethnographic research methods. Both these research orientations are primarily interested in the unique characters of specific organizations.

A more comprehensive discussion about these research viewpoints and the prevailing debates is addressed in Chapters 5 and 6.

**Project management effectiveness**

Similarly to the definition of project management above, project management effectiveness departs from a perspective that is mainly concerned with how to successfully manage a project. What is emphasized by project management effectiveness is the quality of the project management capability and infrastructure of an organization; it focuses on what is needed to ensure a consistency and sustainability of project delivery.

The above definition is more fully developed and substantiated in Chapters 2, 3 and 4.

## 1.8 RESEARCH DESIGN

The research approach takes organizational culture as the independent variable and investigates the relationship with project management effectiveness as the dependent variable. Both constructs are multi-dimensional and the relationships are analysed by using statistical correlation techniques. A multi-dimensional approach, although more limited with regards to the variables at organizational level, was used by Dvir, Lipovetsky, Shenhar and Tishler (1998) and was recommended by them as more suitable for the multi-dimensional and complex nature of project management.

A schematic presentation of the research model is shown in figure 1.1.

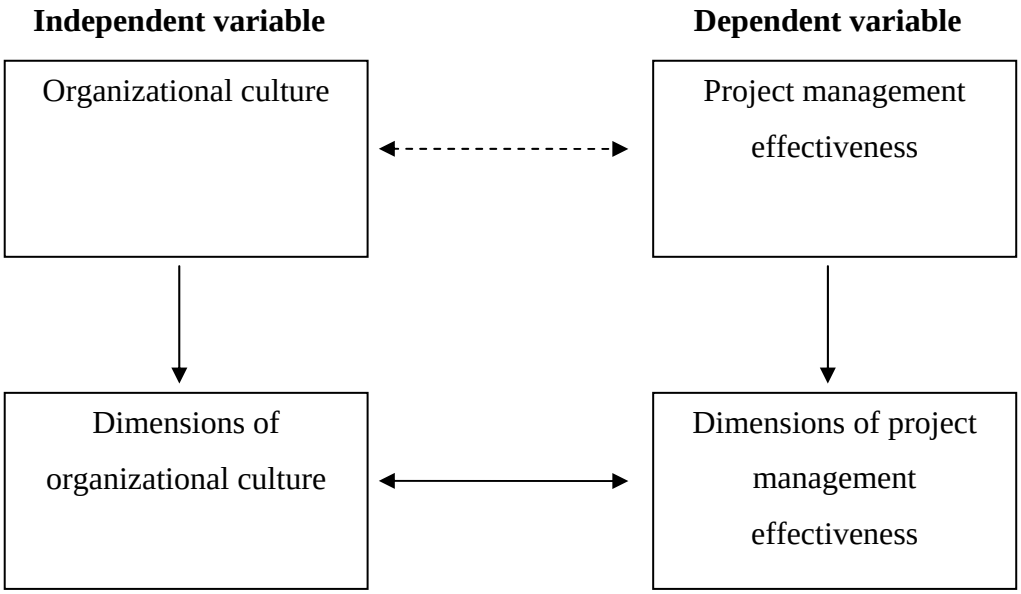


Figure 1.1 Schematic layout of research design

The data for the research were obtained through survey questionnaires. Each organization was targeted by two sets of questionnaires:

- an organizational culture survey sent to respondents in the broader organization in which they are required to respond on issues related to the culture of the organization (measuring the independent variable); and
- a set of project management instruments tapping perceptions of people actively involved in project management in the organization on various project management related issues (measuring the dependent variable).

The empirical research is cross-sectional in nature (Babbie, 1989: 89); thus it does not claim to examine cause-effect relationships between the independent and dependent variables, but merely correlation or association at a specific time. Although, by applying a thorough theoretical analysis of the expected impact of organizational culture on project management, a direction of the relationship is presumed, this direction is not empirically confirmed by the type of research conducted.

## 1.9 LIMITATIONS OF THE STUDY

The study is confined to South African organizations. This raises questions about the generalizability of the findings. There are several studies that report on the different ways business cultures impact on employee expectations in different countries, and on the associations between business cultures and national cultures. It can therefore not be concluded that the findings of this study are necessarily generalizable to project management and organizational cultures in other countries.

However, in developing the theoretical concepts of the study, the intention has not been to be country specific, but to retain a universal focus. The expectation is that the model should be valid for similar studies in other countries and that it could eventually lead to theories that can be more widely generalized.

Until such further research is carried out, the findings remain only generalizable in the South African context.

## 1.10 OULINE OF THE LITERATURE STUDY

The literature study section of this document is designed to clearly place this research within defined theoretical domains and approaches. The conceptual flow followed in organizing the literature research is depicted in Figure 1.2.

It is important to note that the arrow between Chapters 6 and 7 points in both directions. This is to illustrate that these two chapters ran in parallel; the definition of the culture construct followed from a study of the generic literature and was tested for relevance to project management at the same time.

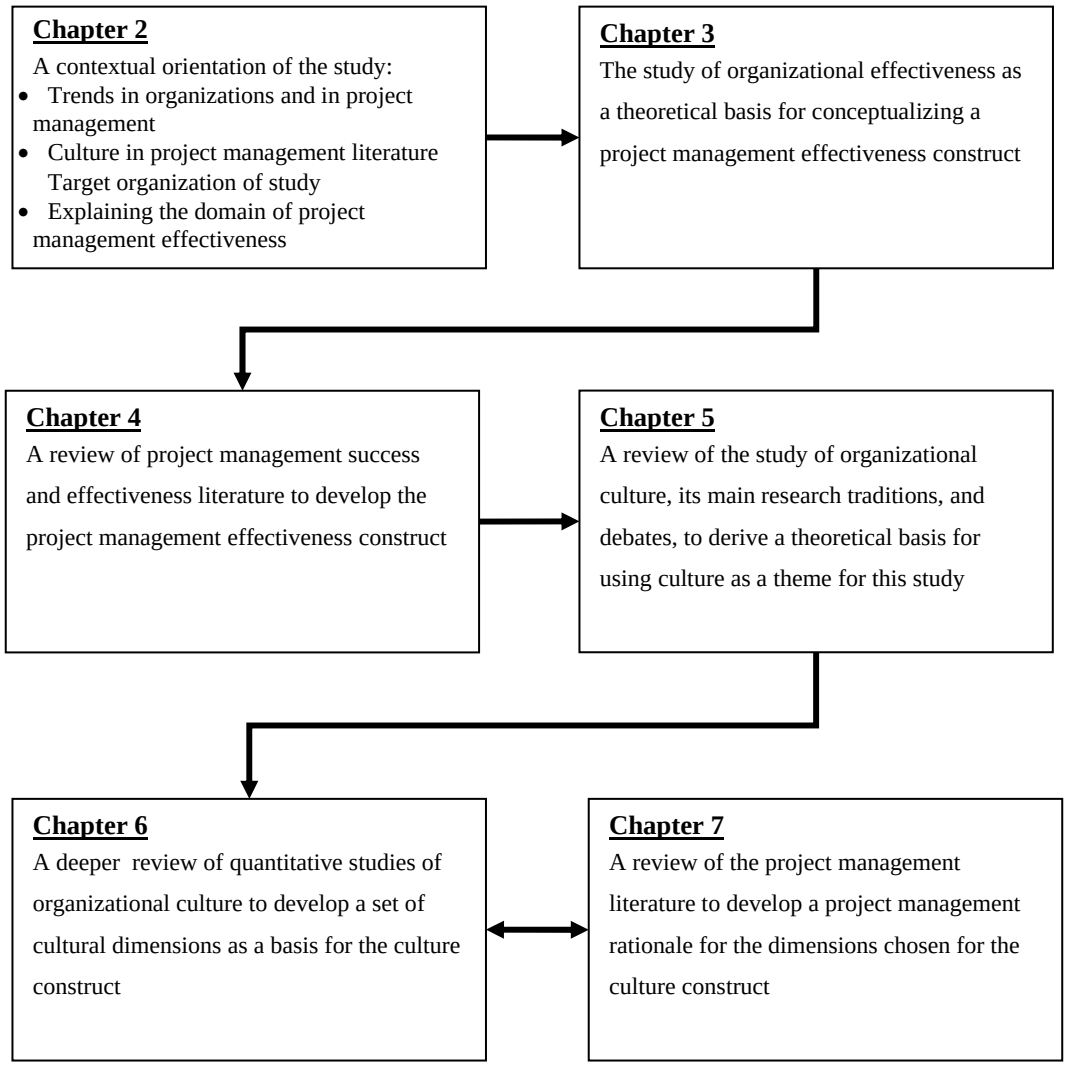


**Figure 1.2: Outline of the literature research part of the study**

## 1.11 SUMMARY

The study as outlined in this chapter, involves the investigation into how organizational culture impacts on the project management function. The interest in undertaking this research stems from mainly two phenomena. First, the methodology developed in the field of project management is increasingly being sought by the business world facing an accelerating demand for new products (i.e. projects). Second, organizations that adopt project management, but lack a tradition that is comfortable with its specific ways of functioning, often encounter substantial problems in their attempts to succeed.

Studies in organizational change report a general acceptance of the role of organizational culture in blocking attempts to produce change. The introduction of project management strongly challenges the classical principles of functional management, and to many organizations this step implies major change. The expectation to find organizational culture as a key determinant, influencing the successful transformation to project management, lies at the heart of this study.

# CHAPTER 2

# GENERAL CONTEXT OF THIS RESEARCH

## 2.1 INTRODUCTION

This chapter examines the broader context of this study. Several issues are addressed in this chapter to put the study in the right perspective.

As a starting point it views some of the current trends in organization and business management. These trends put a perspective on the typical changes organizations are facing, and emphasize the need for cultural changes. Many of these trends are therefore also related to the popular themes found in organizational culture studies. But some of these changes can also be associated with the increasing interest in project management techniques.

Subsequently, general trends in the study of project management are reviewed and it is shown how the research interest has shifted towards the people, behavioural, and organizational support sides of the subject. It is also recognized that there cannot be one standard set of principles applicable to all projects and all project organizations. Therefore, more attention is paid to the different types of organizations involved in project management, and to why a particular population of organizations has been targeted for this study.

Finally, clarification is given about the philosophy behind project management effectiveness and how it is approached in this study. Specifically it addresses how the concept of project management effectiveness is positioned within the theoretical domain of project success and project management success, as well as giving clarity about the choice of the term *effectiveness* and its relevance in this particular study.

## 2.2 CHANGES IN ORGANIZATION

### 2.2.1 Innovation, change and flexibility

Lawler and Galbraith (1994: 7) identify an obsession with past successes and performance recipes as one of the key threats to the survival of organizations. Often historic achievements

have put certain people in powerful positions, leaving them with a vested interest in maintaining the status quo. They resist taking cognisance of potential threats, or of proposals to improve future performance.

Hitt (2000: 7) calls for a new mindset by managers, saying that current thinking has been shaped by a relatively stable business environment. The new business environment will be characterized by substantial and rapid change with only short periods of relative stability.

Kanter (2000: 10) predicts that twenty first century leaders will pay more attention to building cultures that will support the need for their organizations to innovate. According to her, successful organizations manage to empower people to be innovative. She contends that innovative cultures are characterized by collaboration and relationships across the enterprise; and also emphasize that the direction of influence will not only be top-down, but will also flow horizontally and upwards.

Hitt (2000: 13) also emphasizes the need for management thinking to have a global perspective and to be strategically flexible; management will need to maintain both stable and turbulent states of the organization.

### 2.2.2 From a functional focus to an integrated focus

Drucker (1988: 47) anticipates a new generation of organizations. This vision predicts that organizations will move away from a traditional obsession with command and control towards the integration of expertise employed in the operational levels. Departments would focus on being custodians of standards and expert resources, but the work would take place in task-focused teams. Drucker emphasizes that the sequential flow of work from department to department would make way for *sinchronity* where multi-functional members work together as a team, from a product's inception to its launch in the market.

Lawler and Galbraith (1994: 9) assert that hanging on to rigid functional structures, will also be a threat to the survival of businesses. They see the key weaknesses of the functional orientation as its inability to coordinate multiple functional (departmental) outputs, and the pursuance of functional excellence ahead of total organizational performance.

Kanter (2000: 10) maintains that retaining a focus on territorial issues and failing to reward cross-functional performance adequately are obsolete practices that stand in the way of implementing innovative visions for organizations.

### 2.2.3 The importance of people and empowerment

The emphasis on people plays an important part in what authors visualize for future businesses. For instance, Miles (2001: 314) visualizes a new era of management which he calls the "age of the employee".

Bohl, Slocum, Luthans and Hodgetts (1996: 7) see the importance of people as the only sustainable source of competitive advantage. Employees' ideas, productivity, capacity to change, and ability to learn, at all levels of the organization, will be tapped for gaining competitive advantage. Pfeffer and Veiga (1999: 37) reports on a growing number of studies that confirm the relationship between organizational results and the way these organizations manage people.

According to Bohl, *et al.* (1996: 11) typical features of the new generation organization are:

- trust in employees at lower levels to make informed decisions;
- flexibility and capacity to adapt to changing environments;
- the ability to listen to customers and meet their needs;
- high levels of information flow between employees, and between the organization and its customers and suppliers; and
- less rigid separation between functional departments and disciplines.

Another area highlighted by Bohl, *et al*. (1996: 12) is the policy of rewarding people. Traditionally, reward systems have emphasized differences between levels of employees and management, but they should now be the instruments for reinforcing new company values.

Pfeffer and Veiga (1999: 40-44) list certain dimensions of human resource practices that have gathered support from various studies as being positively related to business performance. These include:

- self-managed teams and decentralization as basic elements of organizational design, with hierarchical control replaced by peer control;
- comparatively high compensation contingent on performance;
- extensive training;
- reduction of status differences (status differences reinforce the perception at lower levels that they do not have the capacity to contribute to company performance); and
- sharing of information combined with high levels of trust between management and employees.

There is also a growing recognition by organizations that they deal with individuals and not merely a homogenous workforce. Lawler and Finegold (2000: 1) assert that individuals differ in what they can offer and what they want from work; there cannot be one standardized way of managing people that will be effective for all. This shift to individualization has implications for leadership practices, reward policies, job design, and for the broader organizational culture. Lawler and Finegold (2000: 13) maintain that individualization will benefit organizations because they can more easily tap into the diverse abilities of their people in order to adapt and to survive.

Randolph (1995: 30) suggests the practice of sharing information as an important cornerstone of succeeding with the empowerment of people, and lists some key factors: sharing company performance information; assisting employees to understand the business; building trust through sharing sensitive information; and providing information for self-monitoring.

Randolph (2000) also addresses reasons why empowerment has only achieved limited success. Empowerment requires a new culture and set of behavioural patterns that depart from the traditional hierarchical mindset. Randolph (2000: 97-98) contrast the hierarchical culture with a culture of empowerment, and list certain important changes in thought for succeeding with an empowerment culture, for example:

- a move from command and control to partnering for performance;
- a move from pyramid structures to cross-functional structures;

- a change from managers to coaches and team leaders;
- a change from employees to team members;
- a change from workflow processes to projects;
- a change from monitoring (i.e. being monitored) to self-monitoring; and
- a move from do as you are told to own your own job.

### 2.2.4 From management to leadership

In line with these trends of more flexibility and getting more from people, has come a shift in emphasis from management to leadership. Kotter (1992: 98) explains key differences between these two concepts as shown in Table 2.1.

**Table 2.1: Differences between management and leadership**

| Management | Leadership |
|---|---|
| Emphasis on planning, budgeting, and schedules for achieving required objectives. | Emphasis on direction and a vision of the future; implement strategies for the changes needed to realize the vision |
| Focus on organising and staffing, appropriate structures, delegating responsibility and authority, work out the policies and procedures to direct people, putting in appropriate monitoring systems | Align people, communicate direction by words and deeds, influence the development of teams and coalitions that will understand and adopt the visions and strategies |
| Emphasis on monitoring actual results against planned results; plan and organize to solve any deviations | Emphasis on motivating and inspiring, energizing people to perform and overcome barriers |
| Produce predictability and order. Consistently produce the results expected by key stakeholders: on time (customers); and on budget (shareholders) | Produce change and cause innovation; create new products and customers and ways of working; improve competitiveness |

Source: Adapted from Kotter, 1992: 98

Miles (2001: 314) maintains that the rate of change forces organizations to engage and align employees at all levels to steer the business into new directions. Miles (2001: 315) also stresses the importance of pronouncing new sets of organizational values to direct behaviour and practices, and associates this with changing the culture of the organization.

### 2.2.5 Organizations that face extinction

Lawler and Galbraith (1994) assert that certain types of organizations will become extinct because they fail to face the realities of a changing business world.

Organizations with a pre-occupation towards centralized control and decision-making have become slow in dealing with the rapidly changing business environment. Decisions remain removed from the activity and lead to poor coordination and lack of decisiveness (Lawler & Galbraith, 1994: 8).

Another threatened organization shows little or no contact with the customer and the environment. Organizations and members, instead, focus on internal relationships and processes, and on satisfying next levels of management (Lawler & Galbraith, 1994: 8).

The hierarchical model of organization also faces extinction. The organization is vertically segregated with special privileges for higher levels of management. This effectively removes the top part of the organization from operational level contact with the outside world and also isolates it from the rest of the organization. The hierarchical model reinforces the tendency to move decision-making to the top, thus overloading decision makers who cannot easily grasp the diverse and complex nature of information that must be taken into account (Lawler & Galbraith, 1994: 10).

Certain corporate cultures also discourage open communication and debates. Sensitive and challenging topics are regarded as “not discussable” (Lawler & Galbraith, 1994: 10). This forces an acceptance of what is currently successful and inhibits the innovation needed to discover improved practices and products.

### 2.2.6 Summary

Many of these trends have at their centre the importance of people. The need for flexibility and innovativeness demands from organizations to get more from the talents of their employees. A strong recognition for advanced human resource practices prevails, and new forms of organizational culture are associated with accomplishing these. There appears to be a consistent rejection of traditional assumptions that emphasize command and control, tall

hierarchies, sequential and functionally separated workflows, the individual performer, and stability as a way of life.

These trends have practical similarities with project management which has, over time, increasingly struggled with the impact of the human factor, especially with regard to transforming project teams into performing units within a short time, to getting people committed to project deadlines and targets, and to managing cross-functional inputs to projects.

## 2.3 GENERAL TRENDS IN PROJECT MANAGEMENT

Kloppenborg and Opfer (2000: 54) led a study to review 40 years of project management research, and found that research in the 1990's had seen new trends, including shifts toward:

- people competency and commitment;
- the interpersonal and behavioural factors of project management;
- stakeholder management;
- the importance of communication; and
- performance measurement.

These trends, in line with other sources, for example a Project Management Institute survey (Project Management Institute, 1999: xv), indicate a growing interest in the human element of project management. Kloppenborg and Opfer (2000: 54) report that studies that were done in the 1980s still mostly concentrated on planning, costing and engineering related topics.

The Kloppenborg and Opfer (2000: 55) study makes several predictions about the future direction of project management. Some of these are:

- increased standardization of tools and terminology;
- more attention to project communications and in particular stakeholder communications;

- greater use of web-technology to assist communication and collaboration;
- more outsourcing of project management;
- increase in non-traditional projects;
- a movement away from super-projects; and
- the increasing demand for leadership rather than management skills from project managers.

The Project Management Institute (1999: xv) concluded that the project management body of knowledge will grow towards incorporating people skills from general management disciplines, and that competency in project management will mean having the ability to apply both technological skills and skills from the social sciences.

Several authors anticipate a more fluid nature of future project management. The use of temporary contracted project staff and teams would be on the increase (Pells, 1999: 37; Haldane, 1999: 122). Pells (1999: 36) also foresees implications for the culture of project management organizations with work being increasingly conducted away from the normal base or office. Haldane (1999: 125) warns that project managers will have to face the further complexity of dealing with a migrating expertise base as the demand for their skills will shift from project to project.

Haldane (1999: 121) also predicts a growing interest in the concept of the project office as a centre of standardized project methodology to help matrix type organizations cope with an increasing number of projects.

Artto (1999: 132) makes several predictions that intuitively hold cultural implications for future project organizations, for example: the importance of organizational and individual learning as key success factors; the integration of projects and managing customer relations; the need for management styles that will facilitate a supportive work climate; the need for entrepreneurial and committed staff; and cooperation and networking as normal practice. Cleland (1994: 1.3) draw attention to the fact that projects will not only expand across departmental borders, but also across organizational and international borders. In particular,

the concept of “borderless” project management will demand important flexibilities in culture and approaches to management (Cleland, 1994: 1.12).

The trends in project management studies are in line with trends generally in the management sciences. The emphasis has shifted towards the human element of project management away from only addressing scientific and technical issues as in the earlier years. Many of the concerns focus on the ongoing changes in the business environment, and on the ways organizations will have to deal with projects; they also focus on behavioural and interpersonal relationship issues, and on the increasing demands that will be placed on project leadership, the structures of organizations, and the cultures of organizations.

## 2.4 BEHAVIOUR AND CULTURE IN PROJECT MANAGEMENT

### 2.4.1 Early interest in the topic of culture in project management

One of the early works on culture and its relationship with project management was written by Trompenaars (1986). Trompenaars (1986: 121) associated organizational cultures with having either a right brain or a left brain orientation, and did a conceptual analysis of how these cultures would affect project management (which will be discussed later). At the same time Vanasse (1986) wrote a paper and distinguished between culture at organizational level and sub-cultures living in different social units within the organization (1986: 134). Vanasse (1986: 135) asserted that there will be a different culture at project management level and that organization members joining a project will normally adjust to the project level culture.

Vanasse’s study was not based on any systematic research, but on personal observation (Vanasse, 1986: 140). Although the principle may hold to an extent in organizations doing a few large and long term projects, it is doubtful whether this can be generalized across other types of project organizations. Subsequent literature also has not supported Vanasse’s view. As an example, in their study into the influence of culture on project management, Elmes and Wilemon (1988: 62) concluded that project managers should appreciate the importance of the dominant organizational culture, and should manage projects in harmony with the culture. They stressed the importance of this relationship and recommended further study of organizational culture to better understand how the processes of project management interact with organizations (Elmes & Wilemon, 1988: 62).

In an empirical study Gray (2001: 106) found that the majority of responding project teams had cultures which were strongly influenced by their organization cultures, thus contradicting the view of Vanasse (1986: 135).

### 2.4.2 The perspectives of culture in project management literature

The topic of culture in relation to project management is viewed from at least three different perspectives in the literature.

One viewpoint emphasizes the concept as the culture of the profession of project management, which is shared by project managers across organizations. This way of addressing project management culture is used by, for example, Wang (2001: 5).

Other authors use the term as the distinct way projects are run in an organization, thus the culture developed specifically around project management practices, and is organization specific. The earlier cited contribution by Vanasse (1986), and also work by Gareis (1994) and Dingle (1997) convey the second viewpoint.

Gareis (1994: 4.13) defines a project management culture as the sub-culture of project-oriented organizations and specifically as “the different communication forms, roles, techniques, documentation standards and leadership styles” established for project management by such an organization. Gareis (1994: 4.15) further associates the concept of building a project management culture, with training and developing of project management skills and with setting up capabilities in software, methodologies and procedural manuals.

In a similar, yet narrower way, Dingle (1997: 250) used the term *project culture* to refer to the system of project management procedures and checklists that have been formalized in the organization. Gareis (1994: 4.15) contends that projects are “autonomous social systems with distinct boundaries” and, although it functions in a close relationship with the organizational environment, it is distinctly separate. This latter viewpoint is in contrast to Elmes and Wilemon (1988) who preferred to emphasize the interdependency between project management and organizational culture.

The third and most common perspective addresses the topic, like Elmes and Wilemon (1988), as the organizational culture to which project management is exposed, thus more as an external influence to the way project management is run in the organization.

Within this perspective, several authors, besides Elmes and Wilemon (1988) and Trompenaars (1986) cited above, refer to the term culture in an organizational context, and as an external but explicit influence on project management. Gray (2001) did a study on the influence of organizational climate on project management; climate here is used as very similar to culture. Gray and Larson (2000: 243) recognize the interdependency between projects and the parent organization, and the importance of having a culture that is supportive of the unique project management behavioural principles. Gareis (2000), who earlier viewed culture from an internal project management perspective, more recently expressed the need for an explicit project management supportive culture at the organizational level. Kerzner (2001a: 81) argues that organizations that have become excellent in project management have cooperative cultures where the entire organization is in support.

Several other authors also use the term culture at organizational level, or address the impact of behavioural patterns at organizational level on the project management function (e.g. Ayas, 1996, Brown, 1999b; Cicmil, 1997; Donnellon, 1993; Hunt, 2000; Johns, 1999; Sherman, Cole & Boardman, 1996).

This particular perspective is in line with the aims of this study. Thus when this study refers to a culture that may be, or may not be, supportive to project management, it aligns with this third perspective, and addresses the culture of the organization as a whole. This theme will be further elaborated in Chapter 7.

## 2.5 TYPE OF PROJECT ORGANIZATIONS

### 2.5.1 Introduction

The issue of project organization is an important variable in this study. The need to cope with project work has become a concern for a large spectrum of organizations and industry sectors over the last years. It is argued that there will not necessarily be a perfect culture for all types of project organizations and that this study has to focus on a population of organizations that

face comparable issues in project management. In this section various project organization types are reviewed and the rationale why a particular organizational form is targeted for this study is developed.

### 2.5.2 The hybrid organization

Archibald (1992: 8) distinguishes between organizations that carry out projects as their prime activity of business, and those that primarily deliver products or services, but run projects as internally funded ventures in support of their main lines of business. Based on this viewpoint project organizations are classified as (see also Turner and Keegan, 2001: 258):

- *Type I organizations*: Do projects as their main or exclusive business: and
- *Type II organizations*: Do projects to support and enhance their main line of business, the latter which is more routine in nature

This study addresses largely the type II organization. Kerzner (2000: 5) calls organizations with both project-driven and non-project driven divisions a *hybrid organization*. According to Kerzner (2000: 5) the growth in project management during the past years has been mainly in the hybrid sector.

It is reasonable to assume that organizations that have developed their cultures without project management would find it more difficult to adapt to the particular styles associated with project management. Dinsmore (1999: 12), for example, wrote that typical functional organizations, with their emphasis on repetitive work, would have to undergo substantial changes to establish a project way of thinking. Turner and Keegan (2001: 258) emphasize that, whereas type I organizations conduct projects in the market (for clients), type II organizations conduct projects within its own hierarchy. The cooperation patterns and culture in the hierarchy is thus seen as more crucial in the type II organization, which is adapting to project management, than in the type I organization which has developed a culture by doing projects for external clients.

The study does not exclude type I organizations. Many type I organizations do multiple projects in the market for multiple clients and face similar problems as type II organizations. Their inclusion is discussed in the next section about matrix organizations.

### 2.5.3 The matrix organization

The matrix organization has a long relationship with the discipline of project management. Ford and Randolph (1992: 269) say that the terms *matrix management, project management, matrix organization* and *project organization* are often used synonymously in the literature.

Larson and Gobeli (1989: 119) gives the following description of the matrix organization:

> Matrix is a "mixed" organizational form in which the normal vertical hierarchy is "overlaid" by some form of lateral authority, influence, or communication. In a matrix there are usually two chains of command, one along functional lines and the other along project lines.

Ford and Randolph (1992: 272) give a similar description but more explicitly emphasize the temporary nature and the cross-functionality of task teams functioning within a matrix arrangement.

Several authors have seen the matrix as a continuum running from a functional to a project orientation. Larson and Gobeli (1999: 119-120) defined three categories to explain this continuum.

The first form is the *functional matrix*. In this form the relevant functional manager is in control of the project, whereas the project manager is primarily assisting the functional manager with coordinating the different functional inputs to the project.

The next form is the *balanced matrix*. Here, the project manager is on equal basis with the functional managers in a joint responsibility relationship, the project manager deciding the "what", and the functional managers the "how" and the quality.

The third form is the *project matrix*. In this organization the project manager is in control and the functional managers are merely providing resources and assistance.

Hobday (2000: 877) also classifies the *project-led* organization which is an even stronger form of the project matrix and closely resembles a pure project organization. The stronger forms of matrix are, however, not typical of the hybrid organization which essentially have to maintain its normal routine activity and emphasis on functional capabilities.

This study concerns itself with the problem of true cross-functionality as found in the more balanced forms of matrix organizations. The matrix form of organization has attracted substantial scholarly attention due to its deviations from traditional cultures and management principles. For example, McCann and Galbraith (1981: 62) emphasize the need to have a supportive management climate in place before introducing a matrix structure. Bartlett and Ghoshal (1990: 140) stress the viewpoint that the problems of matrix organizations should be addressed as an issue of organizational psychology and culture, rather than as an issue of structural complexity.

Galbraith (1994: 6) also refers to the matrix organization as a lateral organization, and describes it as an organizational design aimed at decentralizing management decision processes. Galbraith (1994: 19) further states that the lateral organization introduces a capability to coordinate activities laterally, rather than only from the top down. These are fundamental changes to the typical hierarchical thinking of the functional organization.

This study argues that project management in modern organizations is essentially a cross-functional activity and the study therefore focuses on organizations that do projects in matrix, lateral or cross-functional organizations. Most hybrid (type II) organizations adopting project management will be confronted with the typical problems associated with matrix organizations.

Another type of organization (which may fit within the type I definition) runs projects as their main line of activity, but for multiple clients. They do not easily fit into the hybrid or pure project organization as they are organized along lines of specialist disciplines and their resources take part in multiple projects at the same time. The character is essentially matrix and they face similar problems as the target organization of this study. Large consultancy engineering companies typically fall in this class. Their organizational structures are formed around functional expertise departments headed by line managers. They are thus included in the study as suggested in section 2.5.2.

### 2.5.4 Classification of projects

There has been theoretical recognition for the fact that projects differ in a number of aspects and that one cannot simply study projects and project variables as homogenous and generalizable across all projects. Shenhar and Dvir (1996: 609) criticize a tendency by many

academic scholars and even the Project Management Institute to assume that all projects are similar.

In an empirical study, Shenhar and Dvir (1996: 628-630) used a two-dimensional typology of projects with technological uncertainty on the one axis and project scope on the other. Their study confirmed distinct clusters of projects that differed in managerial approaches and project management practices.

Evaristo and van Fenema (1999: 277) propose another typology. On the one axis it differentiates between projects on the basis of a single location *versus* multi-location, and on the other axis, between a single project *versus* a program of multiple projects. Icmeli-Tukel and Rom (1998: 56-57) found in an empirical study that projects also cluster into two other categories. These are smaller, less costly, and shorter duration projects carried out in one functional department, and larger, high-value and long duration projects normally done in a matrix organizational form. Turner and Cochrane (1993: 94) again place projects in four categories based on two dimensions, namely the clarity of goal definition, and the clarity of methods to execute the project.

By integrating these classifications, one could distinguish between two extremes of project types: projects that are small, utilize relatively straightforward technology, are done within one department, are of short duration, have low uncertainty, and are low cost; and projects that are large, comprise multiple subprojects, are complex with regard to methods and technology, face goal uncertainty, are carried out in multiple locations, and involve multiple functional disciplines.

This study is being confined to the character of the matrix and hybrid organization. If one extends this now to the types of projects, neither of the two extremes are representative of typical matrix functioning. The simple project is normally carried out within one department, requiring very little cross-functional input and coordination and done within the culture and authority relationships prevailing in one department. The large project is normally done by a dedicated project unit, even organization, resources are committed relatively permanently, and authority structures are well-defined for the duration of the project. Many of the different functional disciplines are external (i.e. subcontractors) and assigned to the project through firm contractual arrangements.

From experience, another continuum of project types can be described. On the left side there are projects with a high technology or functional expertise input, but where the coordination load is relatively low. These projects are largely functionally driven. The right side corresponds to projects with a relatively straightforward technical input, but with a high coordination load. These projects represent largely a project driven perspective.

The middle of the continuum represents projects with a medium technical input and a medium coordination load. This is typical of the hybrid organization. Organizations doing mostly left side projects tend to have functional cultures, whilst organizations doing largely right side projects, will tend to have project-driven cultures. This is why the hybrid organization, which emphasises projects mostly in the middle of the spectrum, is anticipated to be dependent on a project management supportive culture. Most hybrid organizations are found to come from a functionally orientated culture and lack the essential characteristics of the project-driven culture to deal with the added complexity of coordination.

The project type targeted for this study, because it is characteristic of the hybrid organization, lies in the middle of the continuum and may be described as follows:

- require multi-functional participation from the parent organization;
- sufficiently complex with respect to size, budget, time constraints, uncertainty and coordination, so that projects require dedicated project management methodology; but
- also sufficiently small so that a large portion of each project is carried out within the organization, making use of *ad hoc* as well as permanent project staff.

## 2.6 SUMMARY

This study has now outlined the domain of organizations it is concerned with. In essence it addresses organizations that have a matrix or lateral character, in other words, organizations that manage projects in a cross-functional way. The typical organization that this study focuses on is hybrid in nature, thus the organization does projects as well as routine operational work. But is has been shown that certain project organizations may also have a matrix character, and they are included in this study. These organizations may be an important source of empirical variance in respect of both the dependent and independent variables.

The above organization types should not be seen as conforming to precise definitions of organizations; they should rather be understood as belonging to a broad class of organizations that are involved in multiple projects. By also bringing in the type of project perspective, it emphasizes those organizations involved in projects that are sufficiently complex to justify the use of formalized project management, and that require multi-disciplinary participation from its in-house resources.

## 2.7 THE THEORY OF PROJECT AND PROJECT MANAGEMENT SUCCESS

Two themes dominate the domain of success in the field of project management, namely *project success* and *project management success*. These two concepts are often erroneously used interchangeably and synonymously, as will be shown.

One of the earlier distinctions between these terms came from De Wit in 1988 (cited in Cooke-Davies, 2002: 185), who defined *project success* as satisfying the overall goals of the project, and *project management success* as satisfying the objectives of time, cost and quality. But the confusion caused by these terms continued. Webster (1994: 22.7) criticized the ambiguous use of the word *project* to mean both the <u>end product</u> and the <u>planned execution</u> of activities to create this product. In a later study of project management success literature, Munns and Bjeirmi (1996: 86) still found an overlapping and confusing use of the terms *project* and *project management*.

Munns and Bjeirmi (1996: 81) pointed out that many projects were successful (e.g. the Concorde, the Thames Barrier, the Fulmar North Sea oil project) but they had failed in terms of the project management success parameters of delivering within cost and time. According to Munns and Bjeirmi (1996: 82) it could take years to measure the success and benefits of a project; this is a long term concept, whereas the emphasis of project management is up to delivery and is a shorter term concept. Their description of the project management process includes the functions of defining project requirements, laying down project scope, allocating resources, scheduling the work, controlling work progress, and managing the deviations from original plans. It is concerned with delivering on time, within the budget, and meeting the performance requirements. Important principles underlie their viewpoint (see Munns and Bjeirmi, 1996: 83-85):

- project management entails only a subset of the total life span of the project, and it ends when the project is delivered to the customer;
- project success can only be measured in the long term; and
- successful project management does not necessarily lead to project success and, *vice versa* weak project management does not necessarily prevent a good project from being a success in the market place.

The Munns and Bjeirmi (1996: 85) illustration of the domains of project success and project management success is shown in Figure 2.1.

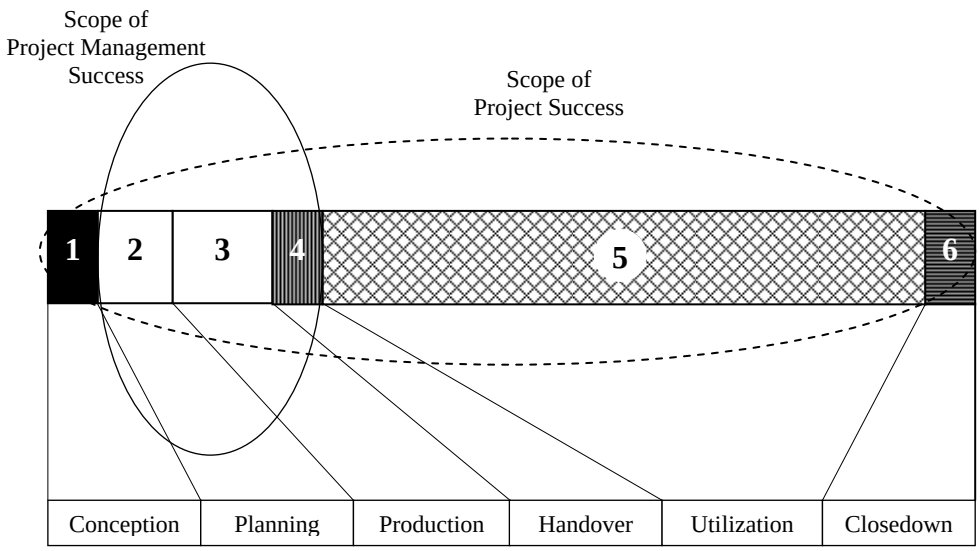


**Figure 2.1: The scope of project management success**

Source: Reproduced from Munns and Bjeirmi (1996: 85)

Baccarini (1999: 25) contributes to this debate by distinguishing between project management success and *product success*; the latter defines the success of the product resulting from the project, i.e. what has been delivered by project management. *Product success* here is thus used similarly to *project success* of Munns and Bjeirmi (1996). Lim and Mohamed (1999: 247) again make a distinction between the macro and micro perspective of project success. Their micro criteria involve the project completion parameters, whereas the macro criteria involve satisfaction with the product by all stakeholders, in particular the users. The latter thus addresses whether the project concept serves its goals. Micro criteria correspond to project

management success and macro criteria to project or product success, which is strategic management success.

The use of the term *project* in project success adds to the confusion. Recently again, Shenhar and Wideman (2002: 1-2) criticized, similarly to Webster (1994), the use of the term *project* where the *product* delivered by the project is meant. This state of affairs may be resolved by rather using a term such as *deliverable success*, (instead of project success) to convey the meaning of long-term project success.

The above viewpoints do not complete the domain of success in project management. Cooper (1999: 115-116), arguing from a new product development perspective, uses the terms *doing the right projects* and *doing projects right*. Doing *projects right* focuses on the process factors; primarily the activities of the project team and thus the project management process. The term *right projects*, however, has to do with external success factors, for example, the quality of project selection, prioritising projects, and new product strategies which he views as beyond the normal control of a project team, i.e. within the control of strategic management. This adds another aspect of project success.

Therefore, in summarizing the above viewpoints, one can now distinguish between three successive components in a sequence of project activity, each with a distinct influence in the eventual success of the overall project.

i. *Successful project selection*: This is related to the strategic considerations of a project, making sure that the right project has been identified and that projects are appropriately prioritized.

ii. *Successful project management*: This is associated with delivering within the project parameters of time, cost and performance and achieving initial customer acceptance (at delivery or handover). Success determinants are linked to how well the tasks executed by the project team - the project management process - have been performed.

iii. *Deliverable success*: This relates to the concepts of *project success* or *product success*. The emphasis is on the overall success of the project – whether the strategic choice of doing the project or developing the product can be justified - and can normally only be measured in the long term.

This concept is graphically illustrated in Figure 2.2.

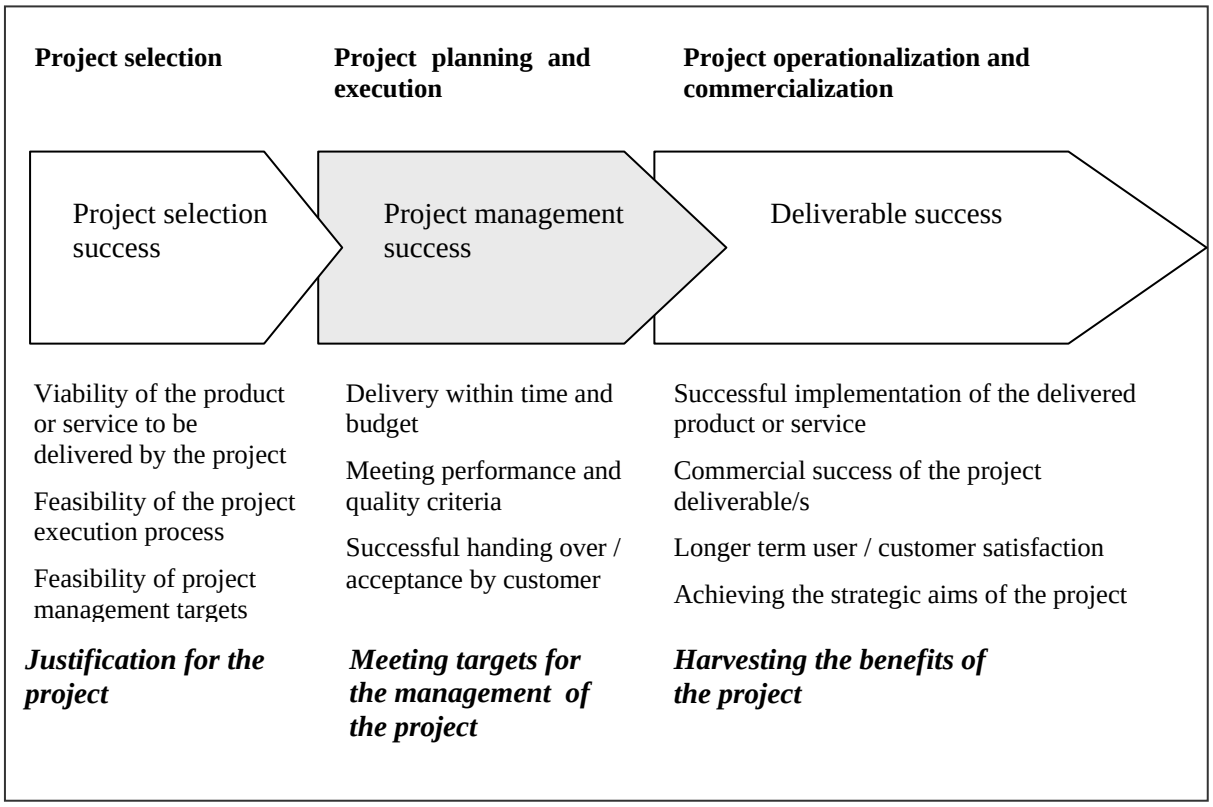


**Figure 2.2: Domains of success in projects**

Source: Schematic summary of the foregoing literature analysis

The above distinction is important for this research project. The concept of project management effectiveness, which has been formulated as the dependent variable of this study, specifically emphasizes the middle component, thus what is associated with successfully applying the core elements of project management methodology. This sub domain is shaded in the figure.

The illustration, however, still focuses on the concept of project management *success*, thus mainly the outcome criteria. But this lays an important foundation for positioning the construct of project management *effectiveness* by showing how and where the construct relates to current literature viewpoints. Project management *effectiveness*, because of its concern with the consistency and sustainability of project management, expands the notion of project management *success* by including determinants (process factors) that can predict success in achieving project management targets.

## 2.8 THE USE OF THE TERM PROJECT MANAGEMENT EFFECTIVENESS

In project management literature, *success* appears to be the term most commonly used, both in describing *project success* and *project management success*. In other fields organizational researchers make use of more terms, like *effectiveness*, *performance*, *productivity*, *outcomes*, and *efficiency* (Shenhav, Shrum and Alon, 1994: 753-754). However, Shenhav, *et al*. (1994: 754) criticize the often careless way researchers chose a term without paying due attention to the general consensus about its meaning.

The On-line Merriam-Webster's Collegiate Dictionary defines *success* as "a degree or measure of succeeding; or a favourable or desired outcome." The word success is thus narrow and places emphasis primarily on the end-result of an activity. The same source relates the terms *effect* and *effective* with the concept of achievement, but with emphasizing the process as having the inherent qualities to overcome obstacles and to possess the power to produce.

Therefore, in considering project management as a capability that can consistently manage projects successfully, *effectiveness* is the more appropriate term. The use of effectiveness facilitates the inclusion of outcome measures as well as process variables, or success predictors, into one construct.

## 2.9 SUMMARY AND CONCLUSION

This chapter has more clearly defined the context of this study project. It has shown certain general trends in the management of organizations, and how project management has followed these trends, towards the human side of management. The emphasis has moved away from classical scientific management techniques towards creating an environment for people to be creative and productive.

This chapter has also paid attention to the positioning of the key study parameters within the theoretical domains of project management. It has aligned itself with project management authors stressing the importance of culture at the organizational level to create a supportive environment for managing projects.

It has also focused on a class of organizations that practice projects in a matrix or cross-functional arrangement, thus having both vertical (functional management) and horizontal (project) chains of command.

The concept of project management effectiveness has been delineated from the broader concept of project success. It has shown why effectiveness, rather than success, has been chosen to capture the essence of a construct that focuses on the consistency of successful project delivery.

The theme of success in project management has been highlighted as confusing in its use of terms, and generally without a solid theoretical basis. In the next chapter the topic of organizational effectiveness is explored in order to find a more solid theoretical foundation for developing the construct of project management effectiveness.

# CHAPTER 3

## THE STUDY OF ORGANIZATIONAL EFFECTIVENESS

### 3.1 INTRODUCTION

This chapter is the first step in developing a construct of project management effectiveness. The subject of project management has so far made limited progress towards a comprehensive definition of effectiveness. Studies of this nature have mostly considered the term success as the dominant theme and narrowly focused on outcome measures or project goals as success criteria. The level of theoretical confusion in the topic has also been highlighted in the previous chapter.

In this chapter a theoretical foundation is sought in the organizational effectiveness literature on which to conceptualize a project management effectiveness construct. The chapter starts by giving some background as to why the concept of effectiveness has become important for project management.

### 3.2 BACKGROUND

The foundations of project management were largely laid by the need to manage large projects. Much of the extant body of knowledge originated from the mega-project industries such as the construction, defence and aerospace sectors. Practitioners and researchers in the field have been mostly concerned with the issues regarding success and failure of these large projects, resulting mainly in a single project perspective of project management.

As project management has become more widely used, and not only for large projects, but for many medium and smaller size projects, this perspective has become too narrow. Project management is increasingly being viewed as the organization's capability to accommodate the running of multiple projects, and to cope with the complexity of sharing and prioritizing resources between them. It is no longer only the methodology to manage a project. This shift in emphasis is addressed by a number of authors, for example, Arenius, Artto, Lahti, and Meklin (2000), Dinsmore (1999: 213), Gray and Larson (2000: 10), and Rad (2000: 3). The

use of the term *project portfolio management* also shows the growing recognition in the literature for a research interest in the simultaneous management of a range of projects (see for example Rad, 2002: 3; Turner, 1994: 4).

The concept of successful project management therefore has to include the notion of multi-projects and the issues related to a consistency in project delivery, thus taking an effectiveness perspective. It can also not focus mainly on the project itself, but has to address the more multi-dimensional relationship between project management, the people, and the organizational processes and infrastructure.

The project management literature recognizes this shortcoming. Authors, for instance, Cooke-Davies (2002: 188), Maylor (2001: 99), and Shenhar, Dvir, Levy and Maltz (2001: 701) criticize the narrow perspectives of project management success research. They call for the adoption of more balanced and multi-dimensional approaches, in line with, for example, organizational effectiveness research and The Balanced Scorecard ® developed by Kaplan and Norton. Cooke-Davies (2002: 188) adds that a balanced set of metrics, dealing with both predictors and outcomes of project success, is needed to address the issue of a consistent delivery of successful projects.

This type of criticism is not limited to project management. The inadequate use of effectiveness concepts in studies concerning the culture-performance relationship has also been criticized in the literature. See for example Wilderom, Glunk and Maslowski (2000: 203).

## 3.3 APPLICABILITY OF ORGANIZATIONAL EFFECTIVENESS THEORY

Project management as a formally structured arrangement to achieve a specific set of objectives, complies with the following definition of organization by Schein (as cited in Lawler, Nadler and Cammann, 1980: 2):

> The rational coordination of the activities of a number of people for the achievement of some common explicit purpose or goal through division of labor and function and through a hierarchy of authority and responsibility.

One of the more influential directions in the organizational effectiveness literature is the "open social systems" view of organizations advocated by Katz and Kahn (1966) as cited in Lawler, *et al.* (1980: 2). This thinking sees organizations within their co-existence and interaction with the environment. In terms of this view, project management can be conceived as an organization within a bigger organization, similarly to the organization within its environment.

Campbell (1977: 36) acknowledges the use of organizational effectiveness principles in empirical studies addressing effectiveness on lower organizational levels. Tsui (1990: 495) opines that, within open-systems logic, a department of an organization can be viewed as a micro-organization that must adapt to its environment to function; in this case the environment may constitute other departments, informal groupings in the organization as well as external constituencies of the larger organization. Tsui (1990) used an organizational effectiveness framework to study the effectiveness of the human resource department in the parent organization.

Thus by putting project management effectiveness within an organizational effectiveness perspective, attention is directed to the interactive and interdependent relationship between project management and the bigger organization.

## 3.4 REVIEW OF EFFECTIVENESS STUDIES

### 3.4.1 Introduction

The history of organizational effectiveness literature has been troubled by controversy and debate; no consensus in the meaning of organizational effectiveness has unambiguously emerged. From time to time authors acknowledged this lack of convergence in its definition. For instance, Katz and Kahn (1971: 52, 73) found that the term organizational effectiveness had been widely used, but often with conflicting meaning. Later Cameron and Whetten (1983: 1) came to the conclusion that, even after many years of work in this field, researchers had not reached any level of agreement regarding the construct of organizational effectiveness. This view was again reflected by Shenhav, *et al.* (1994: 771) after they had conducted a comprehensive study of the effectiveness literature in leading journals.

Basic differences in how scholars theorize about organizations led to different approaches to the understanding of organizational effectiveness. Gouldner (1971: 12-13) distinguishes between two fundamentally different views, namely the *rational model* and the *natural-system model* of organization. In the rational model paradigm, an organization is described in terms of its parts which can be made to conform through rational planning and control. The viewpoint implies an emphasis on the independency of the parts of organization. In contrast, the natural-system approach views the organization as an organism that responds with its own character flowing from the shared experiences by its members. The organization develops needs and goals separate from, and even in competition to, the formal organizational goals set by its designers. The focus is here on the interdependency of organizational parts.

The interdependency of parts of the system, however, is not seen as an adequate view of the organization. Bennis (1971: 123) by citing work by Emery and Trist (1959) on open systems thinking stresses the importance of an organization's interdependent relationship with its environment. To be effective, a system would need to manage the interaction with its environment, and develop an adaptive and problem-solving capability to cope with changing environments (Bennis; 1971: 126-128). Bass (1971: 105-106) proposes further that organizational effectiveness assessment must include the value of the organization to the individual member and to society.

According to Campbell (1977: 19-20) the different ways of understanding organizations has led to two main streams of thought in organizational effectiveness, namely goal-centered and natural systems approaches. Campbell (1977: 19) points out that, within goal-centered thinking, goals are seen as rational, finite in number, and they can easily be defined and understood. In comparison, the natural systems approaches focus on the complexity and dynamic nature of the organization. It adopts numerous other goals in its attempts to cope and survive, and to optimally distribute and preserve its resources (Campbell, 1977: 20).

### 3.4.2 A critical look at goal-centered approaches

The shortcomings of goal-dominated ways of assessing organizations, have received thorough attention from effectiveness scholars. Pennings and Goodman (1977: 188), for instance, associate the rational goal approach with a Weberian (bureaucratic) view of the organization. Criticism of goals is of specific interest to the field of project management which strongly

emphasizes compliance with the goals of time, cost and technical performance as its primary concern.

The preoccupation with goals is questioned on the grounds of the destructive effect when goals are maximally pursued at the cost of exploiting resources (Seashore and Yuchtman, 1967: 393-394). Etzioni (1971: 33-36) also emphasizes the importance of the organization to dedicate some of its resources towards maintaining the system. In his view the assessment of organization should balance goal model and system model approaches to address both the needs for achieving goals and to apply resources to serve organizational needs. A similar view is also reflected by Georgopoulos and Tannenbaum (1971: 180) in their means and ends perspective to effectiveness. They stress the importance of preserving the organization's means by not overloading organizational relationships. Steers (1976: 57) similarly proposes a process model of effectiveness which could address the assessment of key processes, and consider the optimization of goals (as opposed to maximization) within a set of constraints. Steers (1976: 61) further argues that effectiveness assessment should include consideration of effective behaviour and not only outcomes.

Yuchtman and Seashore (1971: 153-154) place focus on the processes and transactions between the organization and its environment and define effectiveness as the relative position of the organization to bargain and compete for scarce resources.

There are many other issues that cloud or confuse the concept of goals in organizations. Although goals are advocated by many as objective assessment criteria, they are criticized for that very reason by Yuchtman and Seashore (1971: 146-147) who claim that many goals are being set subjectively in the first place. Yuchtman and Seashore (1971: 152) also stress the difficulty in finding a rational way of identifying the variety of organizational goals.

The multiplicity of goals is seen by several authors to confuse assessment based purely on goals. Scott (1977: 64-67) distinguishes between the various levels of goals in an organization, and points out that, in the non-rational nature of the real organization, there may often be discrepancies between levels. Hannan and Freeman (1977: 111-113) distinguish between public goals and private or operative goals. Whereas public goals are set strategically and serve to legitimize an organization's role in society, operative goals are set at the functional level and may, due to the influence of powerful coalitions, attract nuances that

deviate from the public goals. Further concerns are raised by Van de Ven and Ferry (1980: 34-35) who emphasize the different types of goals and the complexity of different stakeholders having different expectations from the focal organization. Steers (1976: 51) also draws attention to stakeholder goals by questioning organizational viability where profit targets are chased without considering the goals of employees or society.

In their *population ecology model*, Hannan and Freeman (as quoted by Denison, 1990: 37; and Meyer and Gupta, 1994: 313) believe that the environment and its demand patterns are the key predictors of success – more so than internal conduct in the organization.

The problematic nature of goal-oriented assessment, however, has not disqualified goals as an assessment criterion. Mohr (1983: 232) questions the use of goal-free approaches because the need to validate other criteria would inevitably call for the use of some goals. Mohr (1983: 233) maintains that non-goal ways of evaluating effectiveness have failed to prove their adequacy in previous empirical studies. Hannan and Freeman (1977: 111), although sharing a critical view of goals, do not support their exclusion from effectiveness studies, and point out that the existence of goals is what distinguishes formal organizations from informal organizations or social groupings (e.g. families and communities).

### 3.4.3 Multi-dimensionality of effectiveness

Researchers have realized that effectiveness cannot be a simple concept, taking only a limited view of organizational activity. Kirchhoff (1977: 347-348), for example, criticizes a tendency to take a narrow approach of effectiveness, and maintains that effectiveness is multi-dimensional and a balanced achievement of a variety of goals. Further criticism of the search for a single concept of effectiveness comes from Connolly, Conlon and Deutch (1980: 212). Also Pfeffer and Salancik (1978: 32-33) refer to the “multi-faceted” nature of organizational effectiveness and the existence of different interest bodies, each with their own expectations of effectiveness from an organization. This view is perhaps aptly summarized by Van de Ven and Ferry (1980: 34) by remarking: “Obviously, organizations do not have goals; instead, people have goals for an organization”.

### 3.4.4 Multiple constituency approaches

The awareness of different stakeholders and their influence form the basis of the multiple-constituency approach of Connolly, *et al*. (1980: 212). The term constituency is seen to include individuals or groups not directly involved with the organization, but who are sufficiently close to form opinions and to exert influence on its activities (Connolly, *et al*., 1980: 213). Seashore (1983: 55) uses the term constituents as persons standing in an interdependent relationship with the organization, but acting on behalf of their own or other external interests. Constituents can include members of the organization, but in the capacity of serving their own or other needs.

In a further elaboration of the multiple constituency approach, Zammuto (1984: 608), recognizing previous work by Hrebiniak, and by Pfeffer and Salancik, suggests that the effective organization should be assessed in terms of satisfying the preferences of the most powerful constituencies. Another form of this approach is the *strategic constituency* models. Altschuld and Zheng (1995: 6) cite two models, developed by Boseman and Daft respectively, and claim that they are similar to the multiple constituency models. Altschuld and Zheng (1995: 7) also draw attention to the similarities between the *constituency* approaches and *open-systems* thinking with its emphasis on adapting to the environment.

### 3.4.5 Competing values approach

Quinn and Rohrbaugh (1983: 365-370) developed the *competing values framework* by testing the perceptions of experts on seventeen indices of effectiveness commonly used in previous research. They found that these clustered into a three dimensional framework of opposing values, namely flexibility *versus* control, external *versus* internal and means *versus* ends. This approach forms a basis for extracting preferences or values from leading constituents about how a particular organization should be run effectively.

The competing values model relates to many of the influential thinking patterns of effectiveness researchers. Quinn and Rohrbaugh (1983: 369) explained how the four quadrants, formed by the two-dimensional flexibility-stability and internal-external plane, show an association with other models:

- by combining external with control – a rational goal model;

- by combining external with flexibility – an open systems model;
- by combining internal with flexibility – a human relations model; and
- by combining internal with control – an internal process model.

### 3.4.6 Balanced approaches

From a plethora of effectiveness studies, no one concise model of effectiveness has emerged, or seems likely to emerge. Cameron (1986: 541), in reviewing a history of different models and controversial viewpoints, came to the conclusion that no one best approach or set of indicators exists. He argued that different approaches may best serve different research circumstances and regarded different models as complementing rather than as replacing each other. Earlier Campbell (1977: 15) suggested that there is no absolute definition of the construct of organizational effectiveness: "a truth that is buried somewhere waiting to be discovered".

Goodman and Pennings (1980: 195) assert that it is not possible to have a universally valid construct of effectiveness because there is no one agreed theoretical model of an organization. In the opinion of Campbell (1977: 18) the importance of the concept of effectiveness is that it is specific to the purpose of measuring effectiveness; organizations may thus be effective and ineffective at the same time depending on the angle of interest.

Cameron (1986: 542) lists some of the leading effectiveness models and proposes that the particular circumstances should guide the selection of a model, for example:

- where there are clear and measurable goals, use a goal model;
- where there is a clear connection between input and performance, use a system resource model;
- where there is a clear relationship between organizational processes and performance, use an internal process model;
- where constituencies have a strong influence on the focal organization, use a strategic constituencies model; and

- where the organization is unclear about its own or constituency preferences of effectiveness, use the competing values model.

The competing values perspective makes provision for different models of effectiveness to be used at the same time, and suggests that different stakeholders may emphasize different criteria of judging the same organization. Cameron (1986: 549-551) maintains that placing an extreme emphasis on one set of effectiveness criteria could be dysfunctional. He cited previous studies that had used the competing values model to bring home the point that opposing, and even contradictory preferences, co-exist in organizations and contribute to effectiveness.

*The Balanced Scorecard®* developed by Kaplan and Norton (1996: 54) proposed such a balanced perspective to measuring organizational performance. The model contemplates to assess performance in four areas of organizational activity, namely:

- financial results;
- scoring on customer-related issues;
- the measure of excellence of key business processes; and
- the ability to learn and grow.

Different effectiveness models, for example g*oal*, *constituency*, *internal process*, and *resource* approaches, can be recognized within Kaplan and Norton's approach.

What is strongly advocated is a thorough understanding of the context within which a specific effectiveness problem is researched. Cameron (1986: 544) emphasizes the importance of having an appropriate theoretical or conceptual picture of the context to be studied before effectiveness criteria are chosen. Campbell (1977: 18-19) maintains that the effectiveness construct only has meaning when it articulates a clear theory or model of how its variables should interrelate. Goodman and Pennings (1980: 193) assert that any construct of effectiveness should contain a functional statement which clearly specifies the relationship between the selected variables and effectiveness.

### 3.4.7 Effectiveness and performance in culture studies

Before concluding the discussion on organizational effectiveness, it is interesting to note that organizational culture studies in general have been criticized for taking a narrow view of effectiveness. Wilderom, *et al*. (2000: 203) claim that the dominant performance measurement approach in organizational culture studies, has been the use of accounting based measurements, placing it centrally within the rational goal paradigm of effectiveness assessment. They report that this type of measurement has met with criticism due to its vulnerability to manipulation, differences in accounting policies, and historic and short-term orientation, citing for example the work by Kaplan and Norton (1992) and Brown and Maverick (1994). According to them, more modern approaches take into account the multiple and competing nature of goals and the need to maintain a balance between the assessments of various stakeholders (including employees, customers and suppliers), thus ensuring survival.

In their evaluation of culture-performance relationship studies, Wilderom, *et al*. (2000: 204) have not found any study to employ a constituency approach to the measurement of the performance construct.

### 3.4.8 A summary of guidelines for effectiveness construct development

The field of organizational effectiveness has clearly progressed toward a multi-dimensional and balanced perspective of effectiveness. The organizational effectiveness literature reveals a number of important principles to consider when developing an effectiveness model, namely:

- the existence of different levels of goals which may include short-term operational goals as well as higher order and longer term goals;
- the contribution of intermediate process and resource factors to overall effectiveness;
- the open systems nature of an organization and sublevels of an organization;
- the influence of constituencies and their different expectations of organizational goals;
- the need to have a balanced perspective between constituent goals as well as between goals and process factors; and
- the importance of a proper theoretical conceptualization of the context to be studied.

Mohr (1983: 238) maintains that a generalizable answer to organizational effectiveness is not likely; what is needed is to approximate reasonable concepts of effectiveness that can provide managers with insights into the issues of effective functioning.

## 3.5 CONCLUSION

The question is how the principles summarised in the previous section relate to project management effectiveness. Firstly, project management strongly concentrates on the achievement of specific project objectives. Secondly, project management is adopted by organizations to bring them longer term strategic benefits; thus implying a set of goals of higher order. Thirdly, project management is highly dependent on systematic processes and a reliable resource base. Fourthly, project management runs in an interdependent relationship with the rest of the organization. Lastly, project management needs to address constituency considerations, such as the requirements of the customer, and the concerns and expectations of the organization's hierarchical management. The key issues of project management, therefore, show important similarities with the issues that have influenced organizational effectiveness research.

In the next chapter, the project management literature is studied in order to progress from current project management success thinking and frameworks towards an appropriate project management effectiveness construct.

# CHAPTER 4

## SUCCESS AND EFFECTIVENESS IN THE PROJECT MANAGEMENT LITERATURE

### 4.1 INTRODUCTION

Against the background of the previous chapter, which offered a multi-dimensional perspective of effectiveness and some pertinent guidelines for conceptualizing an effectiveness model, this chapter examines the project management literature relating to effectiveness in more depth.

The purpose of this chapter is to develop a framework of project management effectiveness. This is done by extracting evidence from the literature to build a pool of items that can be used to measure the effectiveness of project management in organizations during the empirical phase of this study.

When reading this chapter, the fact that certain authors use the terms project success and project management success interchangeably and synonymously, must be kept in mind. The discussion of the literature in this chapter does not attempt to alter the choice of terms, as used in the original source, to conform to the framework of this study. Later in the chapter, when the construct framework is being formed, due attention is paid to only include items that comply with the concept of project management effectiveness as defined for this study.

### 4.2 OVERVIEW OF SUCCESS MEASUREMENT CONCEPTS IN PROJECT MANAGEMENT

Traditionally, project success has been associated with delivering on time, within budget and meeting performance criteria (Pinto & Slevin, 1988: 68). Pinto and Slevin (1988: 68), based on findings by DeCotiis and Dyer (in 1979), and Baker, Fisher and Murphy (in 1983), proposed the inclusion of customer satisfaction considerations as part of the criteria for measuring successful projects. The original viewpoint was commonly referred to as the “triple constraint” (Kharbanda & Pinto; 1996: 37). Later, when the importance of customer

satisfaction was added, it became the “quadruple constraint” of project success (Kharbanda & Pinto; 1996: 38).

This core notion of project management success is acknowledged in most of the project management literature in recent years, including textbooks. But there are also examples of further elaborations around this concept.

Freeman and Beale (1992: 10) did a review of fourteen studies and found the following project success measurement criteria:

- meeting the technical requirements, sometimes split between the performance and quality dimensions;
- meeting the time and cost objectives;
- satisfaction by client, user and parent organization (not disturbing organizational culture and values);
- satisfaction of the project team members, including the contribution made to their career prospects;
- successful project termination including the quality of post-project auditing;
- success in providing innovative solutions to problems; and
- the manufacturability and commercial viability of the resulting product.

In a survey done by Wateridge (1998: 61) to determine success criteria for information technology projects, the following six criteria were found:

- conformance to user requirements;
- achievement of project’s objectives;
- completion within time schedule;
- conformance to budget;
- satisfaction by user; and
- conformance to quality requirements.

It is important to note that some of these criteria are in fact more deliverable success criteria than project management success criteria, in terms of the principles laid down in the previous chapter. Commercial success and satisfaction by the user could be more a result of selecting the right project, or launching it successfully in the marketplace, or of proper application by the users. As has been pointed out before, these factors generally fall outside the scope of the formal project management process.

Other contributions to the success literature in project management fall in this same category. Pinto and Slevin (1988: 68-69) expanded the client concern into further measures of success: the project is technically a valid solution (*Technical Validity*); the solution matches the specific client organization (*Organization Validity*); and the client actually improves its effectiveness through using the project (*Organizational Effectiveness*).

Shenhar, Levy and Dvir (1997: 11-12) proposed a multi-dimensional framework of measuring project success, namely: efficiency (in their definition meeting budget and timescales); the impact on the customer and meeting the customer's needs; the business success to the organization; and the future prospects created by doing the project (e.g. opening new markets and establish new technologies and core competencies). Atkinson (1999: 339,341) also included three further success concepts: the technical strength of the delivered system; the direct benefits of the project to the client organization; and the indirect benefits to a broader stakeholder base.

Most of these could be associated more with the success of the product delivered by the project, than by the way the project has been managed.

Another important dimension in project management success assessment is the type of project. Shenhar, Dvir, Levy, Maltz (2001) made a distinction between the quantification of success in low technology and in medium-high technology projects. These authors stressed the point that, for low technology projects, time and budget is critical; overspending and time delays should not be tolerated. On the other hand, higher technology projects involve more uncertainty and a certain level of target overruns could be accepted.

The importance of this principle is that, in comparative studies of a large population of project management organizations with different types of projects, the exact quantification of meeting budget and time duration targets may induce a considerable source of measurement error. For

example, overspending by 20% on a new technology development project may be much stronger indication of success than overspending by 5% on a low complexity construction project.

## 4.3 OVERVIEW OF SUCCESS FACTOR CONCEPTS

Lim and Mohamed (1999: 243) distinguish between a success criterion which is a standard of judgment and a success factor which is a contributing influence to a project's outcome. Lim and Mohamed (1999: 244) found that these are sometimes used synonymously in literature. Baccarini (1999: 29) proposes that project management process elements should be considered as factor variables rather than measures of project management success.

Success factors can be associated with other similar concepts, such as leading indicators, predictors, intermediate variables, or determinants of success. In the more comprehensive context of project management effectiveness, this family of variables is particularly important for complementing the outcome based variables in the overall construct.

Studies about success factors include, for example, the one by Clarke (1999: 140) who identified four success factors:

- effective communication throughout the project;
- clarity of project scope and objectives;
- breaking projects into manageable activities and work packages; and
- use of project plans at the correct level of detail to ensure their use as working documents.

Another example is a study done by Nicholas (1989) which he termed a force-field analysis. Nicholas (1989: 29) summarised his findings as nine drivers of project performance; suggesting also that lack of these drivers would inhibit project performance:

- adequate and comprehensive project planning;
- clear and well-understood project definition;

- adequate control and few changes;
- timely and continuous communication;
- well-prepared project implementation, termination and evaluation;
- top management commitment and support;
- project manager commitment, skills and authority;
- project team skills, commitment, teamwork ability; and
- adequate user (or customer) involvement.

Systematic research that empirically relate project management success factors or drivers to project management outcome measures are scarce, especially studies that involve large generalizable samples. Recently Skulmoski (2001: 13) asserted that the relationship between specific competencies and project success had been loosely and inconclusively addressed.

## 4.4 ORGANIZATIONAL LEVEL CONCEPTS

Effective project management as an organizational capability has received some attention in the literature within the concept of project management maturity models. Skulmoski (2001: 11-12) found in a study of relevant literature that project management maturity is primarily a concept that considers project management processes and systems together with associated knowledge and skills, and that many of the existing models are to an degree grounded in the Guide to the PMBOK.

An example of such a model is Kerzner's 5-level Project Management Maturity Model (PMMM). Kerzner (2001a: 42-43) defines the following 5-levels for project maturity:

- *Level 1*: Understanding of the basic knowledge of project management and the use of *common language* and terminology;
- *Level 2*: The use of *common processes* across projects in the organization;
- *Level 3*: Integrating all organizational methodologies into a *singular methodology* which is built around project management;

- *Level 4*: Ongoing process improvement through *benchmarking*; and
- *Level 5*: Continuous improvement.

Other examples of maturity models exist, such as the Capability Maturity Model (CMM) of the Software Engineering Institute (Dooley, Subra & Anderson, 2001), and the Berkeley Project Management Process Maturity Model (Kwak & Ibbs, 2000). The maturity models however do not lend themselves to comparative study. Due to their detailed nature, the maturity models are more suited to the audit of project management systems in specific organizations, than to large sample empirical studies across organizations.

Other authors make recommendations about specific conditions that need to be in place for organizations to be effective at project management, such as the following project management prerequisites suggested by Johns (1999: 53):

- understanding and proficiency in using formal project management systems and behavioural techniques by project managers, line managers, and team members;
- recognition of teamwork as a key building block for achieving company goals;
- recognition by the organization that it must support projects; and
- recognition that project management also needs ongoing support, coaching and direction.

## 4.5 DERIVING THE DOMAIN OF THE CONSTRUCT

The domain of the construct has been outlined by making use primarily of the three classes of literature discussed in the foregoing paragraphs: success criteria or measurement concepts; success factor or driver concepts; and lastly, studies addressing appropriate organizational processes, and components of a supportive infrastructure deemed to be prerequisites for project management.

The topic of how project management strategically benefits or adds value to the organization, although not normally associated with project management success, also had to be taken into account. The broader perspective emphasized by project management effectiveness requires a

consideration of the goals different stakeholders may have of project management. In this context it is argued that top management and the organization are key stakeholders and they should have explicit expectations from project management. These expectations should answer questions related to why organizations invest in project management in the first place. If project management fails to bring strategic advantages to the organization, or even if it causes unwanted side-effects or disturbances to the functioning of the organization, the likelihood of project management surviving in that particular organization becomes small.

In order to evaluate different issues for their relevance to this study, certain criteria were set, namely:

a) This study is intended to be valid for a large population of organizations, not a specific industry. Thus, items being too industry specific were excluded or were adapted to be more generically applicable.
b) Items related to project deliverable success (the longer term results or commercial success of projects) were excluded. Many sources blend or confuse this with project management success.

A list of about 230 statements concerning project success, project management success, and organizational expectations of project management, was extracted from the literature. This list was subjected to the criteria above and reduced to a more concise list of items, also by combining obviously similar statements. In other cases broad statements had to be broken down into more than one item to better operationalize its meaning. For example, many authors would support the importance of a sound communication flow in project management, but to capture the practical essence of sound communications, a few items (variables) had to be included.

This list was then categorized into headings which were considered to conveniently group sets of related items. At this point these categories were chosen to facilitate better understanding of the complete list of items by putting them under logical headings. The process resulted in a list of 78 items grouped into 13 categories or themes. The next section shows these items under their respective headings and indicates the literature evidence that supports each item.

## 4.6 PROJECT MANAGEMENT EFFECTIVENESS ITEMS FROM LITERATURE

### 4.6.1 Successful project management outcomes

This category specifies the extent to which the operational project objectives are met on a consistent basis.

**Table 4.1: Successful project management outcomes**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Projects consistently meet their cost targets | Archibald (1992: 17); Frame (1999: 11); Freeman and Beale (1992: 10); Pinto and Slevin (1988: 68); Wateridge (1998: 59) |
| 2 | Projects consistently meet time targets | |
| 3 | Projects consistently meet technical performance specifications | |
| 4 | Projects consistently meet the required quality standards | |
| 5 | Clients or end-users are consistently satisfied with what the organization's projects deliver | Frame (1994: 5, 9, 11); Freeman and Beale (1992: 10); Kerzner (2000: 31); Pinto and Mantel (1990: 270); Pinto and Slevin (1988: 68); Wateridge (1998: 61) |
| 6 | Clients generally talk positively about the organization's project work | Kerzner (2000: 31) |

This essentially represents the classical view on measuring project management success (the quadruple constraint), but it is intended here to describe performance on projects on average over time. The list of items and literature citations is shown in Table 4.1.

### 4.6.2 Meeting the organizational goals for project management

The second theme addresses what the organization expects from project management.

**Table 4.2: Organizational benefits of project management**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Project management improves the ability of the organization to utilise its human resources and specialists | Frame (1999: 15); Kerzner (2000: 158); Kezsbom and Edwards (2001) |
| 2 | Project management allows the organization to better respond to client demands | Gray and Larson (2000: 10); Kerzner (1998: 37); Kezsbom and Edwards (2001); Oosthuizen, Köster and De La Rey (1998: 29) |
| 3 | Project management allows the organization to better manage legitimate stakeholder demands | Oosthuizen, Köster and De La Rey (1998: 29); Jolivet and Navarre (1996: 265) |
| 4 | Project management creates a faster work flow (horizontal) in delivering new products | Bishop (1999: 6); Gray and Larson (2000: 7); Kerzner (1998: 37); Meredith and Mantel (2000: 140); Toney and Powers (1997: 7) |
| 5 | Project management enhances the concurrent use of multi-functional inputs in new development work in the organization | Frame (1999); Kerzner (1998: 37); Kezsbom and Edwards (2001); Meredith and Mantel (2000: 140); Oosthuizen, Köster and De La Rey (1998: 29) |
| 6 | Project management succeeds in relieving top management from coordinating major new projects or developments | Kerzner (1998: 37); Jolivet and Navarre (1996: 265); Meredith and Mantel (2000: 140) |

This category assesses the extent to which the organizational expectations of project management are met, besides meeting the direct project management objectives. In other words, it addresses the question of how well project management delivers strategic benefits to the organization as a whole. The list of items is shown in Table 4.2.

### 4.6.3 Project goal clarity and alignment

The next category concerns the importance of project goal setting. This category judges the extent to which project goals are clearly defined upfront, and communicated to project participants; and the degree to which project team participants generally subscribe and are committed to these goals. Table 4.3 show the items that define this category.

**Table 4.3: Project goal clarity and alignment**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Project goals are clearly defined at start-up | Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Gray and Larson (2000: 17); Johnson, *et al.* (2001: 2); Pinto and Mantel (1990: 270); Posner (1987: 51); White and Fortune (2002: 6) |
| 2 | Project goals are made clear to all participants | |
| 3 | Project participants are committed to the achievement of project goals | Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Gray and Larson (2000: 17) |
| 4 | Project team members take ownership of project goals | |
| 5 | Team members actively participate in decision-making regarding the achievement of project goals | Lechler and Gemünden (1997: 5) |

### 4.6.4 A rational and merit approach to projects and project management

Several authors assert that a rational approach should be followed in the way projects are selected, estimated and managed.

This is implied from calls that project goal setting and project decision-making should be based on proper analytical methods and homework; project goals should be realistically achievable. The project decision rationale should be based on the pursuit of organizational interests and not to serve personal interests or inter-departmental power concerns. The list of items is contained in Table 4.4

### 4.6.5 Appropriate project management methodology

It is also widely supported that the organization should follow a standardized and formal methodology of project management with appropriate supportive systems, processes and procedures.

The list of items to support this category is shown in Table 4.5.

**Table 4.4: A rational approach to project decisions**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | There is an emphasis on up-front project homework and feasibility studies | Cleland and King (1983) in Belassi and Icmeli-Tukel (1996: 143); Cooper and Kleinschmidt (1995: 454); Cooper (1999: 119); Pinto and Kharbanda (1996: 46) |
| 2 | Project estimates and planning are as far as possible done on factual and reliable information | Posner (1987: 51); Gray and Larson (2000: 17); White and Fortune (2002: 6); Belassi and Icmeli-Tukel (1996: 145) |
| 3 | Care is taken to ensure that there is market or end-user support for the proposed project | Pinto and Kharbanda (1996: 46); Pinto and Slevin (1989) in Belassi and Icmeli-Tukel (1996: 143); Slevin and Pinto (1987: 34) |
| 4 | Personal interest and political considerations do not dictate project decisions | |
| 5 | Projects are not subject to unrealistic deadlines and targets | Gray and Larson (2000: 17); White and Fortune (2002: 6) |
| 6 | Projects are continually reviewed to re-evaluate their viability and potential success | Cleland and King (1983) in Belassi and Icmeli-Tukel (1996: 143); Cooper and Kleinschmidt (1995: 454); Cooper (1999: 119); Pinto and Kharbanda (1996: 46); Vowler (2000: 3) |
| 7 | Projects are rather terminated early or adapted when they are not meeting initial expectations | |
| 8 | It is customary to have formal reviews to learn from project failures and/or successes | |
| 9 | Project priorities are not changed too frequently | Cooper (1999: 119) |

### 4.6.6 Effective project organization and authority structure

This category evaluates the extent to which there is an effective way of organizing project teams, assigning responsibilities and delegating authority to make decisions.

The list of items is shown in Table 4.6.

**Table 4.5: Project management systems and methodology**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | The organization has a standardized and effective system for managing projects | Avots (1969: 80); Cooper (1998: 3); Johnson, *et al.* (2001: 3); Kerzner (2001a: 42-43); Lechler and Gemünden (1997: 5); Martin (1976) in Belassi and Icmeli-Tukel (1996: 143); Nicholas (1989: 29) |
| 2 | Project participants generally understand the project management procedures applied in the organization | |
| 3 | The organization has the ability to estimate and plan its projects with reasonable accuracy | Clarke (1999: 140); Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Gray and Larson (2000: 17); Lechler and Gemünden (1997: 5); Nicholas (1989: 29); Posner (1987: 51) |
| 4 | The project management process facilitates the implementation of projects with minimum start-up problems | Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Morris and Hough (1987) in Belassi and Icmeli-Tukel (1996: 143) |
| 5 | Project management process involves strong monitoring and control over activities on an ongoing basis | Dvir, et al. (1998: 932); Lechler and Gemünden (1997: 5); Pinto and Mantel (1990: 270); Wateridge (1998: 60); White and Fortune (2002: 6); and Baker, Murphy and Fisher (1983), Lock (1984), and Sayles and Chandler (1971), all in Belassi and Icmeli-Tukel (1996: 143) |
| 6 | There is an adequate focus on managing project risks | Cooke-Davies (2002: 186); Pinto and Kharbanda (1996: 46); Vowler (2000: 3) |
| 7 | Project scope is comprehensively and adequately defined | Clarke (1999: 140); Cooper and Kleinschmidt (1995: 454); Cooper (1999: 119); Gray and Larson (2000: 17); Nicholas (1989: 29) |
| 8 | The organization has appropriate tools and systems to support the project management process | Avots (1969: 80); Lechler and Gemünden (1997: 5); Martin (1976) in Belassi and Icmeli-Tukel (1996: 143); Slevin and Pinto (1987: 34) |
| 9 | Project participants generally believe in the project management procedures applied in the organization | Johns (1999: 53); Nicholas (1989: 29) |
| 10 | Project scope is changed only in a controlled way | Abramovici (2000: 48); Avots (1969: 79); Cooke-Davies (2002: 186); Kerzner (1992) in Baccarini (1999: 28); Nicholas (1989: 29) |

**Table 4.6: Effective project organization and distribution of authority**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Project managers are given the necessary authority to execute their responsibilities | Cooke-Davies (2002: 186); Cooper and Kleinschmidt (1995: 453); Lechler and Gemünden (1997: 5); Vowler (2000: 3) |
| 2 | Project team members understand their project responsibilities | Cooke-Davies (2002: 186); Martin (1976) in Belassi and Icmeli-Tukel (1996: 143) |
| 3 | There are clearly laid down decision-making principles | Vowler (2000: 3) |
| 4 | Decision-making is smooth and efficient | Vowler (2000: 3) |
| 5 | Project teams are generally effectively structured and mobilized | Avots (1969: 78); Cooper and Kleinschmidt (1995: 453) |
| 6 | Project managers are held accountable for meeting their responsibilities | Cooke-Davies (2002: 186); Cooper and Kleinschmidt (1995: 453); Martin (1976) in Belassi and Icmeli-Tukel (1996: 143) |

### 4.6.7 Access to the resources needed to execute projects

Project management, not unlike any other function of production or operations, is heavily dependent on the necessary resources. But because projects are temporary in nature, the relationship between projects and the resource base is essentially fluid and competition for priorities are the norm.

Several points related to the reliability of resources, and the need to have control over resources, are found in the literature. Table 4.7 lists items that are associated with the adequacy of resources.

**Table 4.7: Access to resources**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Project managers are adequately empowered to access the required resources for their projects | Lechler and Gemünden (1997: 5) |
| 2 | The organization is committed to providing the agreed upon resources | Belassi and Icmeli-Tukel (1996: 145); Cooper (1998: 11); Posner (1987: 51); White and Fortune (2002: 6); Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143) |
| 3 | Project managers can normally rely on the work output of organizational resources | |
| 4 | The organization makes adequate provision for project funding | Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Cleland and King (1983) in Belassi and Icmeli-Tukel (1996: 143); White and Fortune (2002: 6) |
| 5 | The availability of resources are taken into account when deciding upon projects and setting priorities | Cooper (1999: 119, 129, 133); Posner (1987: 51) |

### 4.6.8 Supportive organization

An aspect that gets extensive coverage in the success literature is the need for projects to enjoy the support of senior management. Likewise, many authors recognize the importance also that the rest of the organization, in specific the functional departments, should be supportive of project management.

This category therefore addresses the degree to which top management and the organization as a whole understand and are supportive of the project management function, and that project priorities are aligned with organizational priorities. See Table 4.8 for a list of items.

**Table 4.8: A supportive organization**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Top management has an understanding of what project management entails | Avots (1969: 79); Nicholas (1989: 29); Pinto and Mantel (1990: 270); Belassi and Icmeli-Tukel (1996: 145); Cleland and King (1983) in Belassi and Icmeli-Tukel (1996: 143); Lechler and Gemünden (1997: 5); Cooper (1998: 13); Fowler and Walsh (1999: 8); Gray and Larson (2000: 17); Johnson, *et al.* (2001: 2); White and Fortune (2002: 6) |
| 2 | Top management members take active interest in projects and give support when necessary | |
| 3 | Project work generally is supported by the rest of the organization | Cooper (1999: 119); Gray and Larson (2000: 17); Johns (1999: 53); Posner (1987: 51); Cleland and King (1983), and Sayles and Chandler (1971) both in Belassi and Icmeli-Tukel (1996: 143) |
| 4 | Projects are not seriously affected by conflict existing between departments | Posner (1987: 51) |
| 5 | Top management ensure that project priorities are well-defined and are subscribed to by the rest of the organization | Cooper (1999: 119, 129); Lock (1984) in Belassi and Icmeli-Tukel (1996: 143); Posner (1987: 51); Slevin and Pinto (1987: 34) |
| 6 | People from different departments in the organization work together well in project teams | Posner (1987: 51) |

### 4.6.9 Sound communications in projects

The need for sound communication between members of a project team is also an important success factor in the literature. Similarly, a breakdown in communications has been recognized as one of the key factors that cause projects to fail.

This category judges the extent to which there is a healthy level of communication in project teams and whether there is an emphasis on the efficient dissemination of important project related information to all participants. The list of items is shown in Table 4.9.

Note that the authors cited in Table 4.9 do not all necessarily support all the items listed. These citations generally confirm the overall concept, the need for strong communications in projects. The list of items represents different emphases some of the authors use to elaborate the notion of sound project communications.

**Table 4.9: Sound communications in projects**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Project team members often informally discuss project matters | Clarke (1999: 140); Cleland and King (1983) in Belassi and Icmeli-Tukel (1996: 143); Fowler and Walsh (1999: 8); Lechler and Gemünden (1997: 5); Lock (1984) in Belassi and Icmeli-Tukel (1996: 143); Nicholas (1989: 29); Pinto and Mantel (1990: 270); Posner (1987: 51); Slevin and Pinto (1987: 34); Verner, Overmyer and McCain (1999: 1025); White and Fortune (2002: 6) |
| 2 | Team members are kept informed of project progress and developments | |
| 3 | Project meetings are usually informative | |
| 4 | Project information systems provide helpful and accurate project information | |
| 5 | The channels for reporting project problems are clear | |

### 4.6.10 Effective consultation with the client or end-user

This category contains items related to how the project management process encourages and effectively facilitates consultation with the client or end-user on a regular or ongoing basis. Project management inevitably starts from a degree of vagueness about the final solution required by the client. The desired final solution is frequently an ongoing process of consultation and design.

**Table 4.10: Project-client interface**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | During project execution regular discussions are maintained with the client or end-user | Cooper (1999: 119); Belassi and Icmeli-Tukel (1996: 145); Dvir, *et al.* (1998: 932); Gray and Larson (2000: 17); Johnson, *et al.* (2001: 2); Nicholas (1989: 29); Pinto and Mantel (1990: 270); Slevin and Pinto (1987: 34); Verner, Overmyer and McCain (1999: 1025) |
| 2 | Client or end-user inputs are considered when making project decisions | |
| 3 | There are normally good relations between project teams and their clients | |
| 4 | Each project has an identified client or end-user | |

Therefore, the need for effective client interface mechanisms is strongly promoted as a project success factor. The list is shown in Table 4.10.

A similar remark as in section 4.6.9, about the selection of items, and how they are supported by the cited authors, applies here.

### 4.6.11 Quality of project leadership

Table 4.11 shows the items associated with the quality of project leadership.

**Table 4.11: Quality of project leadership**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Care is taken to put competent project managers in charge of projects | Avots (1969: 78); Belassi and Icmeli-Tukel (1996: 145); Johnson, *et al.* (2001: 2); Lock (1984) in Belassi and Icmeli-Tukel (1996: 143); Nicholas (1989: 29); Pinto and Kharbanda (1996: 46); White and Fortune (2002: 6); Pinto and Slevin (1989) in Belassi and Icmeli-Tukel (1996: 143); Sayles and Chandler (1971) in Belassi and Icmeli-Tukel (1996: 143); Verner, Overmyer and McCain (1999: 1025); Vowler (2000: 3) |
| 2 | The organization has a core of experienced project managers | |
| 3 | Project managers have suitable team and people leadership qualities | |
| 4 | The organization takes adequate steps to appropriately train project managers | |

This category expresses the need to appoint the right people and to ensure that project leaders are effectively trained and qualified.

### 4.6.12 Project human resource adequacy

This category assesses the extent to which people assigned to projects are generally competent in their line of specialization and have a sufficient commitment to delivering quality work.

**Table 4.12: Human resource adequacy in projects**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | People participating in projects are generally competent in their fields of expertise | Baker, Murphy and Fisher (1983) in Belassi and Icmeli-Tukel (1996: 143); Dvir, *et al.* (1998: 931); Freeman and Beale (1992: 10); Gray and Larson (2000: 17); Pinto and Mantel (1990: 270) |
| 2 | Project team members have adequate project management related skills | |
| 3 | There are always enough project team members around with innovative and problem-solving | Freeman and Beale (1992: 10) |
| 4 | There is an acceptably low level of rework in most projects | Reichelt and Lyneis (1999: 148-149) |
| 5 | Project team members have adequate teamwork orientation and skills | Cooper (1998: 13); Cooper (1999: 122); Lechler and Gemünden (1997: 5); Nicholas (1989: 29) |
| 6 | Project team members have the maturity to work independently on project tasks | Dvir, *et al.* (1998: 931); Gray and Larson (2000: 17) |

This category also requires participants to be sufficiently skilled in project management and teamwork, and amongst them, to offer sufficient innovative and problem-solving abilities. Table 4.12 shows the list of items associated with this category.

### 4.6.13 Consideration for stakeholders

The last category is concerned with the extent to which project management is carried out with an "open systems" mindset.

This aspect groups items which consider the interdependent relationship between project management and the rest of the organization, as well as with the environment. Table 4.13 lists the items associated with this category.

**Table 4.13: Consideration for stakeholders**

| No | Effectiveness factor or criterion | Citations |
|---|---|---|
| 1 | Projects are carried out without compromising the culture and values of the organization | Freeman and Beale (1992: 10); Kerzner (1992) in Baccarini (1999: 28); Kerzner (1989) in Wateridge (1998: 60) |
| 2 | Project team members are generally satisfied with participating in projects and how it contributes to their career growth | Archibald (1992: 17); Freeman and Beale (1992: 10) |
| 3 | Projects are done without disrupting the rest of the organization's workflow | Freeman and Beale (1992: 10); Kerzner (1992) in Baccarini (1999: 28); Kerzner (1989) in Wateridge (1998: 60) |
| 4 | Project management is done in harmony with the functioning of line management in the organization | Kerzner (2000: 158); Wateridge (1998: 63) |
| 5 | Project management always consult people that may be affected by projects (internal and external to the organization) | Morris and Hough (1987) in Belassi and Icmeli-Tukel (1996: 143); Pinto and Kharbanda (1996: 46); Pinto and Slevin (1989) in Belassi and Icmeli-Tukel (1996: 143) |
| 6 | Project management activities are sensitive to the dominant political sentiments in the organization | Morris and Hough (1987) in Belassi and Icmeli-Tukel (1996: 143) |

## 4.7 CHAPTER SUMMARY

In this chapter it has been shown that a substantial body of project management literature exists that can be associated with the concept of project management effectiveness in an organization. By moving away from the concept of success, and in particular from only viewing project management in terms of meeting direct results, a more comprehensive domain of effectiveness could be deducted from the literature.

Many of these sources are either addressing what they call project success factors, or generally describe the project management circumstances associated with delivering projects on time, within budget, meeting the technical criteria, and achieving customer satisfaction.

These findings lay the foundation for developing a construct of project management effectiveness that is built upon a strong literature support in project management, and at the

same time pay attention to the dominant concerns and influences of organizational effectiveness theory. The further development of the construct and its assessment instruments is dealt with in Chapter 8.

The content of effectiveness as presented in this chapter also provides a certain level of input to the concept of a supportive organizational culture. It is inconceivable that project management in a specific organization will enjoy healthy communications or support from top management, when in the organization itself (i.e. referring to the organization's culture) communication is not practiced or encouraged, or management styles are generally unsupportive.

# CHAPTER 5

## THE STUDY OF ORGANIZATIONAL CULTURE

### 5.1 INTRODUCTION

This chapter presents an overview of the study of organizational culture and deals with the more important definitions and study approaches of the topic. The chapter further reviews the dominant debates in this study field, and pays specific attention to the controversies of quantitative cultural research as opposed to the more traditional qualitative research, and the differences between culture and climate. It further addresses the prominent concerns and weaknesses in previous survey type cultural studies.

The full definition of the culture construct for this study is not developed in this chapter. This is done in the next chapter where the study of culture by means of quantitative survey methods and the topic of dimensions of culture are examined in more depth.

### 5.2 BACKGROUND

#### 5.2.1 Brief overview of culture studies

Organizational culture has undoubtedly become a popular theme in the study of organizational behaviour. There is a general acceptance amongst many scholars and practitioners that culture has an important influence in the way an organization functions and expresses itself.

Pettigrew (1990: 424) says that the study of culture places an emphasis on discovering “the sources of coherence and consistency” in the organization. According to Pettigrew this includes studying the systems of rules, beliefs and ideologies that legitimize power relationships and provide meaning to members.

The theme of culture, however, has proved to be rather wide and it has attracted many different meanings and interpretations, also different approaches to its study. A study title that includes the term *organizational culture* may reflect any one of a range of research interests.

It could be studying the set of dominant management styles being in force in an organization. It may also target the coherent patterns of behaviour and values of employees, or the rituals, dress codes, and celebrations characterizing the organization. Other researchers may use the term to explore the deep-seated insider knowledge that explains life in the organization. Still more researchers may use the term as a fashionable title for a climate study, or for any set of behavioural variables that are conveniently grouped for a particular research purpose.

The growing body of culture studies has therefore also led to an accumulation of contesting viewpoints and debates in the academic literature. Strong points of criticism are raised and the following pertinent questions embody the typical concerns in the literature (which will be more comprehensively addressed in the rest of this chapter):

- Can culture be studied comparatively between organizations, or should it focus on the uniqueness of a particular organization?
- Is it legitimate to view culture as a managerial instrument for social control?
- Can culture be studied quantitatively and by way of survey questionnaires?
- Should culture be studied as an effectiveness or performance variable?
- Which levels of culture can be considered as truly culture and not merely situational manifestations of the underlying culture?
- Are many of the so-called culture studies in fact addressing culture or are they addressing organizational climate?

In the light of these controversies researchers should not carelessly embark on, what they would like to call, “culture” studies. Researchers have an obligation to pay attention to these relevant conceptual issues and to ensure that they align their research with acknowledged cultural research traditions.

### 5.2.2 Positioning this study in the domain of culture studies

The purpose of this research project places itself within the comparative management cultural research tradition. Smircich (1983: 354) describes this approach as the attempt to delineate

systematic dimensions of organizational culture and to study their relatedness with organizational processes and results.

This particular approach finds itself central to many of the debates in culture studies, as highlighted in the questions above. This chapter therefore addresses these concerns in an attempt to ensure that a research philosophy is adopted that can be justified within the domain of cultural studies.

## 5.3 LITERATURE OVERVIEW OF ORGANIZATIONAL CULTURE

### 5.3.1 What is organizational culture?

Pettigrew (1979: 574) describes culture as the "source of a family of concepts" such as symbols, language, ideologies, beliefs, rituals, and myths. He singles out symbol as the most inclusive category of culture and says that symbols can be seen everywhere: in objects of the organization; in its vocabulary and language; in the layout of buildings; and in beliefs about the use and distribution of power and status (Pettigrew, 1979: 574).

O'Reilly (1995: 318) describes culture as a form of social control which could be powerful as members often conform to the common norms and expectations to be accepted by a group. Deal and Kennedy (1982: 15) see cultures as a system of informal guidelines telling people how to behave "most of the time" and cutting out uncertainty about how to respond in particular situations. Wilkins (1983: 30) calls culture a tacit form of social agreement that supplements the employment contract; it helps people understand the subtle rules of reward and punishment, and how things generally work in the organization.

Schein (1992: 68) views culture as the product of a group's coping and learning efforts, and as being formed by the effectiveness of past decisions and processes. Gregory (1983: 364) similarly defines culture as a form of knowledge; as "learned ways of coping with experience".

The concept of culture is rather wide. Pettigrew (1990: 415) sees culture as extending over a range of organizational activities, including organizational structures, control and reward systems, and human resource practices. But these do not necessarily form a definition of

culture; they can only be visualized as culture when they are shaped into distinct and consistent patterns in a particular organization.

Schein (1992: 10) states that culture could be distinguished from the subject matter contained within its description (e.g. norms, behavioural patterns, traditions, and values), by the "patterning and integration" of these over time, and the level of "structural stability" reached in the organization. Cooke and Szumal (1993: 1322) report that most definitions of culture have two ingredients: the concept implies patterns of ideas and understanding; and these patterns are shared by members. Deal and Kennedy (1982: 22) likewise associate culture with the knowing and sharing of values across the organization.

An important distinction can be drawn between organizational capacity and organizational culture. Capacity determines what an organization can do, but culture determines what the organization will do, as shaped by its underlying value systems.

### 5.3.2 The different levels of culture

To more fully explain culture several authors make a distinction between different layers of culture. Schein (1992: 17), for example, used a three-level model in his explanation of culture, namely:

- the *artifacts* as the most superficial level and representing the visible organizational structures and processes;
- the *espoused values* embodied in the strategies, goals, and philosophies of the organization; and
- the *basic underlying assumptions* which are the hidden, tacitly accepted beliefs, and feelings and which represent the "ultimate source of values and action" of the organization.

Other researchers only distinguish between two main layers of culture. For example, Trice and Beyer (1984: 654) describe culture in terms of its *substance* and its *forms*: the *substance* is found in the organization's values, norms and ideologies; and the *forms* are how the substance is expressed and practiced.

Thompson and Luthans (1990: 337) opine that culture is a cognitive concept which is defined by the attitudes of people. Thompson and Luthans (1990: 337) distinguish between the culture (the attitudes of people), and the manifest side of culture (how people behave), but they admit that there is a close linkage between the two. Schwartz and Davis (1981: 32) again see culture as a concept that acts upon peoples' values and attitudes, but that it expresses itself in the management and problem solving styles of members.

The three layer concept of Schein (1992) enjoys acceptance in the literature. Martin and Siehl, (1983: 53) even adds a further category to Schein's levels of culture, namely management practices. But other authors, like those quoted above, understand culture as mainly two layers: a deeper or hidden side of culture that is embodied in attitudes, values and assumptions; and a more superficial or expressive side that is found in the practices, behaviour, and management styles of an organization.

It appears that some authors divide the middle layer of Schein (1992), the espoused values layer, into deeper and hidden values, and values that are more superficially articulated and practiced. For example, Sathe (1985: 234) distinguishes between two levels of cultural values: the espoused values that are merely complied with, and the deeper internalized values that are much harder to give up.

The issue of cultural levels will be explored further in the next chapter where the focus of the survey instrument for this study is developed.

### 5.3.3 Uniformity of cultures and the existence of sub-cultures

Several scholars argue that organizational cultures are not necessarily pervasive or consistent in organizations, and that organizations may have different sub-cultures.

Gregory (1983: 374) suggested a multi-cultural perspective as a more accurate model of culture after finding in an empirical study how different cultural influences exert themselves in an organization. Her study demonstrates both external and internal sub-cultural influences: external sub-cultures, mainly occupational and ethnic cultures that cut across many organizations; and internal sub-cultures that exist in different departmental or project cultures.

Martin and Siehl (1983: 52) similarly found cultures not to be always uniform, and contended that organizations could have sub-cultures that might be in conflict with the main culture.

### 5.3.4 The negative effects of culture

Wrong cultures could have detrimental effects to organizations. Deal and Kennedy (1982: 136) assert that certain cultures would allow members to pursue their own interests and defeat organizational purposes. They also warned that cultures characterized by an inward orientation, inconsistencies and short term visions, could lead organizations to stagnation (Deal & Kennedy, 1982: 137).

Kilmann (1985: 354-355) also expresses a note of warning that cultures will tend to sustain past successful behaviour, and could fail to recognize changes in the environment, and even to become aware of their own self-destructive ways. According to Kotter and Heskett (1992: 11-12), destructive cultures develop over times of organization success, but when change is needed, they instead tend to uphold the old power structures and ways of doing.

### 5.3.5 Culture and change

One of the strong forces behind the persistent scholarly and practitioner interest in the research of organizational cultures is the need for organizations to transform. The previous section indicates how culture tends to preserve old practices, and resists change.

Lorsch (1985: 84-85) accentuates the linkage between strategy and culture and stresses the need for organizations to consider the impact of their cultures on planned strategic change. Deal and Kennedy (1982: 34-35) maintain that strong values could become obsolete and support behaviour in directions that are no longer appropriate, and as such will strongly resist change. Also Kotter and Heskett (1992: 24) report that strong cultures could be powerful in their obstruction to needed change, and could lead to organization dysfunction.

The difficulty in the culture-change relationship lies in the fact that it is the hidden component of culture that surfaces and resists change. Wilkins (1983: 34) says that the existence of a culture becomes prominent and "asserts" itself in times of change. Lorsch (1985: 91) stresses the difficulty in recognising the underlying beliefs that shape a culture, which then often pose an “invisible barrier” to succeeding with planned changes.

It appears that strong cultures in particular can be a strong force against change. But Trice and Beyer (1984: 665) argue that even weak cultures lack the positive character needed to carry through major change. Schwartz and Davis (1981: 31) state that it is rather the nature or orientation of a culture that could either support or oppose strategic change.

### 5.3.6 Is there an ideal culture?

The above discourse does not necessarily suggest that there is an “ideal culture” for all organizations; such a notion does not command wide acceptance. An empirical study done by Gordon (1985: 121) came to the conclusion that there is no single perfect culture, but an appropriate culture for a specific industry, market and organizational circumstances. Rejection for the concept of an ideal or perfect culture for all organizations, also comes from Kotter and Heskett (1992: 28) and Goffee and Jones (1996: 133). Chatman and Jehn (1994: 543) provide additional empirical support for the contingent relationship between industry characteristics and an organization’s culture.

Hofstede, Neuijen, Ohayv, and Sanders (1990: 313-314) also confirm this viewpoint following their empirically developed model. They claim that their approach does not suggest a particular direction that is either good or bad and the position on any one of these dimensions is subject to strategic choice and contingent on the type of organization; their framework stands in contrast to a "one best way" approach put forward in other works on culture (Hofstede, *et al.*, 1990: 313-314)

## 5.4 THE CONTROVERSIES AND ISSUES IN THE STUDY OF CULTURE

### 5.4.1 The main research paradigms

Smircich (1983: 355) distinguished between three different culture research paradigms, each pursuing different research interests and purposes. These paradigms take the following viewpoints of organizational culture: culture as a background factor; culture as an internal organizational variable; or culture as a metaphor for conceptualising or understanding organization.

The first category sees culture as an independent and external variable. In this sense culture is imported into an organization via the attitudes and values of its members (Smircich, 1983: 343). This would, for example, emphasize the impact of national cultures, different ethnic or religious backgrounds, and occupational cultures.

In the second category, cultural researchers focus on the socio-cultural content that has evolved in an organization, and that in some way contributes to organizational effectiveness (Smircich, 1983: 344). Here culture is seen as something an organization "has" (Smircich, 1983: 347). Ashkanasy, Wilderom and Peterson (2000: 7) classify this approach as similar to the *structural realist perspective* of cultural research, and also place this approach in the same category as climate research.

The third viewpoint sees culture as the way the organization expresses itself, thus something the organization "is" (Smircich, 1983: 347). This is referred to as the *social constructionist* approach by Ashkanasy, Wilderom and Peterson (2000: 7), and Denison (1996: 635). In this approach, according to Denison (1996: 635), culture and members do not exist separately from each other and researchers focus on the interactive and reciprocal relationship between these, rather than the impact of one on the other. They are more interested in the evolution of culture in a specific setting than in comparing the effects of culture between organizations. This approach is also related to the *phenomenologist* perspective which is concerned with the emergent and evolving nature of culture, and which denies any interest in the relationship of culture with other purposeful variables of organizational behaviour (Denison & Mishra, 1995: 206).

Denison (1996: 635) contrasts the *social constructionist* perspective with a Lewinian research approach. The Lewinian logic accepts an analytical distinction between the members and the created environment in the organization, which is useful for studying the impacts of one on the other, and for comparative research. This model is the key foundation of climate research. In this sense it is related to the *structural realist* perspective described above.

The *structural realist* view can also be associated with the *functionalist* approach which emphasizes culture as something that should be intentionally designed, and as having systematic relationships with organizational behaviour and effectiveness (Denison & Mishra, 1995: 206).

The main differences in cultural research lie between, on the one side, the social constructionist and phenomenologist viewpoints (what the organization is), and on the other, the structural realist and functional perspectives (what the organization has). These two orientations have given rise to many of the controversies in the field.

Within the first perspective, culture can only be studied qualitatively. However, within the more functionalist research orientations, qualitative and quantitative schools exist. Several functionalists researchers maintain that culture can only be studied qualitatively, whereas later researchers have increasingly adopted quantitative research methods to study culture.

This shift has brought new questions to the fore: asking, for instance, whether the true deeper levels of culture can be probed by quantitative measurement; and also asking whether there is any real difference between quantitative culture research and climate research. Denison (1996: 638) points out that only more recently researchers have adopted a Lewinian approach to the study of culture by measuring it quantitatively on a number of dimensions; consequently they have shifted emphasis toward the intermediate dimensions of culture. Denison (1996: 637) acknowledges that this approach has similarities with the climate research paradigm.

Schein (2000: xxviii) asserts that questionnaire measures of culture address climate variables more than they address culture. Schein (2000: xxviii) also opines that survey methods focus on the artifact level of culture; these only tap manifestations of the underlying assumptions, but do not provide any empirical confirmation of the relationships with the deeper layers of culture.

In the next sections these controversies and debates are examined in more detail.

### 5.4.2 The debates within qualitative approaches to cultural research

Van Maanen (1979a: 520) associates qualitative researchers with an interest in discovering the "unfolding of social processes", and with the need to understand a specific context as crucial to the explanation of observed behaviour. He viewed quantitative researchers, on the other hand, as interested more in the nature of “social structures" as opposed to social processes.

Siehl and Martin (1990: 268) assert that intensive ethnographic and interviewing methods are needed to truly tap the lower level aspects of culture. The technique of ethnography is, according to Van Maanen (1979b: 539), rooted in both anthropology and sociology, and implies the idea of “participant observation” which is an in depth association by the researcher over time. Gregory (1983: 363) uses the term “native-view” as synonymous to participant observation, and says it emphasizes the study of culture from inside the meaning frameworks of the organization members.

Qualitative culture researchers, however, do not exclusively employ ethnographic methods. Schein (1992: 29-30) distinguishes between the ethnographic and clinical approaches to qualitative cultural study. Ethnographic researchers believe in passively observing culture as it is, with minimal interaction and disturbance. The clinical approach, advocated by Schein, focuses on exposing culture and its underlying assumptions by trying to change the system. Whereas ethnography relies solely on passive observation techniques, the clinical approach incorporates ethnographic methods as well as action research and organization development interventions.

Certain qualitative researchers distance themselves from any attempt to study culture from a perspective that concerns the management of organizations. Smircich (1983: 355) asserts that cultural research should solely serve the purpose of addressing the more "nonrational", "expressive" and “subjective, interpretive” content themes of organizational existence.

Gregory (1983: 363) similarly dissociates herself from viewing culture as a rational field of study and criticizes organizational culture scholars who come with "promanagement assumptions” which make it difficult to study the true nature of culture. Gregory (1983: 362) rejects certain popular cultural research viewpoints: the one is the study of the effectiveness of culture for achieving management goals; another one is the interest in cultural integration to achieve compliance with the "normative views" of management; and a further one is the suggestion that the "explicit management philosophy" of an organization is the same as its culture.

Likewise, Siehl and Martin (1990: 271-272) emphasize these sentiments by accusing the functionalist school of cultural research of attempting to strengthen applied management thinking ahead of theory development, and of missing the potential of other approaches to

cultural research. They specifically criticize the implied managerial bias in studying culture as a means of control, and blame the interest in studying management ideologies as an effort to “indoctrinate” and “exploit the productivity” of employees (Siehl & Martin, 1990: 273).

However, these viewpoints that deny any relationship between culture and functional interests in organizations (e.g. from Smircich, Gregory, and Siehl and Martin) may be too narrow, and have selective applicability and support. Denison (1996: 642) criticizes the Siehl and Martin (1990) viewpoints and questions why they single out cultural research whilst other fields of social research are also interested in concepts of productivity and effectiveness. Several scholars that solely acknowledge qualitative methods for cultural research (e.g. Schein) retain a functional interest in organizational studies.

### 5.4.3 The debate between qualitative and quantitative cultural research

Even in the functionalist tradition, the question remains whether quantitative methods do have a place in cultural research, or whether culture assessment can only be achieved through qualitative research techniques.

The depth and invisible nature of culture lies at the root of criticism against the more superficial emphasis of survey type methods. Schein (1992: 185-186) maintains that culture is too wide to measure with any reasonable length questionnaire. This view is also acknowledged by Rousseau (1990: 162) and re-emphasized by Schein (1996a: 239).

Schein (1996b: 11) warns against focusing on observable conduct in isolation because it is often, due to situational circumstances, not consistent with the deeper levels of culture, and asserts that true culture is only observable over a long time. Wilkins (1983: 29) also emphasizes the need for sophistication and time to uncover culture at the assumptions level. Wilkins (1983: 27) refers to the term “cultural audit” for probing the underlying assumptions and beliefs. Sathe (1985: 237) used the term "deciphering" to describe the in-depth process of measuring and interpreting a particular organization's culture.

But other researchers reveal a more positive attitude about the assessment of less hidden levels of culture through survey methods. Cooke and Szumal (1993: 1322) voice their resistance against placing culture exclusively in the domain of qualitative study, and question the implication that culture may be one of the only organizational constructs that cannot be

measured by means of surveys. Scholars, like Cooke and Rousseau (1988: 246), prefer to support a more balanced perspective and the complementary role of different approaches.

Rousseau (1990: 163-164) acknowledges the significance of qualitative research and its interest in the uniqueness of values and beliefs in a particular organization; and concedes to the reservations of qualitative scholars that studying organizations with an *a priori* set of dimensions has limitations. But Rousseau (1990: 166) believes in the need to access different layers of culture, and maintains that systematic patterns of how members perceive they are expected to behave can be assessed by structured instruments.

Rousseau (1990: 165) points out that even qualitative scholars like Martin and Siehl (1983), and Barley (1984), focused on these more overt behavioural patterns and activities in their assessments of culture.

Cooke and Szumal (1993: 1322) ask the pertinent question whether qualitative techniques alone can adequately build a comprehensive theory of organizational culture. This view is not without support in other circles of cultural research. Fore example, Van Maanen (1979b: 548-549) reminds scholars of the “fluid” and “tentative” nature of postulations made by ethnographic study, and emphasizes that these studies often need to restrict and qualify the validity of its theories.

Rousseau (1990: 185) states that, whereas qualitative methods are best to explore the meaning behind the patterns found in organizations, quantitative assessment is more suited for comparing patterns between organizations, and for relating these patterns to issues of organizational strategy and outcomes. Denison and Mishra (1995), for instance, followed an approach of combining qualitative and quantitative techniques in one study.

It appears therefore that quantitative study, despite reservations about its lack of depth, has become a valuable technique for broadening the theories about culture. This view is confirmed by Ashkanasy, Broadfoot and Falkus (2000: 133) whose study made a conclusion that quantitative surveys had become a useful way of studying organizational cultures.

But the question that still needs to be addressed is whether quantitative cultural research is any different from climate research. The fact that quantitative culture surveys focus on the

accessible layers of culture, places it amongst variables associated with climate. In the next section the differences between culture and climate is explored.

### 5.4.4 The culture and climate debate

The first important difference between the concepts of culture and climate is that they originated in two different worlds of study. The culture construct has an anthropological origin, whereas climate is rooted in the field of organizational psychology (Glisson & James, 2002: 769; Reichers & Schneider, 1990: 19).

Original culture researchers were more interested in the evolution of organizations over time, their focus being the deeper levels of meaning and assumptions, and they needed to interact with true “insiders” (Denison, 1996: 621-622). Reichers and Schneider (1990: 20) point out that anthropology was more concerned with description and did not see effectiveness as an important consideration, even in comparative studies.

On the other hand, according to Reichers and Schneider (1990: 20), climate researchers had always been more concerned with understanding why certain organizations were more effective than others. Reichers and Schneider (1990: 20) opine that the research interests of practitioners have been more instrumental in introducing culture as an effectiveness issue.

The differences in description between culture and climate seem rather clear. Whereas culture is associated with the nature of values, beliefs, tacit systems of understanding, and patterned behaviour, climate is associated with feeling and perceptions of members of a group about what they experience in that group.

The word "atmosphere" is often used to convey the meaning of climate (Ouchi & Jaeger, 1978: 307; Schneider, Gunnarson & Niles-Jolly, 1994: 18). Climate addresses the question of how an organization is measuring up to members' expectations about "what it should be like to work" in that organization, thus to an extent measures the fit between the individuals' values and the cultural patterns they are exposed to (Schwartz & Davis, 1981: 33). Schneider, Brief, and Guzzo (1996: 8) also place climate in the context of what employees experience: the routines, practices, procedures and policies, and what interpretations they make from these.

Schneider, *et al*. (1996: 9), contrastingly, associate culture with the beliefs and values that employees perceive is "worshipped" by the organization. According to them, culture is less obvious or explicit, and is seated in the deeper levels of consciousness of people and the organization (Schneider, *et al*., 1996:11). They see climate as more tangible and as related to what people experience in the everyday life of the organization (Schneider, *et al*., 1996:12).

Burke and Litwin (1992: 527) distinguish between the *transformational* and *transactional* levels of organizational dynamics. They associate culture with transformational and strategic processes, those that involve fundamental changes in behaviour. On the other hand, they associate climate conditions with transactional processes, or the everyday exchanges in the organization. Burke and Litwin (1992: 537) add that climate can be classified as a variable associated with typical transactional level variables such as structure, management practices, and organizational systems.

A similar distinction is made by Schwartz and Davis (1981: 33) who found that climate resides in the “transitory” and “tactical” levels and that it is more manageable over the short term, contrary to culture that is strategic and long term.

Although the above descriptions and definitions from the literature provide reasonably clear distinctions between the two constructs, in practical research, and in specific in the operationalization of climate or culture constructs, there has been a great deal of confusion and overlap.

Denison (1996: 629-630) cites a number of researchers who claimed that they were studying culture, but used dimensions which previously had been studied as dimensions of climate. Denison (1996: 646) attributes this confusion largely to the fact that, although the constructs originated in different research traditions, they both address a common interest related to how the “social context” of an organization impacts on its functioning.

Ashkanasy, Wilderom and Peterson (2000: 7), comment on this view of Denison (1996), and agree that culture and climate are not that different; they both cover overlapping themes of organizational behaviour. Schneider, *et al*. (1996: 9) further illustrate this overlap by drawing attention to the interconnectedness of the two phenomena in organizations; values and beliefs of employees (culture related) shape their attitudes about practices and procedure (climate oriented). Schwartz and Davis (1981: 33) make a similar distinction by viewing climate as

expectations about work conditions, but culture as what underlies these expectations. But this distinction also demonstrates a certain degree of proximity between the two.

The research confusion appears to trouble mainly the quantitative studies of culture. Most of the differences in the literature between the two concepts hold for qualitative studies which tap the deeper layers of culture, those that are undoubtedly culture and not climate. But culture survey instruments have to shift their focus to phenomena that are observable to the typical respondent, and therefore address typically transactional variables. These are described as being more climate than culture by, for example, Burke and Litwin (1992: 537).

Nevertheless, there are other important differences between the concepts, and in particular in respect of how to approach them in quantitative research. Few researchers explicitly take notice of these, with the result that many culture studies actually become blends between culture and climate.

Reichers and Schneider (1990: 21), and again Schneider, Bowen, Ehrhart and Holcombe (2000: 26) emphasized the importance for climate studies to reflect a climate "for something," and for conceptualising climate in relation to a specific referent of interest.

The cultural literature does not set the same prerequisite for cultural studies. It generally appears that culture can be measured on its own and independent of any specific referent. The literature emphasizes culture as the nature of what exists and how things are done in an organization. This is objective and stays the same regardless of from whose angle it is viewed. But when a survey asks people whether they feel satisfied with what is happening around them, it addresses climate. This is more subjective and it becomes relevant from whose perspective it is assessed (in line with Reichers & Schneider, 1990: 21; and Schneider, *et al.*, 2000: 26). It can hence be deducted that the same culture in the same organization could be experienced as a positive climate by certain functions and as a negative climate by others.

Glisson and James (2002: 769) expand on this difference by emphasizing culture as a property of the social system or organization, as opposed to climate which is a property of the individual, even when climate is studied as organizational climate.

Glisson and James (2002: 769) make a distinction between psychological climate and organizational climate studies. Whereas psychological climate studies are concerned with the

individual's perception of the work environment and its impact on personal satisfaction, organizational climate assesses the degree to which these personal perceptions are shared at organizational unit level. The latter is merely an aggregate of individual assessments. Both focus on the satisfaction of the individual member, regardless of whether it is assessed merely at the personal level, or whether it is aggregated to organizational level; it therefore remains a property of the individual.

The implication of this view of organizational climate is, according to Glisson and James (2002: 769), the factor structure of the climate construct which reveals a higher order overall satisfaction factor that underlies its multiple dimensions. On the contrary, research on cultural constructs retains a multi-dimensional structure, even at higher orders (Glisson & James, 2002: 770).

These differences have important methodological implications for addressing climate or culture research. Glisson and James (2002: 771) cited Chan's (1998) work to stipulate the *direct consensus model* as an appropriate composition model for the climate construct, and the *referent-shift consensus model* for the culture construct.

Glisson and James (2002: 771) explain the difference between the two approaches in the following ways. The direct consensus approach (typical of climate research) requires individuals to respond in respect of their perceptions about their own work conditions. On the other hand, the referent-shift consensus approach (as in culture assessment) requires individuals to respond in respect of the norms and beliefs, they perceive, exist at the collective level. In other words the culture survey would question respondents to report on how things are done in the organization or unit, rather than asking them to judge the impact thereof on their work conditions.

A number of relevant concluding thoughts can now be put forward. There are distinct differences between culture and climate, especially between qualitative cultural research and quantitative climate research. Most of the confusion between the two concepts arises when researchers want to study culture by using quantitative survey methods. Still, even in quantitative cultural research, there are important differences between how the two research interests should be approached.

Cultural study should focus on the objective opinion of respondents of what typical patterns exist and how things generally happen in the organization. Respondents should not be asked to make subjective evaluations and to relate organizational conditions to their own satisfaction. Then it becomes climate research. Often researchers ignore the need to take note of these differences and end up with research that shows a high resemblance to climate research.

### 5.4.5 Culture as a predictor of performance

Another topic of contest is whether culture could be seen as a predictor of performance. There are several examples of studies in the literature that claim, through empirical research, that there is a significant link between culture and the performance of organizations.

Kotter and Heskett (1992: 11-12) report on a number of studies that have demonstrated the relationship between corporate cultures and economic performance, and also the negative impact of certain cultures on performance. Denison and Mishra (1995: 220) also claim that their research findings support the relationship between culture and effectiveness. In particular their study found that different cultural dimensions were related to different dimensions of effectiveness (Denison & Mishra, 1995: 219). Denison and Mishra (1995: 206) also cite studies by Kanter (1983) and Kravetz (1988) to show that advanced human resource practices could improve aspects of organizational effectiveness.

In a South African study, in which 49 industrial companies listed on the JSE participated, Van der Post, De Coning and Smit (1998: 39) found a significant relationship between financial performance and the company's score on each of a set of fifteen cultural dimensions. A study conducted by O'Reilly, Chatman and Caldwell (1991: 507) revealed a significant relationship between organizational culture and individual level variables such as personal commitment, job satisfaction and intention to leave the organization.

Despite such evidence, there are also scholars that disagree with this hypothesized relationship, even those that question the empirical evidence collected in studies.

Pettigrew (1990: 421) conceptually questions the standpoint that sees culture as an independent variable that could be related directly with concepts of performance or productivity. Pettigrew (1990: 430) feels that culture should not be seen as a direct

explanation of performance, but as a component amongst a more complex set of factors. Siehl and Martin (1990: 274) also voice their concern against treating culture as an intervening variable in the organization-performance relation, and raise several points of criticism against the way researchers study this assumed relationship, for instance:

- by making the assumption that organizations have single organization wide cultures (Siehl & Martin, 1990: 250);
- by not covering sufficiently large samples of firms (through the time consuming nature of ethnographic methods) to permit drawing convincing conclusions about the linkage between culture and performance (Siehl & Martin, 1990: 268); and
- by focusing on top management's espoused cultural themes and not tapping the "enacted" cultural content at lower levels (Siehl & Martin, 1990: 262).

Siehl and Martin (1990: 262) claim that espoused content might be the aspect of culture that is "least likely to be related to financial performance."

The Wilderom, *et al*. (2000) study into previous empirical work on the culture-performance connection exposed many shortcomings in these studies, and could not justify strong support for this relationship.

Wilderom, *et al*. (2000: 194-196) state that many of the earlier works assessing culture as a performance issue, for example the work by Peters and Waterman (1982), used a "semi-scientific" approach; scholars later criticized these studies and exposed their conceptual and scientific weaknesses. Wilderom, *et al*. (2000: 196) found that even later empirical studies, claiming to have studied the relationship between culture and performance, reveal important conceptual and methodological limitations. Several concerns are raised by them: debatable operationalization and construct validity; the tendency to involve small samples of organizations; the targeting of respondents that are not necessarily representative of entire organizational cultures: and ambiguity about the direction of the studied relationship (Wilderom, *et al.*, 2000: 196).

The uncertainty in the direction of the relationship is a common research concern. March and Sutton (1997: 701) draw attention to the likelihood of *retrospective bias* in the use of surveys,

specifically when performance results are well-known to respondents of a survey. In many organizations popular stories about what has caused good or bad performance are circulating. Consequently, when respondents complete these surveys, they may be influenced more by the commonly shared stories than by their own objective evaluations of the survey variables.

Wilderom, *et al*. (2000: 203) also criticize the almost exclusive use of accounting-based performance constructs with their focus on the past, their proneness to accounting manipulation, and their short term orientation. They question why cultural researchers, in the light of these shortcomings, fail to use multi-dimensional and multi-stakeholder models which have become prominent in the organizational effectiveness literature.

Although the hypothesized culture-performance relationship is a theme found mainly in the quantitative schools of cultural research, the subtle interest in this relationship is also found amongst the qualitative functionalist researchers. Many examples exist where qualitative cultural research scholars associate culture with themes that can be linked to concerns of how to make organizations perform better: Schwartz and Davis (1981: 30) express the need to align corporate culture and strategy; Schein (1992: 5) makes a strong link between culture and leadership; Schein (1992: 12) also defines culture in terms of its emphasis on problem-solving, adapting to the external environment, and managing internal integration; Wilkins (1983: 38) considers culture in the light of making organizations more productive and humane; and Schein (1992: 51) associates the development of culture with the concern for survival.

Even Pettigrew (1979: 577), who tends to be critical of seeking a direct relationship, stresses the role played by, besides personal entrepreneurial qualities, the organizational context (i.e. culture) in effective entrepreneurship.

It appears thus that there is a fair degree of acceptance of an association between culture and effectiveness concerns in an organization. The question whether this relationship has been empirically confirmed, or even whether it could be systematically measured, is however far less widely supported, despite research which makes such claims.

Empirical research literature addressing this topic has been shown to carry important weaknesses and only provides speculative evidence. Besides questioning the validity and theoretical conceptualization of many previous cultural constructs, Wilderom, *et al.* (2000:

201, 204) advised researchers to use more complex multi-dimensional effectiveness models, instead of reverting only to those financial measures that are conveniently available.

### 5.4.6 Weaknesses in past quantitative studies of organizational culture

Many of the shortcomings in studying the culture-performance relationship also demonstrate shortcomings in the broader study of culture by means of quantitative survey methods. The general state of theory development in the quantitative domain of cultural study has not reached a satisfactory status.

Rousseau (1990: 154) notes that scholars have shown a consistency in how they understand culture, but they have also shown wide discrepancies in the components of culture assessed. More recently, Detert, Mauriel and Schroeder (2000: 850) assert that both the theoretical conceptual development and empirical evidence on the topic lack convergence. Of specific concern to them is the absence of a concentrated effort to develop a set of dimensions of culture, and of making progress towards dimensions relevant to organizational change and improvement.

Wilderom, *et al.* (2000: 201) similarly found that the body of empirical studies, besides offering a multitude of dimensions, had not achieved a generally accepted model for measuring and comparing culture between organizations.

These authors offer relevant points of criticism against the extant quantitative culture research, and at the same time leave important challenges for improvement to future researchers. The concerns raised here will be addressed in the next chapter prior to the development of the cultural framework and construct for this study.

## 5.5 CHAPTER SUMMARY AND CONCLUSIONS

This chapter has shown that the practice of quantitative study of organizational culture finds itself on difficult theoretical terrain. But the chapter has also shown that is has a rightful place, and that it at least fulfils a complementary role to the more traditional (qualitative) ways of researching culture. Its main contribution lies in exploring the existence and systematic impact of dimensions of culture that are comparable across organizations.

Quantitative cultural research also has serious shortcomings; specifically it cannot tap the richness and depth of organizational culture. In its approach it is also very close to organizational climate research, so close that prominent authors regard it as a construct that is overlapping with climate. But the chapter has also pointed out that true cultural research motives are distinctly different from climate research, even in a quantitative survey context.

The culture research literature and its prominent debates have also suggested that quantitative cultural research and its corresponding culture construct can hardly claim to be a comprehensive model of culture. At best it can assert that it addresses a purposefully defined construct of organizational culture, specifically for large scale survey research and focusing only on the comparative dimensions of culture.

# CHAPTER 6

## THE DIMENSIONS OF ORGANIZATIONAL CULTURE

### 6.1 INTRODUCTION

The purpose of this chapter is to build the framework of dimensions of organizational culture that will define the culture construct for this study. The controversial nature of the study field necessitates that a number of theoretical concerns are taken into consideration before proceeding with developing the culture construct.

For example, Schein (1992: 185-186) asserts that culture is too wide to measure with any reasonable length questionnaire. He backs his view by highlighting specific limitations, such as the relevance of variables chosen to measure culture, and the inability of questionnaires to tap the deep and subtle assumption levels of culture. However, a partially contradicting viewpoint is held by Ashkanasy, Broadfoot and Falkus (2000: 132) who opine that survey assessment of culture is possible, but that it is limited to the more obvious and accessible levels of culture.

The first part of the chapter therefore examines these and other relevant theoretical arguments. The purpose of this exercise is to find a rationale that can be defended as a sound theoretical foundation from where to develop a construct of culture that is suitable for this study.

The latter part of this chapter then proceeds from this foundation to seek and define the dimensions of the construct.

### 6.2 THEORETICAL CONSIDERATIONS TOWARD DEVELOPING THE CONSTRUCT

#### 6.2.1 The types of quantitative cultural studies

Ashkanasy, Broadfoot and Falkus (2000: 135) distinguish between two different survey approaches that are followed in quantitative studies of organizational culture, namely *typing surveys* and *profiling surveys*.

Typing surveys attempt to place organizations into a few discreet mutually exclusive orientations or typologies (see Ashkanasy, Broadfoot & Falkus, 2000: 134). Examples of this approach are the Competing Values Framework (Cameron & Quinn, 1999) and the Solidarity-Sociability model of Goffee and Jones (1996).

Schein (1997: 174) criticizes the typological approach as an oversimplification of a too complex phenomenon. His concern is that typological models typically avoid the interrelationships between its broad dimensions and the uniqueness of character these interrelationships may bring. He warns that such limited techniques will lead to a superficial understanding of culture and can convince managers to attempt change in a way that cannot accomplish real cultural change.

Ashkanasy, Broadfoot and Falkus (2000: 134) are concerned about the mutually exclusive orientation of the typological models, and their inability to discriminate between the finer unique differences of organizations that are classified as similar. They believe that many organizations do not exactly comply with these types or are mixtures of these types.

The other approach, namely *profiling surveys*, attempts to profile organizations on several dimensions, which are not necessarily mutually exclusive (Ashkanasy, Broadfoot & Falkus, 2000: 134). They further distinguish between three different approaches to profiling surveys. *Effectiveness surveys* are interested in assessing organizational values and behaviour that can be related to better levels of effectiveness and performance. *Descriptive surveys* measure values, but do not make an evaluation of effectiveness. The last type, *fit profiles* are used to study the congruence between individuals and the organization.

This study propose to use the *profiling survey*, and in particular the *effectiveness survey* approach as basis. The purpose of this study is to relate culture to project management effectiveness. The multiple influences of organizational behaviour as anticipated by the project management literature (as will be shown in Chapter 7) suggest the importance of taking the route of a multi-dimensional construct of organizational culture. O'Reilly, *et al*. (1991: 509) use the term “fine-grained” analysis for this type of approach which assesses a relatively large number of variables.

The *typing survey* approach lacks this finer grain emphasis which is considered necessary for this particular study.

### 6.2.2 The issue of cultural dimensions for survey assessment

The practice of describing culture in terms of a set of dimensions belongs largely to the functionalist perspective of cultural research. According to Denison (1996: 620) this approach has only more recently entered the domain of cultural studies from the climate research tradition.

So far, a theoretical conceptualization of appropriate dimensions by which to study culture has not received sufficient attention in the literature. One of the few exceptions is the work by Schein (1992) who proposed a broad framework of cultural dimensions based on the important assumptions about organizational management facing the leaders of organizations.

Besides the work of Schein (1992), most of the conceptual work in deriving dimensions for empirical research has merely involved the selection of popular dimensions from past studies.

An example is the Van der Post, *et al.* (1997: 149) study which took 114 dimensions from previously published studies, and through two rounds of expert panel collaboration, consolidated these into fifteen conceptually unique dimensions. Through empirical testing this framework led to a 94 item questionnaire which loaded on all fifteen factors and showed high internal consistencies with Cronbach alphas of between 0.78 and 0.93 (Van der Post, *et al.*, 1997: 151-153).

Ashkanasy, Broadfoot and Falkus (2000: 141) developed their Organizational Culture Profile (OCP) framework also by analysing previous (eighteen) surveys. They initially derived fifteen underlying themes, but through further evaluation reduced these to a ten dimensional framework.

Another example is Delobbe, Haccoun, and Vandenberghe (2002: 10-11) who developed their ECO culture questionnaire by starting with a list of 355 items drawn from a number of previous questionnaires. Through expert panel evaluation they consolidated these into 266 items. This empirically rendered a nine factor structure supported by 229 items. Through further refinement and empirical testing they developed their ECO questionnaire which yielded a five factor model of culture: recognition-supportiveness; commitment-solidarity; innovation-productivity; control; and continuous learning (Delobbe, *et al.*, 2002: 12-13).

An important observation, when examining these past empirical models, is that there is some overlap in the dimensions studied, but there has not been a satisfactory level of convergence. Delobbe, *et al*. (2002: 6-7) report that mainly four dimensions seem to be the most consistent themes appearing in past culture surveys: an orientation toward people; an orientation toward innovation, risk taking, and openness to change; an emphasis on control, formalization, rules, hierarchy, and bureaucracy; and, finally, a results or outcome orientation.

Their own empirical work which built upon these past surveys, however, led to five different factors (see earlier paragraph). To further illustrate this lack of convergence, the fifteen dimension scale of Van der Post, *et al.* (1997) was later used in an Australian study, and extracted only eight factors with loadings substantially different from the original South African study (Erwee, Lynch, Millet, Smith, Roodt, 2001: 10). Similarly, Xenikou and Furnham (1996: 367-369) combined and empirically tested four previous questionnaire measures of culture and through factor analysis found only five meaningful factors. These factors showed little overlap with any of the other frameworks.

The approach followed by the abovementioned, and other previous cultural researchers, has not resulted in a satisfactory definition of the culture construct and an appropriate set of dimensions for survey assessment. As reported in an earlier chapter several sources in the literature confirm this inability to produce a widely supported set of dimensions (e.g. Rousseau, 1990: 154; Detert, *et al*., 2000: 850; Wilderom, *et al.*, 2000: 201).

Detert, *et al*. (2000: 850) specifically see the lack of conceptual development, to support empirical work on cultural dimensions, as an important shortcoming. Chatman and Jehn (1994: 547) recognize this weakness in their own empirical work, by admitting their inability to theoretically explain why dimensions of culture relate to industry characteristics. Ashkanasy, Broadfoot and Falkus (2000: 144) also criticize this trend and stress the need to start from a theoretical foundation and not to merely select the consistent themes from previous instruments for the design of questionnaire measures of culture.

Another important observation, when studying past empirical survey models, is that several of the dimensions that had been considered for the culture construct originated as dimensions in climate studies. A similar observation was also made by, for example, Denison (1996: 629-

630). This further demonstrates a lack of theoretical input to the development of the culture construct, and to ensuring that the construct has a distinct cultural emphasis.

Wilderom, *et al.* (2000: 201) observe that many of the past dimensions have been based on different levels and definitions of culture. They add that some critics may even suggest that none of these measure culture, but dimensions of organizational functioning and structuring, or even of organizational climate.

Detert, *et al.* (2000: 852) made a more dedicated theoretical effort to develop a set of dimensions as a basis for describing a Total Quality Management (TQM) culture. They used 25 previous multidimensional frameworks of culture, but further consulted Schein's (1992) conceptual view of cultural dimensions, together with commonly accepted TQM principles, to refine an eight dimensional framework of organizational culture. No empirical evidence is yet available to support the internal structure and dimensionality of this construct.

The review of culture survey studies and of criticism in the literature illustrates some important principles which need to be considered.

Simply using the dimensions forthcoming from past studies has not proved to be an adequate technique. This tradition has so far not resulted in a sufficient level of convergence towards a generalizable model of the culture construct.

The central problem focuses on not putting enough theoretical conceptual effort into the definition of the culture construct. This weakness manifests in, for example, a lack of clearly distinguishing between dimensions of climate and culture; they cannot merely be used interchangeably in studies without giving any clarity as to why they fulfil the same function.

This weakness expands to the need to pay attention to the level of culture assessed by the construct. Climate, for instance, is viewed by certain scholars as a superficial manifestation of culture, but not a true layer of culture. The culture construct should address organizational phenomena that command acceptance as layers of culture. It is also important that all the dimensions selected focus on a coherent perspective of culture, and that they do not simply represent a random collection of variables tapping different levels of culture and organizational behaviour.

The other component of the problem is the lack of theoretical analysis and reasoning going into the choice of dimensions. There should be a theoretical expectation that the chosen dimension will be able to explain the relationships investigated by the study.

### 6.2.3 The issue of appropriate levels of culture for survey assessment

One of the pertinent debates in the culture literature has developed around the depth of culture and the inability of survey assessments to tap these deeper layers of culture. Qualitative researchers claim that quantitative researchers measure only manifestations of culture, or climate variables, but not culture as such. Other researchers maintain that the more superficial layers are still part of culture and that studying these is a useful and complementary approach to the deeper qualitative methods. At this point it is thus necessary to review how the different levels of culture have been defined and studied, and to what extent they command acceptance as true layers of culture.

For this purpose it is useful to revisit the model of Schein (1992: 17) who defines culture as comprising three layers: the *artefacts* (the most superficial level found in the visible organizational structures and processes; the *espoused values* (found in strategies, goals, and philosophies of the organization); and the *basic underlying assumptions* (the hidden, tacitly accepted beliefs ultimately guiding the organization).

Kotter and Heskett (1992: 4), like several other scholars noted in the previous chapter, make only a distinction between two layers of culture: the deeper value systems which are largely invisible, stable and persistent, and hard to change; and the styles and norms of behaviour which are more visible and not so difficult to change.

Sackmann (1992: 141-142) classified culture in terms of four levels of cultural knowledge accumulating over time: dictionary knowledge (the semantics; the “what”); directory knowledge (the “how to” of standard routines); recipe knowledge (the “how to” or the “shoulds” of more complex actions like problem-solving); and axiomatic knowledge (the “why” things happen or are). Dictionary and directory knowledge are superficial layers of culture, like artefacts. Recipe knowledge is more intermediate and resembles norms and values. Axiomatic knowledge is the deepest level and closely resembles basic assumptions.

Hofstede (1999: 38-39) asserts that organizational culture rests on the notion of shared practices, rather than the concept of shared values which has been made popular by Peters and Waterman in their 1982 book. Hofstede opines that peoples' values differ according to other factors such as nationality, religion and gender, but is shaped into an organizational culture through how they share ways of doing. Hofstede, *et al*. (1990: 311) used both shared practices and shared values as the basis of their survey. The research showed shared perceptions of practices to be the core of the organizational culture, and value dimensions to be correlated with demographic similarities (nationality, age, education) across organizations more than with belonging to the same organization. They also point out that there are discrepancies between the values of the founders and the values of the employees, and that culture becomes manifest in the sharing of practices (Hofstede, *et al.*, 1990: 311).

Schein (1996b: 11) points out that the outer layer of culture (artefact level), which is reflected in the day-to-day behaviour, is often a compromise between the deeper assumptions, the espoused values, and the situational dynamics at a point in time. This gives rise to his argument that the true culture cannot be measured at these outer levels. His argument casts doubt on the practices level (e.g. Hofstede, *et al.*, 1990) to represent, in isolation, a convincing layer of cultural study.

Trice and Beyer (1984: 664) propose the study of rites and ceremonials as a useful way to discover more complex cultural meanings. They opine that well-established rites and ceremonials would probably be indicative of a strong culture, and that the type of rites and ceremonials would be expressions that reinforce the ideologies of powerful leaders in the organization (Trice & Beyer, 1984: 665-666).

However, artefact elements such as rites and ceremonials have very specific connotations, and can be considered mainly for analysing a particular organization, and not for comparative research. Denison (1996: 638) cites a study by Trompenaars (1993) to illustrate how similar symbols or artefacts can have very different meanings in different social or cultural settings.

Schwartz and Davis (1981: 30) maintain that organizational culture is present in "trivia" such as dress code, jargon and styles, but is also reflected in functional contexts such as how companies make decisions, how superior-subordinate relationships manifest, or how people are selected for key positions.

It is therefore useful to accentuate this further distinction in the concept of culture, besides its different layers. On the one hand, there are components that make only sense in a specific context and against a certain company history. Rites, ceremonials, dress codes and similar artifacts fall in this category and are not anticipated to influence a population of organizations in a systematic way. On the other hand, there are cultural components that reflect more standard and commonly known management philosophies and which could have similar influences in different organizations.

Zammuto, Gifford and Goodman (2000: 278), for instance, highlight this distinction; they admit that certain elements of culture are unique to an organization, but recognize that there are also commonly shared patterns of managerial ideologies functioning in the broader system of organizations. They claim that these (ideologies) offer useful opportunities for comparative studies in culture.

Beyer (1981: 197) notes that ideology is a concept that strongly influences the choice between competing strategies in organization design. Leaders are therefore influenced by their ideological orientations in designing their organizations. Leaders also play a key role in the formation of cultures, therefore the link between ideology and culture, as made by Zammuto, *et al.* (2000), is a reasonable deduction. Before the connection between ideology and organizational culture is further explored, the role of leadership in culture is first addressed in the next section.

### 6.2.4 Culture and leadership

Many scholars acknowledge a strong connection between culture and an organization's leadership or management. Schein (1992: 52) suggests that culture is formed through a group's shared experiences, but also through the activities of leadership. Bass and Avolio (1993: 113) maintain that leadership in an organization teaches and reinforces the norms and behavioural qualities which become internalized as culture. Kets de Vries and Miller (1986: 267) link the formation of a culture to the top manager's personality, and cite a number of previous studies providing supportive evidence. Wilkins (1983: 25) even uses the term "management philosophy" as equivalent to "company culture."

Martin and Siehl (1983: 63) found in a case analysis that several managerial activities might have had a visible impact on the development of a culture. Wilkins (1983: 35) states that top

management exerts strong influence on the assumptions in organization through their own behaviour and the systems they create. Thompson and Luthans (1990: 330) similarly contend that culture is transmitted through the actions of management, for example, how employees are treated, and tolerance and reward for certain behaviour.

Other examples in the literature exist. Schwartz and Davis (1981: 33) use McGregor's Theory X and Theory Y as two different managerial viewpoints which will result in two different organizational cultures. Lorsch (1986: 95) defines culture as the shared beliefs held by top managers about how to manage themselves and the organization, and how to conduct their business. Goffee and Jones (1996: 148) link culture to the choices facing senior management about how they believe their organization should be successful. Schneider, *et al*. (1996: 11) assert that the foundation of culture is laid by top management statements such as: "we believe in"; "we value"; and "we stand for."

Although leadership is seen as playing a substantial role in forming a culture, scholars recognize that organizations respond in ways that also contribute to the culture. Schein (1992: 93) stresses the dominant role of leadership in determining the values that groups will adopt, but acknowledges the sociological viewpoint that culture emerges through the interactions between members. Thompson and Luthans (1990: 339) state that management is not the only reinforcing agent, other factors such as policies, practices, physical surroundings, work flow, all contribute to support or undermine the articulated culture. They also feel that the nature of work and of informal groups can reinforce or distort organizational messages.

Pettigrew (1979: 576-577) accentuates this point by drawing attention to the reciprocal relationship between leadership and culture; leaders create culture but eventually the actions of leaders will be constrained by the culture formed.

Jermier, Slocum, Fry and Gaines (1991) found, in a particular case study, the existence of several subcultures that showed little resemblance to the facade of a uniform head office culture. This is in line with other previously cited work on subcultures (see section 5.3.3).

Cooke and Szumal (2000: 152) report that the development of the Organizational Culture Inventory (OCI) has focused on the concept of an operating culture which is reflected by the underlying assumptions and values that are shared by members and not management. The

philosophy behind this instrument suggests that values, missions, goal and strategies at top levels only marginally influence the operating cultures of organizations.

Beyer (1981: 187) reflects a more balanced perspective by saying that people in organizations behave in terms of their own ideologies and values, but also in adherence to the ideologies and values of powerful superiors.

The foregoing analysis has demonstrated that culture is linked to organizational leadership, both to the visible actions and structures created by leaders, and to the deeper belief systems that have governed these choices of actions and structures. Related to these belief systems are concepts such as basic assumptions, management philosophies, ideologies, and management values.

What also emerges is that leadership may play a stronger role in the formation of culture. But as time progresses, cultures (and subcultures) will also be influenced by values and beliefs of members and the practical experience of what works and what not, and may gather an own momentum, gradually becoming less influenced by leadership.

### 6.2.5 More about ideology and beliefs as a cultural concept

The term *managerial ideology* is used by Beyer (1981: 191) to describe the system of shared beliefs about theories, methods, techniques and problems of management. Zammuto, *et al.* (2000: 263) define managerial ideologies as the "broad philosophies of management" and links this to organizational culture by citing a quote from Trice and Beyer (1993): "The actual content or substance of a culture resides in its ideologies."

Beyer (1981: 166) further defines ideologies as "coherent sets of beliefs” and emphasizes the cause-and-effect implication of the concept of ideology. According to her, values and ideologies are closely related, but where values only indicate preferences for certain actions or outcomes, ideologies specify the course of action that would more likely bring about or cause a desired outcome (Beyer, 1981: 166-167). Schein (1992: 89) similarly says that ideology could be seen as a “set of overarching values".

Beliefs and ideologies are viewed as strong and influential thought systems in organizations and explicitly linked to culture as emphasized in the following quotations:

> The strategic driving force is a manifestation of the company leader's belief about how to succeed in a particular industry or line of business. Beliefs are part and parcel to corporate culture, and the leadership is where they (strategy and culture) come together"
>
> Burke & Litwin, 1992: 536

> An ideology is a set of beliefs about the social world and how it operates, containing statements about the rightness of certain social arrangements and what action would be undertaken in the light of those statements.
>
> Wilson (1973) cited in Pettigrew, 1979: 575

> Group norms and ideology are influential in affecting the behaviour of members not only because of conformity and affiliation needs but also because the ideology of the system gears into the very functions in which individuals are engaged and invests them with a significance and meaning they would not otherwise possess.
>
> Katz and Kahn (1978) cited in Tichy, 1981: 234

Beliefs and ideology lie in the deeper levels of culture. Schein's (1992) model does not make provision for a specific layer of ideology, but it appears from evidence that it lies between the *basic assumptions* and the *espoused values* layers, perhaps closer to the *basic assumptions* level. Schein (1992: 90) calls ideology the "conscious component" of the deeper assumptions; and also states that it can be seen as directly linked to some of the deeper assumptions in an organization's culture (Schein, 1992: 95). Lorsch (1986: 105), for example, describes the cultural audit as discovering the "strategic beliefs" that top managers tacitly follow in running the organization; the audit must involve the major decision-makers, and find the consistent patterns of how these beliefs interact and how they find their way into the practices in the organization.

Harrison (1972: 119) used the term *organizational ideologies* to explain several common phenomena that give an organization a specific character:

- the goals and values by which to direct and measure organizational performance;
- the relationships between member and organization;
- the way behaviour should be controlled;
- the member qualities that should be valued or discouraged;

- how members should treat one another, covering concepts such as honesty, competitiveness *versus* collaboration, and closeness *versus* distance; and
- appropriate ways of dealing with the external environment.

The foregoing evidence from the literature supports the point made by Zammuto, *et al*. (2000: 278) that the concept of ideology is an appropriate focus area for comparative culture studies. A number of arguments can be raised to support this notion.

Firstly, ideology is explicitly linked to culture by acknowledged culture authors. Secondly, ideology is also linked to the deeper basic assumptions level of culture, which implies that it cannot be merely judged as a superficial manifestation of culture.

Thirdly, there is a public domain of ideological concepts formed by an extensive body of management knowledge that influence organizational leaders to run their organizations in particular ways. These ideologies share common and systematic thought patterns and are amenable to comparative studies.

Fourthly, ideologies influence the design of structures, systems, and behavioural practices, as well as the nature of relationships; the stronger these ideologies manifest, the stronger particular patterns will be visible and sensed by members. This strengthens the argument that survey instruments can measure this perspective of culture, as long as they tap those visible elements of organizational behaviour that give a strong indication of the underlying ideologies.

### 6.2.6 Culture as patterned and stable behaviour

One of the other distinguishing perspectives of culture is the fact that it is shared and expressed as patterns of behaviour that are persistent. Several authors confirm this characteristic of culture.

Wilkins (1983: 26) refers to culture as “people’s customary behaviour”. Schein (1992: 10), as also mentioned earlier, emphasizes that culture is typically elements of organizational behaviour that have become patterned and stable over time.

Burke and Litwin (1992: 532) place emphasis on the enduring way that culture guides behaviour in the organization. In a similar way, Wilkins (1983: 35) states that culture will be influenced by top management assumptions and the systems they create, especially if these are consistent and persistent. Cooke and Szumal (1993: 1322) add that most definitions of culture imply the concept of patterns, and the sharing of these patterns by members.

The implication of these viewpoints is that culture is more than only a content concept. It is not the content of a construct alone that will confirm that it measures culture, but the fact that it probes content that has become customary, patterned, shared and persistent behaviour in an organization.

The further implication is that culture cannot be simply a concept associated with a specific origin. Culture does not necessarily have to be the assumptions, values or ideologies of leaders or founders, to qualify as culture. It has been shown earlier that influential belief systems could have originated in other diverse sources in the organization. When these have become manifest in systematic patterns and customary ways of doing things, they equally become part of culture.

The above viewpoints therefore lend further support to survey methods as a reasonable approach to the measure of culture. People are likely to be fair informants of behaviour patterns that have become customary, and of practices that are persistent and generally accepted as the way things should be done.

## 6.3 DEFINING THE RATIONALE FOR THE CULTURE CONSTRUCT

### 6.3.1 Focus of the construct

At this point it becomes possible to formalize a broad philosophy of the construct. The culture construct for this study is defined as a system of top management and organizational, ideologies, beliefs, and values that captures the following characteristics:

- it reflects strategic choices about how to socially arrange the organization to achieve its goals (and for the purpose of this study, specifically its project management practices);
- it results in patterned and consistent ways of leading and managing the organization;

- it impacts on the creation of structures, strategies, systems, decision-making policies, standardized behaviour and practices; and
- it comprises philosophies that are common to and comparable between most organizations.

By placing the focus point on ideologies and beliefs, the construct accentuates aspects of an organization that leaders, and other influential powers, not only value, but actively believe in to be the best ways for the effective functioning of the organization, and, as such, ensure that these beliefs strongly influence how the organization is run.

It is also important to explain what the proposed construct does not claim to be. It cannot be regarded as a comprehensive construct of organizational culture, because it ignores many important categories which should form an integral part of a comprehensive view of an organization's culture. It accepts the opinion of Schein (1992: 185-186) stating that culture is too wide to measure with any reasonable length questionnaire, and is therefore limited to the more obvious and observable levels of a culture.

Although some of the previous arguments show the close link between ideology and the deeper assumptions of management, this construct does not assert to fully tap these assumptions. Many of these deeper assumptions may have been uniquely formed by what has worked in the past for a particular organization, and is company specific; not all assumptions or beliefs can be traced to generally practiced management philosophies.

This construct also ignores other acknowledged elements of culture. Several examples can be listed: the nature of rites, stories, and other forms of symbolism; the subtle forms of culture found in the values and beliefs about life and work of members; the phenomena of departmental or other sub-cultures; and the cultural impacts of different occupational backgrounds of members.

All these components are ingredients of a more comprehensive definition of organizational culture. If one needs to assess the culture of a specific organization, this broader definition should be taken into account. However, such a full definition of culture is not conducive to studying how culture may affect organizational functioning compared from one organization to the next.

It is therefore re-emphasized that the proposed construct takes a certain and delineated perspective of organizational culture, specifically to conform to the purpose of this class of research.

### 6.3.2 Motivating the focus of the construct

The argument that survey methods cannot tap the deeper assumptions in the minds of managers, or that they cannot confirm the relationship between visible manifestations and the underlying management assumptions (Schein, 1992: 185-186; Schein, 2000: xxviii), is not regarded as a major weakness in this definition of culture. It has been shown that the assumptions and beliefs at top management level do not exclusively represent the full ideological influence of a culture. These may come from other sources in the organization; and even the culture itself.

It is also apparent that the literature has not succeeded in defining a universal construct of organizational culture nor has any specific study method stood out as the one best way of researching organizational culture. It rather appears that culture is, similar to the organizational effectiveness construct, contingent on the research purpose, and that different constructs of culture will serve different aims.

If culture needs to be researched to understand a particular organization, how the culture has formed, what meaning is created by it symbols, and what deeper connections exist between the culture, the organization, and the members, then ethnographic methods without any *a priori* constructs are probably the most recommended approach.

If culture needs to be assessed with the view of organizational transformation, the clinical case study (interventionist) approach seems more obvious. The primary aim here is to get behind the hidden driving forces that maintain the existing culture and that could resist change. This approach will focus more on the true and deep layers of management assumptions, but also on the subtle organization wide belief and value systems that may exert a strong influence on the way the organization functions.

If the need is to discover whether there are systematic ways in which typical and commonly found cultural patterns impact on similar functions in organizations, large sample survey methods, with a well defined *a priori* construct of culture, becomes the logical option.

To attempt to define organizational culture as belonging only to a specific viewpoint, or worse, to define it in a way that exclusively complies with a certain research preference, seems problematic. It is more reasonable to accept different viewpoints and different study methods as long as researchers anchor themselves in what can be considered a subset of a coherent broader picture, and attempt to add knowledge that will bring further understanding and convergence.

The construct of culture proposed for this study falls in the third category; thus it is a particular construct of organizational culture, aimed at studying culture in a comparative and quantitative way for addressing a large sample of organizations. For the purposes of this study the construct needs to compare the influence of culture across many organizations. Yet, a reasonable attempt is made to stay within recognized domains and definitions of culture.

### 6.3.3 The relationship of the proposed culture construct with the climate construct

This construct is not similar to organizational climate. Climate does not lie at the ideological and strategic level. Climate could well investigate how people evaluate their own satisfaction in respect of the manifest practices and structures resulting from particular ideologies. The proposed culture construct, however, would solicit respondents to objectively report what they observe is happening in the organization. Thus, whereas climate will address personal assessments about how behavioural patterns and practices impact on their own effectiveness, the culture construct will address only the nature of these patterns and practices at the collective level (see Glisson & James, 2002: 772).

### 6.3.4 Further guidelines for developing the construct

The literature provides certain other guidelines to consider when designing culture or collective level constructs for survey research.

Rousseau (1990: 170-171) proposes the following guidelines:

- dimensions should be grounded in previous research and theory;
- there should be support for the assumption that the dimensions are generalizable across organizational settings; and

- there should be a research focus and a certain priority rationale that will influence the selection of some dimensions and the omission of others.

Glick (1985: 606) also reminds researchers to be parsimonious and limit constructs to dimensions that are judged to have an impact on the phenomenon studied. Gordon (1991: 397) applies this principle by using a limited construct of culture which he considers to be adequate for the purpose of his study.

Ashkanasy, Broadfoot and Falkus (2000: 144) stress the importance of selecting dimensions that are clearly distinguishable and that are not overlapping concepts, and also confirm the importance of a theoretical foundation ahead of merely using the consistent themes of previous surveys.

## 6.4 DERIVING DIMENSIONS FROM LITERATURE

### 6.4.1 Approach followed

The process of deriving an appropriate set of dimensions for the culture construct, in the light of the criticism in the literature, demands careful attention. A three step approach has been followed to overcome the typical shortcomings reported in the literature.

Firstly, those dimensions of culture that have been found common to many previous cultural measurement frameworks have been used to form a core set of dimensions for consideration.

Secondly, these dimensions, or themes, have been subjected to theoretical scrutiny and evaluation. This process analysed whether each theme has support from the broader base of cultural literature, or whether it has sufficient support as an important dimension of organizational behaviour. This process consulted further sources of literature to pay attention to a more comprehensive definition of each dimension, and the typical variables that can be associated with each dimension. This process also addressed the direction of each dimension (the meaning of low and high scores).

Lastly, in an iterative fashion this process considered whether the dominant cultural concerns extracted from the project management literature (see Chapter 7) could be adequately addressed by the selected set of dimensions.

This approach led to the postulation of twelve dimensions. These dimensions have support as generic dimensions of organizational culture, and also provide a reasonable classification scheme for the organizational variables extracted from the project management literature. This means that the project management literature's view of organizational concerns can be associated with the postulated dimensions.

### 6.4.2 Material considered to extract the core dimensions

Many of the more recent empirical studies in culture synthesized sets of dimensions by using the dimensions from past studies and by reducing these through expert panels and other intellectual processes to more concise sets of dimensions. The approach followed by this study was to build on their work and use their already consolidated sets of dimensions. Sources that reported a relatively wide literature base as input to their frameworks were considered as appropriate for this process. The following sources were chosen.

a) Van der Post, *et al.* (1997) started with 114 dimensions from previous studies and consolidated these into a fifteen dimensional framework through expert panel consultation.

b) The Organizational Culture Profile (OCP) developed by Ashkanasy, Broadfoot and Falkus (2000: 141) was based on eighteen previous surveys, from which they derived fifteen consistent themes and eventually reduced these to a ten dimensional framework.

c) Delobbe, *et al*. (2002: 5-6) studied several existing questionnaire frameworks (the exact number is not given). They subsequently compiled a survey comprising 266 items based on an analysis of dimensions found in these sources and through item and factor analysis techniques extracted a nine-factor solution (Delobbe, *et al*., 2002: 10-11).

d) The Xenikou and Furnham (1996: 354-355) study used four major questionnaire measures of organizational culture and administered their questions in a randomized order to a sample of organizations. Through factor analysis they extracted five key dimensions (a sixth factor was considered to be merely artefacts and not relevant to their proposed model (Xenikou and Furnham, 1996: 367-368).

e) The Detert, *et al.* (2000) study also used an intensive process to review dimensions from previous studies and combined that with theoretical work by Schein (1992) to come up

with a proposed set of eight dimensions which they considered appropriate to define a culture for Total Quality Management (TQM) in organizations (see Detert, *et al.*, 2000: 852-858).

f) The study by Jaworski and Kohli (1993) which falls outside the domain of cultural studies was also considered to be a useful basis for comparison. First, its dimensions had not been considered for incorporation into cultural frameworks, but still, it addressed a very similar concept and set of dimensions. The essential concept of the research was to evaluate organizational antecedents to a marketing orientation. These antecedents represented dimensions of top management beliefs and structural arrangements in an organization (see Jaworski and Kohli, 1993: 54-57), and have much in common with the concept of culture defined for this research project.

A summary of the dimensions that were addressed by these studies is shown in Table 6.1.

**Table 6.1: Cultural dimensions from the selected source of literature**

| No | Vd Post, *et al.* (1997) | Ashkanasy, Broadfoot & Falkus (2000) | Xenikou & Furnham (1996) | Delobbe, *at al*. (2002) | Detert, *et al*. (2000) | Jaworski & Kohli (1993) |
|---|---|---|---|---|---|---|
| 1 | Conflict resolution | Leadership | The human factor in a bureaucratic culture | Achievement / productivity | Basis of truth and rationality | Centralization |
| 2 | Culture Management | Environment | Task-oriented organizational growth | Bureaucratic orientation | Control, coordination and responsibility | Conflict level |
| 3 | Customer orientation | Innovation | Positive social relations in the work place | Commitment / involvement | Isolation *versus* collaboration | Departmentalization |
| 4 | Disposition to change | Planning | Openness to change in a cooperative culture | Competence and training | Motivation | Formalization |
| 5 | Employee participation | Humanistic workplace | | Cooperation / solidarity | Nature of time and time horizon | Interdepartmental connectedness |
| 6 | Goal clarity | Socialization on entry | | Innovation / change | Orientation and focus - external or internal | Reward systems |
| 7 | HR orientation | Structure | | Stability / planning | Orientation to work, task and co-workers | Risk aversion |
| 8 | Identification with organization | Communication | | Supportiveness / recognition | Stability *versus* change and innovation | Top management emphasis (involvement) |
| 9 | Locus of authority | Development of the individual | | Teamwork | | |
| 10 | Management style | Job performance | | | | |
| 11 | Organization focus | | | | | |
| 12 | Organization integration | | | | | |
| 13 | Performance orientation | | | | | |
| 14 | Reward orientation | | | | | |
| 15 | Task structure | | | | | |

### 6.4.3 The most consistent dimensions

The dimensions extracted from this analysis are shown in Table 6.2. This layout indicates to what extent each dimension was supported by the sources consulted.

The High category means they were studied by the majority of the studies considered.

The Medium category indicates a reasonable support (at least two).

The Low category was used for where it had support from one of the Van der Post, *et al*. (1997) or the Ashkanasy, Broadfoot and Falkus (2000) studies. It was argued that both these had been constructed from dimensions representative of many past instruments, and both retained a finer-grained set of distinct dimensions. Thus, support from one of these two was considered representative of a strong previous support in the literature.

The last category was reserved for themes that were only proposed by the Detert, *et al.* (2000) theoretical proposition.

All nineteen items were judged to be reasonable for consideration as dimensions of the construct. Strong support as a cultural theme was not considered a sufficient or a necessary condition for selection, but as one of the criteria for consideration. All the dimensions in the list were subjected to the evaluation process described earlier. Two primary questions had to be asked by this process. Firstly, is the dimension under review a useful and theoretically supported dimension of organizational culture in general? Secondly, is the dimension useful for the purpose of this study, namely to find a project management supportive organizational culture?

**Table 6.2: Analysis of dimensions as covered by the selected literature**

| No | Dimension | Support |
|---|---|---|
| 1 | An emphasis on flexibility, change and innovativeness | High |
| 2 | A emphasis toward valuing and caring for people | High |
| 3 | An emphasis on actively pursuing outcomes, goals, and high performance | High |
| 4 | An emphasis on formalization, structure, control, and bureaucracy | High |
| 5 | An emphasis on management involvement and employee participation | High |
| 6 | An emphasis on coordinating and integrating subunit activity | High |
| 7 | The beliefs about where decisions and power should be concentrated | High |
| 8 | The value placed on the customer | Medium |
| 9 | An emphasis on organizational direction and focus | Medium |
| 10 | An emphasis on competency and training | Medium |
| 11 | An emphasis on effective communication and openness | Medium |
| 12 | An emphasis on conflict acceptance and resolution | Low |
| 13 | An emphasis on actively managing culture | Low |
| 14 | An emphasis on member identification with organization | Low |
| 15 | An emphasis on socializing new staff on entry | Low |
| 16 | An emphasis on reward for performance | Low |
| 17 | Nature of time and time horizon in the organization | Only Detert, *et al*. (2000) |
| 18 | An emphasis on motivation | Only Detert, *et al*. (2000) |
| 19 | The basis of truth and rationality in the organization | Only Detert, *et al.* (2000) |

## 6.5 SELECTION AND EVALUATION OF DIMENSIONS

### 6.5.1 Philosophy about people

The philosophy about dealing with people has been one of the most pervasive themes of cultural studies. Schein (1992: 123) views the assumptions held by leaders about human nature as one of the key dimensions of organizational culture. Schein (1992: 125) refers to McGregor’s Theory X and Theory Y as two important basic assumptions held by managers about their employees. Schwartz and Davis (1981: 33) also point out that McGregor's theories can lead to two different managerial cultures. The *philosophy about people* dimension, as

proposed here, reflects the core beliefs about whether the organization shows a personal concern for its people and values them as important assets, or, is only concerned about the work they can deliver.

In certain frameworks a person orientation is contrasted with a task orientation on the same dimension, for example the Hofstede, *et al.* (1990: 303) *employee-oriented vs. job-oriented* dimension. Bass (1990: 481), however, asserts that there is strong theoretical and empirical support to show that increased leadership effectiveness is related to leaders that are both task and relations oriented. They are thus not lying on the same continuum. Bass (1990: 483) quotes the Blake and Mouton Grid to show that a concern for production and concern for people are two independent dimensions. Schein's (1992: 366) analysis of a learning culture suggests an orientation toward both task and relationships.

To fully comprehend this dimension, it must be understood as showing a high person orientation on the one side, and a low or negative person orientation on the other. Although this latter end can be associated with a task only orientation, it does not necessarily assume a high task orientation. The concept of task orientation is catered for under the next heading.

This dimension also has strong support in the project management literature (see section 7.7.9).

### 6.5.2 Performance management philosophy

Many existing cultural frameworks have a dimension capturing the emphasis on results, outcomes, goals, performance, and task outputs. By proposing a *performance management* dimension, it is argued that there is a single underlying dimension that relates to a proactive approach to manage and drive performance toward desired results, and that there is a focus around tasks, clear responsibilities, and accountability.

The Hofstede, *et al.* (1990: 304) cultural model has a *process versus results oriented* dimension which they associate with the Burns and Stalker (1961) mechanistic *versus* organic management styles. They also align their results orientation with the "bias for action" of Peters and Waterman (Hofstede, *et al.*, 1990: 302). The proposed *performance management philosophy* dimension includes the concepts of results and action orientation, but does not place them opposite a process orientation.

Bass (1990: 543) points out that a multitude of leadership variables have been empirically found to cluster into two factors, namely *leader consideration* and *initiating structure.* Bass (1990: 512) describes initiating structure as, *inter alia,* involving the emphasis on getting activity started, setting standards and deadlines, and providing clear guidelines of what work and how work should be done. The proposed *performance management philosophy* dimension draws from this concept of initiating structure.

Accountability is another concept that closely relate to the emphasis on expecting people to meet their performance targets. Accountability is associated with concepts such as holding managers answerable for meeting their objectives (Little, 1995: 29), and with the need for managers to face the consequences of how they deal with the activities entrusted to them (Dunn & Legge, 2001: 75). Gordon and DiTomaso (192: 788) measured accountability as a separate dimension in their culture study.

The lower end of this dimension is not the *process orientation* as suggested by the Hofstede, *et al.* (1990: 304) model. Emphasizing process and emphasizing results are not necessarily seen as mutually exclusive orientations. The lower end of this scale is associated with passivity and a *laissez-faire* style of leadership. According to Bass (1990: 544-545), *laissez-faire* leadership is the downside of several leadership dimensions, and are evident in, for example, letting things drift, setting no clear goals, leaving too much responsibility with subordinates, and paying little attention to influencing subordinates or assisting them in making decisions. These concepts capture the essence of the low end of this *performance management philosophy* dimension.

To summarize, this dimension can be described as addressing the question to what degree top management believes that the organization should implement proactive mechanisms to manage performance, such as:

- goals are explicitly set, and clarified;
- the means to achieve goals are constructively discussed and clarified;
- there is an active emphasis on getting things started;
- rewards are used as a mechanism to encourage performance and goal achievement; and
- people are held accountable for their results.

The very nature of project management stands on clear goal and responsibility setting, high levels of action, and holding people accountable for delivering against targets (see section 7.7.12.)

### 6.5.3 Locus of decision-making

The theme of decision-making and of centralization *versus* decentralization, finds substantial support in the studied cultural measurement frameworks.

Beyer (1981: 180) quotes Mintzberg (1973) as saying that decision-making is one of the crucial processes of managerial activity. Also Jennergren (1981: 54) cites the view by Ouchi and Harris (1974) that the issue of centralization-decentralization is one of the major dimensions of organizational structuring. In their *control, coordination and responsibility* dimension, Detert, *et al*. (2000: 857) address the question of where control and decision-making are concentrated in the organization.

The project management literature strongly emphasizes the need for organizations to allow project managers the autonomy to make decisions in their projects (see section 7.7.6.)

### 6.5.4 People management philosophy

Whereas the performance management philosophy dimension is seen as involving concepts of initiating structure, the *people management philosophy* dimension is viewed as leaning towards the *leader consideration* dimension (Bass 1990: 543). According to Bass (1990: 511-512) consideration emphasizes the importance of people, but also reflects management styles that will build self-esteem, consult with, and support subordinates. Kerr and Slocum (1981: 120) cite the view by Yukl (1979) that a supportive management style will involve trust, empathy, informing subordinates, appreciation for subordinate ideas, and recognition of accomplishments.

These viewpoints suggest an organization where management actively participates, invites subordinate participation, and show support to subordinates. The dimension of *people management philosophy* thus also incorporates participatory decision-making. Participatory decision-making is not seen as the same as delegation of decision-making (contained in the previous dimension); Bass (1990: 437) maintains they are two distinct concepts. Lincoln

(1995: 308) confirms the difference between participatory decision-making and decentralization of decision-making by using the typical Japanese organizations (which are participatory, but still centralized) as example.

The full context of this dimension is therefore a mutual involvement by management and subordinates in many aspects of work accomplishment and is further associated with high levels of employee consultation, and a general environment of empowerment and support.

Bass (1990: 436) sees that participative leadership belongs in two continuums: on the one hand, it finds itself opposite directive leadership, and on the other, opposite abdication or *laissez-faire* leadership. In this proposed dimension the other end of the scale emphasize the directive leadership style, and is associated with a lack of involvement by top management, minimal consultation with employees before taking decisions, a low empowerment emphasis, little support to lower levels, and generally leaving it to subordinates to find support and authority to overcome their problems. The *laissez-faire* leadership style is rather viewed as the low end of the *performance management philosophy* dimension.

The project management literature strongly emphasizes the need for organizations, and especially top management, to be supportive to the project management process. It also emphasizes leadership styles within project management that are participative and supportive (see section 7.7.7)

### 6.5.5 Cross-functional integration philosophy

The concept of collaboration across departmental borders has also been one of the popular dimensions in previous culture studies. McCann and Galbraith (1981: 60) recognize that, in the increasingly complex business environment, tasks are expanding across departmental borders and different departments have to work interdependently. McCann and Galbraith (1981: 66) add that, where the activity of one department impact on the goal accomplishment of others, strategies must be in place to coordinate activity between departments.

Detert, *et al.* (2000: 856) recognize that there is a set of basic beliefs in organizations about whether work is more effectively accomplished by individuals, or by teamwork and collaboration. Similarly, Schein (1992: 133) says that one of the important assumptions held

by leaders shows a difference between relying on the performance and accountability of individuals, or on the performance and problem-solving capacity of groups.

It is proposed to include a dimension of *cross-functional integration philosophy* in the culture construct.

This dimension has support as an important dimension of organizational management and culture, but the concept also reflects an assumption or ideological concern at organizational level. It therefore appropriately complies with the approach of the overall construct. The concept of *cross-functional integration* was also used as one of the three dimensions of a market orientation at organizational level by Slater and Narver (1994: 27).

From a project management perspective, this is a crucial dimension. Project management relies extensively on teamwork and the collaborative contributions of different functional departments (see section 7.7.4).

### 6.5.6 Competitiveness philosophy

A dimension reflecting the organization's emphasis on the market or customer is also common to many previous culture frameworks. It is proposed here as a *competitiveness philosophy* dimension by placing it on a continuum between an external (market and customer) and an internal (own products and strengths) focus. The meaning of this dimension therefore implies the deliberate choice facing the organization as to what basis of competitiveness should be emphasized.

The question whether this could be seen as a dimension of culture at organizational level requires further elaboration. Slater and Narver (1994: 22, 27) distinguish between the concepts *market orientation* and *marketing orientation*. Whereas they see <u>marketing</u> orientation as residing in the function of marketing, they view <u>market</u> orientation as a long term visionary concept, and as integral to an organization's culture. Loubser (2000: 85) also associates the concept *market orientation* with organizational culture, and furthermore cites the work of Tuominen and Möller (1996) who describes the concept as an organizational philosophy, and one that lays down norms and values across the whole organization.

It is therefore proposed to include a dimension of *competitiveness philosophy* as part of the culture construct. Slater and Narver (1994: 27) define *customer emphasis* and *competitor focus* as essential elements of a market orientation. The definition of this *competitiveness philosophy* dimension as an external *versus* internal orientation implies, in the one direction, a broader focus on the market and the competitive environment, thus including the competitor focus of Slater and Narver (1994). The other direction (internal orientation) focuses on internal strengths and capacity as a basis of competitiveness.

Project management requires a close and continuous relationship with the clients of projects. This dimension also complies with calls from the project management literature that organizations should be focused on the customer and that projects should be seen as small businesses interacting with the external environment (sees section 7.7.2).

### 6.5.7 Organizational direction

The concept of organizational direction has only partial support as a dimension in the selected culture study sources. Ashkanasy, Broadfoot and Falkus (2000) include the concept within the description of their leadership dimension; Van der Post, *et al*. (1997) includes it within their organization focus dimension. It nevertheless appears to be an important consideration at the strategic level of an organization and also has convincing support in other sources of literature.

Denison and Mishra (1995: 216) have *mission* as one of their four dimensions of organizational culture. They associate mission with themes like organizational purpose, an appropriate course of action, and a long term vision. Two of the dimensions developed by Detert, *et al.* (2000) in their study, deal with related concepts. The *control, coordination and responsibility* dimension emphasizes an approach towards control by means of alignment, and visions and goals that are shared (Detert, *et al.*, 2000: 857). Their *nature of time and time horizon* dimension, *inter alia*, pays attention to the need for strategic management and for making the necessary investments to support a long term vision (Detert, *et al.*, 2000: 854). Both these dimensions can thus be associated with a purposefulness and stability of organizational direction.

Tichy (1981: 233) compares mechanistic and organic organizations along a dimension that focus on the nature of mission and strategies; the two ends of the scale are *explicit and*

*integrated* (organic organizations) and *implicit and fragmented* (mechanistic organizations). This captures the important objective of this dimension, namely to distinguish between organizations that have an explicit and unifying purpose and direction, organizations that follow a more fragmented approach where different brands, product lines, or departments primarily focus on their own goals.

The project management literature also provides substantial support for the need for organizations to be aligned and working towards commonly shared goals, and for projects that have strategic significance for the organization (see section 7.7.1).

### 6.5.8 Communication philosophy

A dimension of communication also has only medium support in the selected sources. Ashkanasy, Broadfoot and Falkus (2000) have it as a separate dimension; Van der Post, *et al.* (1997) deal with communication style as part of their management style dimension. The theme of communication in an organization, however, has substantial support in other cultural studies and related literature, and is also a key project management concern.

Hofstede, *et al.* (1990: 304) have an *open system vs. closed system* dimension, which they associate with the communication climate in the organization. The Van der Post, *et al.* (1997: 148-149) study consolidated the dimensions of eleven previous studies; at least five of them had separate dimensions of communication.

The Tichy (1981: 233) model, in which he distinguishes between organic and mechanistic organizations, also has a communication dimension which stretch from *open communication* at the organic end to *minimal communication* at the mechanistic end.

Communication openness is also an important dimension for knowledge distribution. De Long and Fahey (2000: 119-120) emphasize the need for high levels of trust, communication, and information sharing to enable the free-flowing of knowledge to members and into the organization's databases. Schein (1992: 370) proposes *information and communication* as one of the dimensions of a learning culture, and stresses the need for a high degree of connectivity, which he associates with the openness of information, and with sharing and trust.

Communication is also recognized as a strategic organizational level concern. Schein (1992: 370) recognizes the role of leaders to create the conditions that will promote a sufficient level of communication and information distribution. Similar support comes from Robertson (2002: 24) who argues that top management is primarily responsible to set the tone for communication in an organization, and that communication is an organization-wide system fundamental to the support of most organizational activity.

There is thus sufficient evidence to justify *communication philosophy* as a cultural element and to include it as a dimension in this construct. The project management literature also reveals organization wide communication as an important prerequisite for the successful management of projects.

### 6.5.9 Personal competency philosophy

A dimension that reflects an emphasis on training or people development has received only medium support in the selected sources. The Van der Post, *et al.* (1997) culture model, for example, does not have such a dimension, but the theme of training was nevertheless contained in at least four of the eleven studies they had consulted for developing their instrument (see Van der Post, *et al.*, 1997: 148-149).

Lorsch (1977: 3) emphasized the importance of selection criteria, the necessary qualifications for positions, and training as elements of organizational design. Later, Lorsch (1986: 106) stated that beliefs about distinctive competencies are an integral part of top management beliefs, and should be probed as part of cultural audits. More recently, Wiley and Brooks, (2000: 189) found ongoing training and development of people to be one of the five leadership practices associated with high performance organizations.

A *personal competency philosophy* is thus proposed as a dimension of the culture construct. The dimension taps whether there is a general belief in the organization that people must be competent in their jobs and that the organization has a role to play to support and encourage the competency development of its people. The low end of this dimension would define an organization that believes that it does not need specific competencies and that generic skills available in the job market are sufficient.

The need for a competency dimension is also supported in the project management literature. Project management is an intricate system of processes and protocols, and demands a thorough understanding by its participants as well as by the supportive components of the organization. The project management literature therefore calls for organizations that are actively concerned about competency and training (see section 7.7.10).

### 6.5.10 Process and systems support philosophy

It appears that in most survey type culture research, the concept of formal systems, standardization, and processes has been associated with dimensions that emphasize restrictive mechanisms of control, task structuring, and bureaucracy. This means that, especially in the "ideal culture" approach to culture measurement, it has been anticipated as having a negative impact on organizational performance. The Hofstede, *et al.* (1990: 304) study has a *process versus results oriented* dimension where a process orientation is even found to be in opposition to an emphasis on results (and associated with a mechanistic organization).

Little evidence in the past cultural survey literature exists to suggest systems and standardized processes as a potentially supportive factor in organizations. Project management, for example, is strongly dependent on standardized planning, practices, and reporting, and on the necessary supportive systems. This, however, should not be unique to project management.

Detert, *et al.* (2000: 855), arguing from a TQM culture perspective, pay attention to this aspect in their dimension of motivation. They, stress the point that people's motivation will be impacted upon by the support, or lack of support, they get from organizational systems. In this regard, they view inadequate systems as a negative influence, in line with TQM principles.

The Jaworski and Kohli (1993: 65) study found no support for their hypothesis that the level of formalization (the use of rules, norms, and sanctions) should have a negative impact on the marketing orientation in a company. They concluded that the nature of rules and formalization, rather than their mere presence, could be a more important factor. By this the study implicitly suggests that formalization could be studied in terms of different forms and the different underlying beliefs they reinforce, instead of only studying the degree of formalization as a single dimension.

Kerr and Slocum (1981: 125) argue for a different approach to control people from specialized professions. Control should rely on their expertise and commitment to adhere to professional standards, and on a form of self and collegial control. In this regard they also stress the need to have access to relevant information for exercising self control. Information systems could therefore be an important component of self-control.

Hackman, Oldham, Janson and Purdy (1995: 60-62) associate job enrichment with the need to receive feedback; and add that feedback has the strongest impact when it comes directly from the work. The design and use of computer systems, for example, have been recognized by organizations as a mechanism to give employees fast and accurate feedback (Hackman, *et al*., 1995: 70).

Hall (1981: 320-321) draws attention to the importance of technology for organizations, and points out that technology also involves the softer forms of operational and knowledge technologies, besides the organization's production technologies. Hall (1981: 331) uses computer-based planning and scheduling tools (like PERT) as examples of organizational technology.

De Long and Fahey (2000: 114) expand on the theme of knowledge by distinguishing between human knowledge, and structured knowledge, which is embedded in systems, processes, and other routines. This latter type is knowledge that has become an organizational resource and exists outside the "human knowers" (De Long and Fahey, 2000: 114).

The culture survey literature has so far not produced a dimension that pays attention to themes like self-control support, information systems, technology, and the capturing of knowledge by organizational systems and processes. Notwithstanding the survey literature, even Schein (1992: 58) recognizes that the technology, knowledge, and skills of an organization, forms part of its culture.

Therefore a *process and systems support philosophy* dimension is proposed as a further dimension of the culture construct. This dimension encapsulates concepts of organizational systems, processes, and technology as supportive, enabling devices, and as mechanisms for accumulating organizational knowledge. This dimension is seen as distinctly different from the concept of rules, systems, processes, and procedures as controlling and limiting mechanisms which are generally associated with bureaucratic and mechanistic cultures.

In the project management literature there is substantial support for the need to have a strong infrastructure of supportive systems and standardized project management processes (see section 7.7.11).

### 6.5.11 Flexibility philosophy

Two dimensions that are highly pervasive in the culture survey literature have not yet been dealt with in the proposed construct, namely an emphasis on flexibility and change, and an emphasis on formalization (in a restrictive connotation).

Detert, *et al.* (2000: 857) propose a *control, coordination and responsibility* dimension in their framework. They define this dimension as addressing questions about the concentration and tightness of control, and about issues of rules and procedures, and of flexibility and autonomy. They thus put these two concepts (flexibility and formalization) as two opposing positions on a continuum.

Kets de Vries and Miller (1986: 274) associate bureaucratic cultures with organizations in which people are generally not trusted. They emphasize that these organizations will prefer styles that are characterized by direct control and supervision as a way of coordinating work, and by giving little discretion to people in performing their work. Schein (1992: 129) also characterizes a certain basic assumption of leaders, about the nature of people, that stresses the necessity for them to control employees. He sees the Apollonian culture (of Handy, 1978), which is based on rules, hierarchy and mechanisms to control and restrict people, as following from this assumption by leaders. Both Kets de Vries and Miller (1986) and Schein (1992) therefore associate bureaucratic type cultures with an emphasis on allowing people little freedom and flexibility.

Kotter and Heskett (1992: 45) make this link more directly by referring to the bureaucratic and adaptive cultures as opposites of each other. They associate the bureaucratic culture with characteristics of control, risk aversion, reactiveness and non-creativeness, whereas they describe the adaptive culture as risk-taking, proactive, open to change and to entrepreneurial behaviour (Kotter and Heskett, 1992: 44-45).

There is thus a reasonable degree of support in the literature to propose a single dimension, namely *flexibility philosophy*, which captures an important assumption about the nature of

people. On the one side this philosophy emphasizes that employees should be controlled, restricted, and allowed only to act within explicit rules and procedures; on the other side employees could be allowed flexibility, and the freedom and discretion to be creative. The flexible organization would typically be more open to change and risk-taking.

The project management literature provides ample evidence to support this dimension as relevant for the organization involved in project management (see section 7.7.8).

### 6.5.12 Decision-making rationale

There is one theme that has found almost no coverage in the body of empirical survey type studies of culture, but one that commands attention from the project management literature. This concerns what is the basis of truth and rationality in organization decision-making. A related theme has been identified as one of the dimensions of project management effectiveness (see section 4.6.4) and a similar theme has also been identified as a key concern of project management at organizational level in Chapter 7 (see section 7.7.3). It is therefore necessary to explore other sources of cultural literature to evaluate the existence of such a dimension.

Detert, *et al.* (2000: 853) propose a dimension (the basis of truth and reality) to give consideration to the use of hard data and systematic study as a basis for decision-making, in line with "Management by fact" in the TQM literature. They contrast this approach with a tendency to rely on "gut feel", intuition, and experience.

Rationality is also one of the nine factors of cultural transformation advanced in a model by Cartwright (1999: 43). Cartwright’s (1999: 57) description of rationality emphasizes a logical approach to problem-solving. He contrasts rationality with emotional and biased reasoning, and with rationalizing mistakes rather than finding the true causes.

Schein (1992: 97-98) also considers the existence of a dimension of culture that would address the concept of reality and truth in the organization. Schein associates this dimension with, for instance, the preference to rely on science and rationally based data.

The broader cultural literature thus acknowledges the existence of such a dimension. Still, the question how it could be more fully defined and operationalized needs further clarification.

Harrison and Pelletier (2000: 468) view rationality as one of the key dimensions of management decision-making. They associate rationality with an orientation where the accomplishment of long term goals takes preference. Murray and Gandz (1980: 15) associate rationality with a focus on cost-benefit, efficiency, and effectiveness concerns in the achievement of organizational goals. Tichy (1981: 233) contrast a rational analysis orientation with a "seat-of-the-pants" approach. Bazerman (1995: 221) again, uses the concept of rational decision-making in contrast to heuristic (or "rule-of-thumb") decision-making. Sergiovanni (1979: 13) maintains that a rational model of decision-making emphasizes scientific observation and analysis ahead of intuitive methods to improve cost-benefit ratios.

The philosophy whether to emphasize rational or heuristic decision-making is important for organizations. Both Staw and Ross (1995: 228-229) and Bazerman (1995: 221) highlight several decision risks related to organizations that do not have the ability to take rational decisions.

Schein (1992: 366-367) views this dimension as stretching from moralistic to pragmatic. In this regard it distinguishes between truth as something that is to be found in positions of control (moralistic), and truth as something that is situational and subject to discovery and learning (pragmatic). The implication that political control may be a side-effect of Schein's moralistic orientation, receives support in other sources. Kets de Vries and Miller (1986: 277) contrast rationality in decision-making with an environment in which political motives take preference. Similarly, both Sergiovanni (1979: 19) and Murray and Gandz (1980: 15) recognize political thinking as a concept that opposes rational thinking.

The essence of political behaviour lies in acts of explicit manoeuvres to serve self-advancement or self-protection motives (Murray & Gandz, 1980: 16). Kotter and Heskett (1992: 51) associate political behaviour with showing an affinity for focusing inward, and with generally supporting an unadaptive organizational culture.

Organizations with politicized cultures are generally associated with negative undertones:

- conflict over resources and budget allocations (Murray & Gandz, 1980: 14);
- members tend to promote their own pet projects (Kets de Vries & Miller, 1986: 276);
- members are encouraged to pursue their own interests (Mintzberg, 1991: 65); and

- friends are promoted over people that qualify on "rational" grounds (Murray & Gandz, 1980: 12).

Parker, Dipboye, and Jackson (1995: 908) empirically found support for the existence of politics as a dimension of organizational behaviour in the perceptions of employees.

The cultural literature evidence and the support from the project management literature justify a dimension that can tap the decision-making rationale in organizations. This dimension measures the degree to which the organization puts preference on the use of data, discovery of facts, and rational analyses in making key decisions. The other end of the dimension measures a preference for decisions based on the choices of persons in key positions, and on quick, intuitive, and heuristic approaches. This end could typically characterize an organization that is prone to political manoeuvring and tactics.

## 6.6 SUMMARY OF DIMENSIONS PROPOSED

A summary of the twelve dimensions proposed is given in Table 6.3. This summary shows a brief description and an indication of the direction of each dimension.

## 6.7 DIMENSIONS EXCLUDED

### 6.7.1 Introduction

A number of the dimensions found in the selected literature sources and listed in the core set have been excluded from the above framework. Besides combining two (flexibility and formality) as two opposing ends of the same dimension, six others have been omitted. A brief discussion is given as to why they have not been included.

**Table 6.3: Summary of proposed dimensions**

| Dimension | Description | Low end of scale | High end of scale |
|---|---|---|---|
| Philosophy about people | Beliefs about how to treat people | Very little concern, employees are only important for what they produce | Persons valued as important, staff to feel at home and personally cared for |
| Performance management philosophy | The beliefs about how to manage the organization toward results | Delegate and leave, laissez-faire, let things drift, goals not clear, unclear responsibilities | Clear goals, action, accountability, ongoing monitoring, reward for performance |
| Locus of decision-making | Beliefs about where authority for decision-making should situate | Centralized in the hierarchy | Decentralized to the appropriate levels of expertise and in line with delegation of responsibility |
| People management philosophy | Beliefs about interacting styles between managers and subordinates | Little understanding of lower level activity, directive, not involved, staff must solve problems (toward a management emphasis) | Consult, employee participation, understand concerns, assist problem solving, empower, lend authority (leadership emphasis) |
| Cross-functional integration philosophy | Beliefs about the need for collaboration and coordination between departments | Fragmented, departments must do their own thing, no teamwork, departmental results emphasized | Need high integration and effective cross-functional teams, active coordination needed, organizational results focus |
| Competitiveness philosophy | Beliefs about doing business with customers and about the competitive environment | Internal focus, current products and technology, no particular relationships with customers, compete with own strengths | Focused on the customer and market needs, customer relationships, compete against competitor strengths |
| Organizational direction | Beliefs about organizational strategy | Short term, opportunistic, unfocused, frequent changes, poorly understood by organization, departmental concerns dominate | Long term, focused, unifying goals and purpose, clearly articulated, subscribed to by whole organization |
| Communication philosophy | Beliefs about the need for communication and distribution of information across organization | Tight control of data, low transparency, communication not important, info as personal advantage, low trust, keep silent | Free-flow of communication, all directions, openness, leaders communicate and inform, feedback, open to counter views |
| Personal competency philosophy | Beliefs about the need for competent people and for active skills development | Competency not too important, generic skills, little or poor training, staff easily replaceable | Specific competencies emphasized, good training, personal development encouraged, excellence focus |
| Process and systems support philosophy | Beliefs about formal and standard processes, systems and routines | Little need, people to create their own, do with what is available | Focus on supportive and empowering systems and processes, ongoing improvement, capitalize on knowledge |
| Flexibility philosophy | Beliefs about how to control and activate the workforce to a required level of performance | Supervision, restrictive rules, policies and procedures, display low tolerance for risks and mistakes, stability, resist change | Encourage risk-taking, freedom to be creative and innovative, open to change |
| Decision-making rationale | Beliefs about type of information and criteria to use for decision-making and problem solving | Based on experience, quick and ready, “gut feel”, personal interests, political concerns, short term considerations | Rational, fact-finding, learning, productivity concerns, seek organizational interests, long term |

### 6.7.2 Culture management

The theme of culture management is a dimension in the Van der Post, *et al.* (1997) model. This concept may be a stronger concern in the “ideal culture” paradigm. In a study approach which emphasizes cultures as objective profiles that may be contingent on the industry or organization type, it is judged to be less relevant. Especially where management attempts to shape and maintain a culture that may have become obsolete or where the culture is not conducive to its type of work, culture management may even be a dysfunctional act. Under these circumstances it appears to be an ambiguous construct to operationalize.

### 6.7.3 Reward orientation

A dimension of reward orientation was included in the Van der Post, *et al.* (1997) model and also in the Jaworski and Kohli (1993: 55) survey.

Burke and Litwin (1992: 529) say that the company's reward system both reflects and shapes an organization’s culture. Similarly, Schein (1992: 88) remarks that certain key underlying assumptions of a culture would be revealed in how the reward systems work. For example, team performance could be rewarded where collaboration is highly valued; performance can be rewarded to reinforce an approach towards performance management. Reward can therefore be used to reinforce behaviour stretching over multiple dimensions.

This makes a reward orientation, similar to culture management, an ambiguous dimension. A high emphasis on reward for performance, but with individual performance as the main criterion, can be dysfunctional in a project management environment.

Reward is also not a simple concept to operationalize. Past cultural surveys tended to oversimplify reward, perhaps implying mainly financial rewards or incentives. Sethia and Von Glinow (1985: 404) give a more complex view of reward systems that includes financial benefits, as well as more subtle components such as job fulfilment, challenges, recognition, career advancement opportunities, prominence and organizational privileges.

A reward orientation is thus not proposed as a dimension of the culture construct.

### 6.7.4 Socialization on entry

This dimension is only found in the Ashkanasy, Broadfoot and Falkus (2000) scale. It is judged too specific and does not have support in other cultural survey studies as a separate dimension. It also does not have any prominent support in the project management literature.

### 6.7.5 Conflict resolution

Conflict resolution is a dimension in the Van der Post, *et al.* (1997) survey. Dealing with conflict is an important dimension and the theme also receives substantial attention in the project management literature, but it is viewed to associate with a culture which encourages communication, transparency, and a general openness to air differences of opinion. This dimension has already been catered for.

### 6.7.6 Assumptions about the nature of time

A dimension related to how an organization deal with the issue of time is dealt with in detail by Schein (1992: 105). More recently Detert, *et al.* (2000: 854) proposed the nature of time and time horizon as a dimension in their framework of culture, primarily to distinguish between a long and short term orientation. It is, however, judged that the *organizational direction* dimension, which tests the organization in terms of strategic focus and direction, to an adequate degree discriminates between organizations with a longer term (future) versus shorter term (current) focus.

### 6.7.7 Motivation

Motivation is proposed as a dimension by Detert, *et al.* (2000). However, motivation does not really comply with the focus of the culture construct for this study. Motivation is also regarded more as a climate variable (a satisfaction). The underlying culture that should result in motivated, or demotivated, employees is judged to be sufficiently covered by other dimensions.

## 6.8 SUMMARY

This chapter addressed several theoretical issues in the cultural literature before it developed a rationale and definition for the culture construct of this study. By using a selected body of previous culture survey studies, a set of dimensions that had shown to be persistent over time was extracted. Through further theoretical analysis and comparison with the project management literature, twelve dimensions have been proposed to define the culture construct.

Ten of these dimensions are closely related to the dimensions of previous surveys, but two dimensions are largely new and have not previously been used in cultural surveys. These dimensions, *process and systems support* and *decision-making rationale*, are important dimensions for project management. The wider culture literature, however, provides ample support for the inclusion of these two dimensions in a culture construct.

The next chapter addresses the results of the project management literature in respect of organizational culture variables.

# CHAPTER 7

## PROJECT MANAGEMENT AND ORGANIZATIONAL CULTURE

### 7.1 INTRODUCTION

This chapter examines the importance of organizational culture to project management. Its main approach is to find pertinent, explicit as well as implicit, references to organization level variables and the influence these are anticipated to have on project management. The body of literature in project management that specifically uses the label *culture* is small and has not been found adequate for postulating a project management supportive culture. A wider collection of project management literature had to be consulted.

In previous chapters, culture has been shown to be associated with a variety of organizational issues, such as human resource practices, management styles, values, norms, interpersonal relationships, authority relationships, and basic assumptions about managing and leading the organization (Deal & Kennedy, 1982: 31-32; Denison: 1990: 2; Kotter & Heskett, 1992: 98; Pettigrew, 1990: 414-415; and Schein, 1992: 49).

This chapter thus reviews how the broader project management literature deals with similar "cultural" issues in organizational context.

The chapter starts by concentrating on the use of the term culture in project management, and on empirical studies that have researched cultural influences in project management. Then it reports the findings of an in depth research to find the persistent organizational issues in respect of project management.

This analysis is presented in a schema that corresponds with the dimensions developed in the previous chapter. In the previous chapter it has been stated that an iterative process was followed to ensure that the selected dimensions of the culture construct adequately address project management concerns, and at the same time retain a generic culture character.

## 7.2 THEORETICAL STATUS OF ORGANIZATIONAL CULTURE IN PROJECT MANAGEMENT

The theme of culture has received increasing attention in the project management literature. But the way the theme has been addressed, has not shown a consistent alignment with acknowledged theoretical definitions of organizational culture. Many project management authors recognize the importance of an organization's culture to project management, but with a few exceptions, they deal with the concept either in a loosely defined way or study only a few elements that do not comprehensively define culture.

Systematic empirical work on organizational culture and its relationship with project management is also scarce. The literature recognizes this shortcoming. Wang (2001: 5), for example, questions the non-theoretical and subjective approach of past studies that address the values of a project management supportive culture. The Kloppenborg and Opfer (2000: 55) study reports that even most human resource related studies in project management are primarily case studies or expert accounts rather than systematic empirical research.

## 7.3 EMPIRICAL STUDIES RELATING ASPECTS OF ORGANIZATIONAL CULTURE TO PROJECT MANAGEMENT

There are a number of empirical studies that have researched cultural, managerial or climate variables at organizational level, broadly speaking the organizational level context. These have paid attention mostly to a limited number of variables, but nevertheless they contribute to building a broader framework of understanding how the organization exerts its influence toward project management.

Gray (2001: 104), for example, studied the influence of organizational climate which he measured along five dimensions: management style at organizational level; management style at project level; voluntarism (a concept comprising variables such as free expression of ideas and participation in goal setting); the degree of coercion in managing people; and the level of environmental threat (natural, societal, and political forces) perceived to affect project participants. Gray (2001: 108) found empirical support for the viewpoint that a supportive organizational environment contributes to successful projects.

Denison, Hart and Kahn (1996) empirically developed a framework for studying cross-functional teams in organizations. Although the study is, strictly speaking, not a project management study, the issue of cross-functional teams is a relevant project management topic. Their definition of organizational context includes dimensions such as: coordination between various teams; autonomy and power given to the team; resource availability; mission and direction setting; and reward for team performance (Denison, *et al.*, 1996: 1013). The study did not provide conclusive relationships between context and outcome variables as its aim was primarily to test the applicability of the different constructs as basis for future research (Denison, *et al.*, 1996: 1017).

A study by Keller (1986: 723) found positive correlations between the performance of project groups and dimensions of group cohesiveness, innovation orientation, and job satisfaction. Although these variables were measured at group level and not at organizational level, they do represent typical organizational level issues and are similar to the typical dimensions found in organizational climate studies.

An empirical study conducted by Thamhain and Gemmil (1977: 220-223) into the styles of influence used by project managers, found that the use of coercive power as a mechanism to influence project participants had a negative influence on member support for the project manager. Other findings reported by this study were that the use of legitimate authority by project managers showed a negative correlation with variables such as project performance, the upward flow of communication, and team member involvement. The study also found that work challenge, as a source of intrinsic motivation, was an important influence factor.

Katz and Allen (1985) conducted research into the relationship between performance in research and development projects and the relative levels of influence of functional and project managers in project teams. The study found that a clear distinction between their roles had resulted in higher project team performance, specifically where project manager roles had been emphasizing output and external matters, and functional manager roles, input and technology matters (Katz & Allen, 1985: 82).

Tishler, Dvir, Shenhar, and Lipovetsky (1996) conducted research to identify the managerial success factors in defence development projects over a period of 20 years. The variables tested included a set of organizational and managerial environment dimensions. They found

that organizational cultures that support professional growth and encourage people to work for extensive periods on the same project are critical to project success (Tishler, *et al.*, 1996: 168).

In a more recent study, Dunn (2001: 3) investigated the sources of job satisfaction and motivation in matrix organizations, and in particular the roles played by functional and project managers in the work experience of project participants. The study found that functional managers are not the sole providers as far as the needs of individuals are concerned. Whereas team members generally associate functional managers with hygiene factors, they perceive project managers as the source of motivating conditions (Dunn, 2001: 9).

Dvir and Ben-David (1999: 151) used a neural network approach to investigate the influence of a number of human resource related variables, including organizational culture, on project success. They did not specify how they had operationalized the construct of culture. The findings showed support for the notion of organizational culture influencing project success (Dvir & Ben-David, 1999: 157).

## 7.4 HOW IMPORTANT IS ORGANIZATIONAL CULTURE TO PROJECT MANAGEMENT?

The Gray study (2001: 106) cited above found that project team cultures were highly similar to the cultures of their parent organizations. This type of evidence questions the standpoint that project groups can easily build their own subcultures. The “skunk works” principle, so called after the Lockheed example in the 50’s (Gray and Larson, 2000: 243), illustrates the point that certain organizations in practice recognize their negative cultural influences and respond by physically shielding project groups from this influence.

Several recent authors emphasized the important relationship between organizational culture and aspects of project management.

Donnellon (1993: 391) stresses the importance of an organizational culture that place emphasis on collaboration to enable successful teamwork. Cicmil (1997: 394) recognizes the organizational *environment* as a determining factor for effective project management. Hunt (2000: 313-314) asserts that both the influences of national culture and the business culture of

the organization will impact on the project management function. Kerzner (2001a: 81) claims that organizations that are excellent in project management also have cooperative cultures where the entire organization supports and contributes to its project management function.

Brown (1999a: 73) draws attention to the difficulty of functionally structured organizations, which emphasize work that are carried out within the jurisdiction of their functional departments, to cope with projects which are simultaneously being carried out by more than one department. Sherman, Cole and Boardman (1996: 25) found, in their case study, that the organizational culture and in particular the lack of inter-departmental cooperation played an obstructive role to effective project management.

Besides the relationship between departments, Pitagorsky (1998: 7) highlights the pervasiveness of the conflicting relationship between project and line managers in organizations involved in project management. In this regard, Kerzner (2001a: 31) stresses the importance of balancing authority and accountability between project and functional managers in the project organization. Gray and Larson (2000: 238) recognize authority relationships as a typical organizational culture issue.

The subject of culture and project management is acknowledged as a real and involved problem. Gray and Larson (2000: 242) warn that organizations with negative cultural circumstances will have to invest more resources and authority to make projects succeed.

Organizations are advised to make a deliberate effort to address their cultures. Brown (1999a: 76) asserts that top management commitment is necessary to successfully introduce project management in the organization. Brown (1999b: 37) has experienced through involvement with several practical cases that transformation to a project management culture does not come easily, and that it can take three to five years before organizations harvest the benefits of meeting project targets on an increasing scale. Kerzner (2001a: 32) also emphasizes that executive project sponsorship has a key role in building organizational cultures that are supportive of project management.

## 7.5 AN OVERVIEW OF PREFERRED CULTURAL ORIENTATIONS FOR PROJECT MANAGEMENT

### 7.5.1 Introduction

In this section several viewpoints of culture as seen in its relationship with project management, are discussed. The discussion is conducted via four important knowledge areas of project management, namely the nature of project management in general, matrix management, teamwork, and leadership in project management. This section serves to present an overview of the type of literature and concerns that were consulted to develop a more comprehensive picture of the relevant culture dimensions for the project management organization further in the chapter.

### 7.5.2 Cultures conducive to project management in general

Trompenaars (1986) classifies organizational cultures as left brain or right brain types. Left brain organizations are associated with characteristics such as: individualism; achievement orientation; a rational orientation; preferences for task-specific relationships; functionally differentiated structures; and goals that are few and specific, and linked to technological and economic standards (Trompenaars, 1986: 122-126).

On the other hand, right brain organizations show cultural characteristics such as: a group orientation; a holistic emphasis; affection-based relationships; the power of superiors vested in the person (rather than in the role); organic structures; and diverse sets of goals (Trompenaars, 1986: 122-127).

In his analysis, Trompenaars (1986: 127-129) reasons that the left brain organization lends itself better to project management than the right brain type, and accentuated a number of arguments:

- the emphasis on group affection in the right brain type is less compatible with the relatively short term group affiliations of projects;
- the emphasis on task orientation and achievement of clear and explicit goals is typically left brain oriented;

- left brain organizations would more easily deal with the situation of flexible project authority and of project relationships formed only for a specific project purpose, than right brain types which prefer a holistic and permanent view of authority; crises of loyalty would be more severe in right brain cultures; and
- the strict emphasis on task control in project management may deprive right brain managers of relying on their personal touch.

This reasoning of Trompenaars may offer some logic, but also makes some contesting statements, which are not necessarily supported by later studies.

One of the few other contributions, where organizational culture and its relationship with project management are addressed in a comprehensive way, comes from Gray and Larson (2000). They believe that extant cultural research has characterized cultures in terms of ten dimensions (Gray & Larson: 236). These dimensions are shown in Table 7.1.

**Table 7.1: Dimensions of a project management oriented organizational culture**

| No | Dimension | Description | Project management orientation |
|---|---|---|---|
| 1. | Member identity | Employee identification with the organization *versus* their own job or profession | Toward an organization orientation |
| 2. | Team emphasis | Orientation between team and individual work | Strong team orientation |
| 3. | Management focus | Orientation between people and task | Moderately people orientation |
| 4. | Cooperation between units | Orientation between independent and interdependent | Strongly interdependent |
| 5. | Control orientation | Tight as opposed to loose rules, procedures, and supervision | Moderately loose |
| 6. | Risk tolerance | The degree of risk-seeking behaviour | High risk-seeking orientation |
| 7. | Reward criteria | Rational and based on performance *versus* based on non-performance criteria | Moderately performance based |
| 8. | Conflict tolerance | Openness to air one's views | Toward a high openness atmosphere |
| 9. | Means *versus* ends | Orientation toward outcomes as opposed to the processes used | Balanced orientation |
| 10. | Open systems orientation | Responsiveness to changes in the external environment | Highly responsive and open |

Source: Adapted from Gray and Larson (2000: 236)

The Gray and Larson (2000) framework does have themes that overlap with the dimensions of the generic cultural studies reviewed. No further evidence, however, is provided by the authors to support this as a sufficient framework for empirical study in project organizations. The review of the cultural literature discussed in the previous two chapters has highlighted other important dimensions to consider. Cultural concerns revealed by other project management authors also address important issues not provided for by this framework.

Gareis (1994: 4.4), for example, describes a project management subculture in terms of variables such as: organization and communication structures; new role perceptions by staff; personnel policies promoting flexibility and acceptance of multiple assignments; new personnel qualifications; the visibility of corporate vision and strategy as integrative mechanisms; and subscribing to new styles of autonomy.

Later work by Gareis (2000) expands his concept of culture to the organizational level. Gareis (2000: 18) defines the notion of a project management supportive culture as one that should promote project management related values and mindsets, such as:

- viewing the organization as competitive advantage;
- empowerment of employees;
- having a process-orientation;
- emphasis on teamwork and a flatter organization structure;
- openness to organizational change;
- orientation toward customers; and
- networking with clients and suppliers.

The process orientation of organizations is also supported by Brown (1999a: 76) who calls for the need to emphasize the process of achieving results, and not to focus only on the actual results. Similar support is provided by Lindkvist, Söderlund and Tell (1998: 949) whose case study research found that the disciplined use of deadlines and milestones strongly assisted the shift from sequential project work to cross-functional work by, for instance, encouraging cross-functional communications.

The organization climate study by Gray (2001: 108) found the following with respect to how climate factors affect the success of project management:

- a threat and coercive atmosphere - negatively correlated;
- involvement in setting own targets and participation in decisions - positively correlated;
- mistrust for senior management - negatively correlated; and
- controversies over the desirability of project - negatively correlated.

### 7.5.3 Cultural styles associated with matrix organizations in project management

The matrix organization has always been viewed as a controversial and problematic way of organizing. Larson and Gobeli (1987: 127) reported that, although matrix structure had been widely used or attempted, it had many critics due to its poor success record.

Nevertheless, most organizations involved in managing cross-functional projects, cannot escape relying on the principles of matrix management. Several authors have recognized that organizational culture and styles of management are important factors for the successful application of matrix management (Ford & Randolph, 1992: 282; Galbraith, 1994: 102; Greiner & Schein, 1981: 17). Bartlett and Ghoshal (1990: 145) state that the focus on the matrix should not so much be on the structure, but on a different way of thinking to be created in the minds of managers.

Ford and Randolph (1992: 282) borrow from work by Davis and Lawrence (1977) to suggest that open and flexible cultures would more readily adapt to a matrix organization. Bureaucratic cultures, according to Ford and Randolph (1992: 282), are associated with high degree of resistance to the matrix organization.

Greiner and Schein (1981: 17) draw attention to how the matrix organization violates traditional management principles, for example: the principle of single lines of authority; the need for formal authority over people to meet one’s responsibilities; and the specialization of work in a single department for better efficiency. Larson and Gobeli (1987: 127) see the characteristic problem of matrix structures, likewise, as their nonconformance to a single chain of command principle.

Ford and Randolph (1992: 277) reviewed several past studies on matrix management and found that stress and other negative side-effects are associated with the circumstances in matrix organizations. These circumstances typically involve the dual authority relationships, role ambiguity, the need to resolve conflict, and higher levels of personal responsibility and decision-making.

Table 7.2 depicts a number of viewpoints in the literature about organizational characteristics and their impact on matrix functioning in organizations.

**Table 7.2: Cultural characteristics associated with matrix organizations**

| No | Characteristic | Impact | Source |
|---|---|---|---|
| 1 | Independent departmental thinking | Negative | Ford & Randolph (1992: 282) |
| 2 | Emphasis on vertical reporting | Negative | Ford & Randolph (1992: 282) |
| 3 | Little exposure to change | Negative | Ford & Randolph (1992: 282) |
| 4 | Tolerance for accepting direction from more than one superior | Positive | Greiner & Schein (1981: 20) |
| 5 | Consistency between personal goals and organizational goals | Positive | Greiner & Schein (1981: 20) |
| 6 | Valuing contributions from other disciplines | Positive | Greiner & Schein (1981: 20) |
| 7 | Allowing individual autonomy | Positive | Ford & Randolph (1992: 277) |
| 8 | Allowing individual participation | Positive | Ford & Randolph (1992: 277) |
| 9 | Balanced authority (vertical and horizontal) | Positive | McCann & Galbraith (1981: 62) |

### 7.5.4 Cultural styles associated with teamwork in project management

Project teamwork is another area that is associated with the cross-functional nature of project management. In this regard teamwork is contrasted with work in the functional department that is often individualistic in nature, or based on group functioning that is carried out within relatively permanent authority patterns and personal relationships. Project teamwork implies a temporary team composition, *ad hoc* authority arrangements, and different backgrounds of individuals participating in the team. The essence of teamwork resembles the issues of matrix management, but it is often dealt with as a separate topic in the literature.

The teamwork literature also acknowledges the organizational environment, or culture, as impacting on the quality of teamwork. Katzenbach and Smith (1993: 175) contend that teams function better in organizations with a strong general performance ethic. Kharbanda (1990: 75) again, relates good team functioning to Theory Y as opposed to Theory X management styles, and points out that hierarchical management structures find it hard to succeed with a Theory Y approach.

Donnellon (1993: 391) raises the need for top management sponsorship to pay attention to the integrated interests of multi-functional teams in organizations that are functionally separated. Donnellon (1993: 389-390) also emphasizes the need for organizations to focus on team accountability and team performance appraisals. Also Kharbanda (1990: 263) stresses the importance of reward systems that incorporate team incentives in addition to individual incentives. Fleming and Koppelman (1996: 168) draw attention to the need to empower project development teams to act independently and to allow them the autonomy to make their technical decisions.

Most of the literature on teamwork, however, focuses on the internal team conditions that would encourage and promote better team performance. Nevertheless, these literatures provide important information. Project teams are temporary and rely substantially on drawing people and leadership from the rest organization. These teams are therefore vulnerable to the general norms applicable in the organization. The dimensions for effective teamwork thus send important messages to the type of behaviour that should be supported by the organizational culture.

Kharbanda (1990:23) stresses that team leaders should be leadership rather than management oriented. Kharbanda (1990: 88-89) claims that past research have shown that democratic, participative, and active (as opposed to *laissez-faire*) leadership styles correlate positively with teamwork.

The following is a list of conditions that Katzenbach and Smith (1993) associate with having a positive impact on team performance:

- team participants must trust each other (Katzenbach & Smith, 1993: 109);
- teams need direction and meaningfulness (Katzenbach & Smith, 1993: 119);

- senior management's visible support is necessary (Katzenbach & Smith, 1993: 121);
- rewards and recognition must reflect teamwork (Katzenbach & Smith, 1993: 126); and
- team goals should support company goals (Katzenbach & Smith, 1993: 193).

Mueller (1994: 389) advocates the following conditions for an appropriate team culture:

- identification with company;
- having a common outlook;
- solidarity between employees;
- climate of trust;
- commitment; and
- shared goals across levels of organization.

Gray and Larson (2000: 294) used earlier work by Schein (1969) and Likert (1961) to come up with the following conditions for successful teamwork:

- members share a common purpose and objectives;
- individual talents and expertise are recognized and members are allowed to take the lead when their skills are relevant at a particular point in time;
- roles are balanced and facilitate both task accomplishment and work towards team cohesion and morale;
- energy is spent toward solving problems and not allowed to be sapped by interpersonal struggles;
- there is freedom to express differences of opinion;
- risk taking is encouraged and mistakes are tolerated as learning opportunities instead of being viewed as grounds for punishment;
- members set high standards for themselves and they encourage and support each other; and

- members identify with the team and they experience team participation as an important path of personal growth.

McDonough (2000: 232) empirically found several factors to be associated with the performance of cross-functional product development teams, namely the quality of team leadership, the importance of having goals set for the team, cooperation at team level, and to a lesser extent support by senior management, empowerment of the team, and team commitment.

### 7.5.5 The nature of project leadership

Much has also been written about appropriate leadership styles for project managers, and also the negative conditions associated with the project manager's position. The circumstances around project leadership offer important pointers for evaluating which dimensions of organizational culture should have an important impact on project management.

Cleland (1995: 86) emphasizes that project management means the accomplishment of results through people. Similarly, Kerzner (1998a: 10) recognizes the project manager's role as one that strongly involves the integration and coordination of people's work; the project manager therefore strongly depends on communicative and interpersonal skills. Cleland (1995: 87) puts further focus on the importance of effective communication, both from the project leader and from the team members, to maintain commitment to project success.

Pinto (2000: 85) points out that project managers traditionally lack a stable power base in organizations. Typical factors listed by Pinto (2000: 86) are the weak authority positions of project managers, the unstable commitment of resources, insufficient top management support and difficult line managers.

Project leadership therefore strongly relies on the use of influence as a power base for getting project performance (Pinto, 2000: 87). Pinto points out that high visibility projects (e.g. a Boeing program or the Channel Tunnel) normally lend a high degree of influence to project managers, but state that not all project managers enjoy this kind of advantage. Most project managers have to execute projects of far lesser status.

The relatively weak authority of the project manager leads to an emphasis on the involvement of top management in project leadership. Kerzner (1998a: 17) asserts that, because line and project managers are on equal terms, the use of project sponsors at top management level is strongly advocated, especially for times of project difficulty. Kerzner (1998a: 11) also warns that restraints being placed by the organization will often lead to conflict. Top management therefore needs to be involved, especially in setting priorities among projects.

The leadership styles of project managers also receive substantial attention from project management authors and researchers. Cleland (1995: 87), for instance, associates project leadership with creating a strong project vision; also with aligning team members to be motivated toward the vision; and with negotiating the commitment of stakeholders to support the accomplishment of the vision.

Keller (1992) conducted a study to research the impact of transformational leadership on the performance of research and development project groups; transformational leadership was assessed as charismatic leadership and intellectual stimulation (see Keller, 1992: 491). Keller's (1992: 498-499) findings highlight some interesting points about leadership styles in a research and development project environment:

- transformational leadership is an important predictor of project quality, and more so for the research phase than for the development phase;
- initiating structure is a stronger predictor of project quality during the development phase as compared to the research phase; and
- there is a substantial correlation between transformational leadership and consideration (consideration emphasizes participation and relationships).

An empirical study by Norrgren and Schaller (1999: 382) found that a positive team climate was associated with high scores on all three leadership styles tested, namely: *production-centered* leadership (initiating structure); *employee-centered* leadership (consideration); and *change-centered* leadership. These results are largely compatible with Keller's (1992) study.

Similar findings are also reported by Thite (1999: 259) in a study amongst information technology project managers. Transformational leadership related positively to project

success. Certain transactional leadership variables, namely the emphasis on reward based on performance and the active component of management-by-exception (proactively monitoring), also showed positive association. The passive application of management-by-exception (reactively responding) showed a negative association with project success.

It appears that project management performs better when subjected to a balanced application of leadership styles, and even that different phases of projects can demand the emphasis to change from one style to another. A study conducted by Tatikonda and Rosenthal (2000) also found the need for a balanced perspective in the management of projects. Their research empirically examines the impact of both firmness (operationalized as structure on the macro project level) and flexibility (operationalized as flexibility and autonomy at the working level) on project execution (Tatikonda & Rosenthal, 2000: 420). Their findings showed that both firmness and flexibility lead to better project execution, and that these are separate dimensions that can coexist (Tatikonda & Rosenthal, 2000: 417).

### 7.5.6 Typical cultural obstacles to effective project management

Another way in which authors address the influence of the organizational environment or culture on project management, is by pointing out what conditions obstruct smooth project management functioning. Many authors, for example, draw attention to the difficult relationship between functional and project managers. Pitagorsky (1998: 7) saw the relationship and role distinction between line and project managers as critical issues in preparing the organization for project management.

Other authors have made similar comments, for example that functional managers may view project managers as a threat to their status and visibility (Brown & Labuschagné, 2000: 39; Katz & Allen, 1985: 83); also the perception by functional managers that their authority base gets eroded by project managers (Larson & Gobeli, **1**987: 138).

Strongly connected to this conflicting relationship is the traditional preoccupation by organizations to have all work carried within the jurisdiction of the functional hierarchy. According to Pitagorsky (1998: 11), functional departments often have a narrow and discipline-centered attitude instead of seeing the holistic picture. The Sherman, *et al*. (1996: 25) case study recognized factors such as the unsupportive culture of the functional departments, their lack of flexibility, their view of themselves as the centre of project activity,

and their failure to attend to the reality of the market, as important obstacles to the project management function. Brown (1999a: 73) adds the aggravating effect of organizations that rely on departmental budgeting and costing and that ignore the need to provide for project-based costing.

Brown and Labuschagné (2000: 38) pointed out that, because formal hierarchical roles may often be immaterial to how roles in project teams are assigned, strong forms of hierarchical awareness may be a threat to achieving a project supportive culture.

Johns (1999: 50) highlighted other typical problems that may prevent organizations from effectively supporting project management, namely:

- ignorance by top management of what is happening;
- cumbersome communication channels;
- internally focused thinking; and
- lack of alignment between the values endorsed by the organization, and those believed and practiced by members.

## 7.6 FURTHER LITERATURE RESEARCH

In the next part of this chapter the findings of a more in depth literature research are presented. The headings in the following sections, which serve to group the findings, correspond to the dimensions of culture proposed in the previous chapter. It is again reiterated that the choice of cultural dimensions has been influenced by the findings of the project management literature, as has the grouping of project management themes been influenced by accepted cultural dimensions.

## 7.7 CULTURAL ORIENTATIONS EXTRACTED FROM THE PROJECT MANAGEMENT LITERATURE

### 7.7.1 Organizational direction

Several authors assert that project management should take place in an environment characterized by a clear focus and direction. Projects should clearly form part of the organization's strategy and direction. A list of statements, some that explicitly call for an organization that has clear focus, or strategy and direction, others that can be associated with an organizational environment where there is organization-wide direction, is contained in Table 7.3.

### 7.7.2 Focus on the customer as basis of competitiveness

The nature of project management as a process of developing a solution for a customer or user, demands a high level of interface between the project team and the customer entity. Many authors give recognition to this and also suggest that organizations that have a basic mindset of focusing on the customer would better facilitate this need of project management. Project management is further associated with an external focus. This is implied by the emphasis on managing projects as a business and on paying attention to the interests of external stakeholders. A list of statements found in the literature, which address this aspect of project organizations, is shown in Table 7.4.

**Table 7.3: The need for organizational direction**

| | |
|---|---|
| Clearly defined vision of where organization is heading | Frame (1999: 193) |
| Lack of strategy and clear direction at higher levels (negative factor) | Maylor (2001: 93) |
| Shared goals across levels of organization | Mueller (1994: 389) |
| Availability of strategic direction to functional and project activity | Cleland (1999: 85) |
| Focus by reducing projects - also less projects per person at given time | Graham & Englund (1997: 55-56) |
| Unknown values, direction not sensed by employees, "passionless" environment (negative factor) | Frame (1999: 36) |
| Aligned company values - promoted and lived by members | Johns (1999: 50) |
| Hollow vision/mission statements that are not practiced (negative factor) | Frame (1999: 36) |
| Teams need direction and meaningfulness | Katzenbach & Smith (1993: 109) |
| Members have a common outlook | Mueller (1994: 389) |
| Strategic direction from project sponsor in senior management | Archibald (1992: 5-8) |
| Projects selected to support strategic vision and goals | Cleland (1999: 13) |
| Project management activities embedded in organizational goals | Frame (1999: 183) |
| Emphasize the link between strategy and projects | Graham & Englund (1997: 6) |
| Team members share common purpose | Gray & Larson (2000: 294) |
| Projects have visibility in organization | Kerzner (2000: 56) |
| Senior management must set and articulate project goals | Posner (1987: 52) |
| Unclear project objectives and directions (negative factor) | Thamhain & Wilemon (1987: 133) |
| Successful project teams have clear goals | Fleming & Koppelman (1996: 165) |
| Project priorities to be uniform through organization | Graham & Englund (1997: 36) |

### 7.7.3 A clear and rational basis of decision-making

There is support in the project management literature that organizations should take their key decisions on a rational basis. Decisions should serve the interests of the organization, and not political concerns and personal interests. The importance of this dimension could be deducted from authors who directly call for a rational type organization, but also from other statements specifying the importance of projects to be selected on organizational merit, the setting of realistic project targets, and the backing of project decisions by the necessary resource base.

The list containing statements that can be associated with a rational type organization is shown in Table 7.5.

**Table 7.4: An external and customer orientation**

| | |
|---|---|
| Orientation towards customers at organizational level | Gareis (2000: 18) |
| Entrepreneurial vision, see organization as an enterprise as opposed to a corporation | Dinsmore (1999: 213) |
| Customer expectations are driving force towards project management | Kerzner (2000: 51) |
| Emphasis on networking with clients and suppliers | Gareis (2000: 18) |
| Internally focused thinking (negative factor) | Johns (1999: 50) |
| Customer involvement | Cicmil (1997: 394-395) |
| Projects must have customers (*external or internal*) | Cleland (1999: 99) |
| Projects must add value to customer | Cleland (1999: 99) |
| Project manager must have client / customer orientation | Graham & Englund (1997: 164) |
| Objectives defined primarily in business terms and secondly in technical terms | Kerzner (2000: 161) |
| Culture of business education promoted amongst workers | Cleland (1999: 279) |
| Project manager runs project as an own business | Frame (1994: 12) |
| Project manager highly trained in business (entrepreneurial) skills | Frame (1994: 12, 51) |
| Project manager must be trained / have business skills | Graham & Englund (1997: 164) |
| Open systems orientation - responsive to external environment | Gray & Larson (2000: 236) |
| Importance of stakeholder management also in managing projects | Cleland (1999: 149) |
| Focus on stakeholders and stakeholder management down to project level | Dinsmore (1999: 59) |

The need for rationality has also been highlighted as one of the dimensions in the definition of project management effectiveness. The importance of rational decision-making within project management lends further support for the need for the organization to have a culture of rational decision-making.

**Table 7.5: A rational basis of organizational decision-making**

| | |
|---|---|
| Rational decision processes as opposed to being dominated by political considerations | Frame (1999: 34) |
| Self-interest decision makers (negative factor) | Frame (1999: 34) |
| Prioritizing of projects should avoid the politicizing of resource allocations between projects | Pitagorsky (1998: 15) |
| Companies with a defined corporate credo to set priorities for decision making | Kerzner (2000: 171) |
| Ongoing tension over resources (negative factor) | Maylor (2001: 93) |
| Clearly defined decision channels | Kerzner (1995: 504) |
| Shifting goals and priorities (negative factor) | Thamhain & Wilemon (1987: 133) |
| Project must give satisfactory ROI to organization | Cleland (1999: 99) |
| Projects measurable in terms of strategic contribution - financial, customer value | Dinsmore (1999: 40) |
| Project management can demonstrate value added to company | Dinsmore (1999: 51) |
| Controversy over project desirability (negative factor) | Gray (2001:108) |
| Projects has defined cost and benefits associated | Kerzner (2000: 57) |
| Defined project ownership - who budgets, whose strategic goals are to be met | Cleland (1999: 108) |
| Projects strategically selected | Kerzner (2000: 120) |
| Project selection to support corporate strategies | Cleland (1999: 100) |
| Strong alignment between projects and strategic objectives | Dinsmore (1999: 33) |
| Unrealistic planning and scheduling | Archibald (1992: 18) |
| Realism in planning | Cicmil (1997: 394-395) |
| Set unrealistic deadlines (negative factor) | Posner (1987: 51) |
| Lack of review process - resulting in promise more than can be delivered | Frame (1999: 179) |
| Inadequate resource provision (negative factor) | Posner (1987: 51) |
| Insufficient resources (negative factor) | Thamhain & Wilemon (1987: 133) |
| Changes in goals and resources (negative factor) | Posner (1987: 51) |
| Undependability of resource commitments (negative factor) | Pinto (2000: 86) |
| Proper selection criteria for project managers | Archibald (1992: 18) |
| Rational selection process in appointing project managers | Graham & Englund (1997: 35) |

### 7.7.4 An organization that is integrated across its functions

Project management as a cross-functional activity strongly depends on collaboration between departments. The literature strongly advocates the need for organizations to be integrated and collaborative across departments, and for teamwork to be established as a strategic competitiveness. Evidence is contained in Table 7.6.

**Table 7.6: Organizational integration and team emphasis**

| | |
|---|---|
| The importance of the organization to foster teamwork and cross-functional collaboration | Frame (1999: 8) |
| Organizations where there is little interdepartmental cooperation (negative factor) | Ford & Randolph (1992: 282) |
| Culture that encourages cooperation | Dvir & Ben-David (1999: 151) |
| Cooperative culture | Kerzner (2001: 81) |
| Alignment of organization across boundaries | Laufer, Denker & Shenhar (1996: 198) |
| Foster climate of multi-disciplinary teamwork | Cleland (1999: 421: 421) |
| Emphasis on collaboration in organization | Donnellon (1993: 391) |
| Organization encourages collaboration | Frame (1999: 9) |
| Cooperation between units | Gray & Larson (2000: 236) |
| Conflicts between departments and functions (negative factor) | Posner (1987: 51) |
| The importance of teamwork is supported by organization | Gareis (2000: 18) |
| Reward interdepartmental cooperation | Graham & Englund (1997: 64) |
| Strong team emphasis in organization | Gray & Larson (2000: 236) |
| Recognize teamwork as key building block in organization | Johns (1999: 53) |
| Emphasis on teamwork and cooperation in organization | Kerzner (2000: 165) |
| Culture must promote teamwork, trust, cooperation | Kerzner (2000: 219) |
| Team focus in organization - teams are held accountable and team performance appraised | Donnellon (1993: 389-390) |
| Reward for team performance | Frame (1999: 155) |
| Reward and recognition must reflect teamwork | Katzenbach & Smith (1993: 126) |
| Individual reward practices working against organizational goals - wrong measurement (negative factor) | Frame (1999: 37-38) |
| Teamwork as source of personal growth | Gray & Larson (2000: 294) |

Support for high levels of organization integration can also be inferred from statements that emphasize collective roles and draw attention to the negative effect of a too strong emphasis on departmental performance and competitiveness. Examples of these statements are contained in Table 7.7.

**Table 7.7: A collective focus**

| | |
|---|---|
| Discipline centered departments may be too narrow in focus and attitude (potential problem) | Pitagorsky (1998: 11) |
| Non-cooperative functional management (negative factor) | Pinto (2000: 86) |
| Culture of sharing results, resources and rewards | Cleland (1999: 255) |
| Emphasize collective roles | Cleland (1999: 486: 486) |
| Resources are readily shared across the organization | Hurley (1995: 60-62) |
| View organization (as a whole) as competitive advantage | Gareis (2000: 18) |
| Energy focused on solving problems - not drained by interpersonal struggles and individual competitiveness | Gray & Larson (2000: 294) |
| Power struggles and conflict (negative factor) | Thamhain & Wilemon (1987: 133) |
| Power sharing - people should not hold on to power and protect their own turf | Hurley (1995: 60-61) |

A further aspect is that project management should not be a stand alone function, but be integrated as part of the main stream activity of the organization. Importantly, the organization should pay explicit attention to the balance of authority between functional and project managers. Statements that address this concept are contained in Table 7.8.

**Table 7.8: Project management as an integrated activity**

| | |
|---|---|
| Reward good project work | Graham & Englund (1997: 85) |
| Overlap between individual work goals and their project goals | Randolph & Posner (1988: 69) |
| Project management as an integrated strategic entity, not separate from rest of organization | Cleland (1999: 86) |
| High level of integration management (project interfacing culture) | Dinsmore (1999: 60) |
| Stability in project team participation | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Coherent, coordinated and strategy driven project management | Maylor (2001: 94) |
| Functional managers view project manager as threat to status and growth (negative factor) | Brown & Labuschagné (2000: 39) |
| Balance of power between function and project | Cleland (1999: 85) |
| Functional management attitude should be open - they should not be threatened by shift in visibility and status | Katz & Allen (1985: 83) |
| Treat line and project managers as equals in respect of authority | Kerzner (2000: 109) |
| Foster shared accountability between project and resource managers | Kerzner (2000: 218) |
| Functional management should not be resistant to project managers eroding their authority base | Larson & Gobeli (1987: 138) |

### 7.7.5 A communication philosophy that promotes openness, transparency and trust

One of the project management effectiveness dimensions specifies the need for good communication within the project team. This suggests the need also to have an organization where the importance of communication and the distribution of information are valued, and where the openness of communication also tolerates conflict and the freedom to air views. Supportive statements from the literature are shown in Table 7.9.

There are also other aspects related to an organization that is characterized by open communications. Trust, for instance, plays a prominent role in project management. Trust in organizations is associated with organizations that are transparent and where communication flows freely. The other is the emphasis at higher management levels to build an organization where purpose and goals are communicated to lower levels. In a project management context, the need for project participants to be informed of senior management's intentions and goals

for projects is also seen as important. Table 7.10 highlights examples of statements supporting these aspects.

**Table 7.9: Open communication style**

| | |
|---|---|
| Culture must allow for effective communication | Kerzner (2000: 219) |
| Good communication that spans across functional borders | Randolph & Posner (1988: 70) |
| Healthy communication ambience - both at project and organizational level | Dinsmore (1999: 202) |
| Poor communication in organization (negative factor) | Kerzner (1995: 38) |
| Open communication style | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Cumbersome communication (negative factor) | Johns (1999: 50) |
| Good communication - open and free-flowing | Laufer, Denker & Shenhar (1996: 198) |
| Communication breakdown (negative factor) | Posner (1987: 51) |
| Good communications | Cicmil (1997: 394-395) |
| Information is shared | Hurley (1995: 60-63) |
| Culture of openness | Frame (1999: 187) |
| Access needed to decision making information, handle customer queries, etc | Frame (1999: 109) |
| Mechanism to distribute lessons learnt from projects | Dvir & Ben-David (1999: 151) |
| Vertical communication flow (and specifically upwards) | Thamhain & Gemmil (1977: 222) |
| Openness to carriers of bad news | Frame (1999: 31) |
| Openness to air views | Gray & Larson (2000: 236) |
| Conflict tolerance | Gray & Larson (2000: 236) |
| Freedom to express differences of opinion | Gray & Larson (2000: 294) |
| Free expression of ideas as part of a general climate of voluntarism | Gray (2001: 108) |
| May question and challenge decisions by seniors | Gray (2001: 111) |

**Table 7.10: Trust and goal visibility**

| | |
|---|---|
| Culture of trust and respect is needed for high-performance team functioning | Cleland (1999: 490) |
| Culture of trust and professionalism | Graham & Englund (1997: 75) |
| Team participants must trust each other | Katzenbach & Smith (1993: 109) |
| Climate of trust | Mueller (1994: 389) |
| Mistrust for senior management (negative factor) | Gray (2001: 108) |
| Vision and goals to be well communicated to project level | Archibald (1992: 13) |
| Perceived importance of the work by team members / members identify with project goals | Dvir & Ben-David (1999: 151) |
| Objectives clearly communicated | Kerzner (1995: 503) |

### 7.7.6 Decision-making is decentralized

The need for autonomy and a relatively high level of authority for project managers and other key project team members is also frequently advocated in the literature. Table 7.11 contains citations that support this aspect of an organization.

**Table 7.11: Decentralization of decision-making**

| | |
|---|---|
| High levels of authority vested in project management function | Dinsmore (1999: 51) |
| Delegation of authority - technical issues to be managed by professionals | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Project manager can make majority of decisions independently | Frame (1994: 11) |
| Necessary authority to project managers | Graham & Englund (1997: 86) |
| Project manager has responsibility for the full project | Kerzner (2000: 315) |
| Delegation of sufficient authority to make decisions to project manager | Kerzner (2000: 318) |
| Maximum decentralization of decisions | Cleland (1999: 486) |
| Delegate authority to team members | Fleming & Koppelman (1996: 165) |
| Decisions made in decentralized way | Frame (1999: 6) |
| Decision-making is delegated to the lowest possible level of authority | Hurley (1995: 60-61) |
| Decentralization of decision-making | Kerzner (2001a: 81-82) |

### 7.7.7 Organization promotes a supportive management style

One of the more frequently mentioned factors associated with the strength of project management in an organization is top management support for projects as well as for the project management process. The availability of project sponsors at senior levels is one facet that gets extensive cover in the project management literature. It is anticipated that organizations that practice a supportive and involved management style, and in particular right up to the top levels, should be more amenable to this need. Support for this aspect of organizational support is shown in Table 7.12.

**Table 7.12: A supportive senior management style**

| | |
|---|---|
| Top management commitment with implementing project management | Brown (1999a: 76) |
| Upper managers and project managers work as team | Graham & Englund (1997: 6) |
| Top management ignorance (negative factor) | Johns (1999: 50) |
| Senior management support for projects | Kerzner (1995: 504) |
| Projects have displayed enthusiasm by senior management | Kerzner (2000: 318) |
| Upper management attention and management - must deal with stress and dual authority problem | Ford & Randolph (1992: 277) |
| Uninvolved, disinterested senior management (negative factor) | Thamhain & Wilemon (1987: 133) |
| Upper management understand and manage according to project norms / techniques | Graham & Englund (1997: 86) |
| Senior management visible support is necessary for teamwork | Katzenbach & Smith (1993: 121) |
| Project manager involved in strategic project selection | Frame (1994: 7) |
| Contribute to decisions made by senior people | Gray (2001: 110) |
| Access to powerful figures | Dill & Pearson (1984: 145) |
| Importance of sponsor external to project manager | Archibald (1992: 74) |
| Importance of the sponsor | Dinsmore (1999: 35) |
| Criteria for good sponsorship - vested interest, skill in PM, influence, rapport with project team | Dinsmore (1999: 35) |
| Sponsor at top management level | Donnellon (1993: 391) |
| Project sponsor very important | Graham & Englund (1997: 60) |
| Project sponsorship is mandatory | Kerzner (2000: 163) |
| Sponsor needed to create environment for project teams to be effective | Frame (1999: 7) |
| Organization support for projects | Johns (1999: 53) |

**Table 7.13: Supportive and participative styles at working levels**

| | |
|---|---|
| Leadership management instead of directing | Cleland (1999: 486) |
| Team leaders must be leadership rather than management oriented | Kharbanda (1990: 23) |
| Managers as role models | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Involvement with workers by managers | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Involvement of manager in day to day activities | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Relationship and influence oriented | Gadeken (2000: 250) |
| Management focus must have people orientation | Gray & Larson (2000: 236) |
| Participative management styles | Cleland (1999: 486) |
| Allow more autonomy and participation of individuals | Ford & Randolph (1992: 277) |
| Climate of voluntarism (member participation in goal setting) | Gray (2001: 108) |
| Involvement and participation in setting own goals and targets | Gray (2001: 109) |
| Suggestions and ideas are sought and treated with respect | Gray (2001: 112) |
| Participative decision-making | Hurley (1995: 60, 61, 66) |
| People and their ideas are valued | Hurley (1995: 60-62) |
| Democratic and participative styles correlate with teamwork | Kharbanda (1990: 88-89) |
| Professionally stimulating work environment for good teamwork | Cleland (1999: 438) |
| Atmosphere of partnership, involvement and identification by team members | Dvir & Ben-David (1999: 151) |
| Members identify with the team | Gray & Larson (2000: 294) |
| Team members encourage and support each other | Gray & Larson (2000: 294) |
| Support and collaboration - people help and support each other | Hurley (1995: 60-61) |
| Place focus on both cohesion and morale alongside task accomplishment | Gray & Larson (2000: 294) |
| Empowerment of employees at organizational level | Gareis (2000: 18) |
| Empower and share power - people should perceive they are contributing to project success | Randolph & Posner (1988: 72) |
| Project manager empowerment | Kerzner (2001a: 81-82) |
| Empower people | Cleland (1999: 486) |
| Get commitment of people | Mueller (1994: 389) |
| Team members uncommitted (negative factor) | Posner (1987: 51) |
| Ownership of the project | Randolph & Posner (1988: 70) |

Project management is further associated with supportive, democratic and participative leadership styles at lower levels, and not with a directive style. The emphasis should be on leading rather than managing people, and on relationships, team building, getting participation and commitment, and empowering workers. These are shown in Table 7.13 on page 157.

It therefore appears important that the organization encourages a culture where leadership styles of participation, support, and empowerment are practiced at all levels.

### 7.7.8 Flexibility of organizations

Another area that receives attention in the literature is the issue of organizations that are too structured and too bureaucratic in their orientation. Several authors show a preference for a more flexible organization, as shown in Table 7.14.

**Table 7.14: Flexibility in organizational structure**

| | |
|---|---|
| Move away from bureaucratic organizations | Archibald (1992: 22) |
| Limitations of vertically structured organization - must be flatter structure | Cleland (1999: 255) |
| Bureaucratic character is negative for matrix management - is restricted to vertical reporting lines | Ford & Randolph (1992: 282) |
| Flatter organization structure | Gareis (2000: 18) |
| Organic organization, centered around teams, not bureaucratic | Graham & Englund (1997: 14) |
| No prescribed structure, but should be flat and not tall and hierarchical | Kerzner (2000: 144) |
| Looser and less structured organization is typical of project management | Dinsmore (1999: 59) |
| Move away from command and control (vertical) authority | Cleland (1999: 255) |
| Culture of accepting change as opposed to stability | Cleland (1999: 486) |
| Organizations that are not open to change (negative factor) | Ford & Randolph (1992: 282) |
| Openness to organizational change | Gareis (2000: 18) |
| Culture of innovation, transform objectives into results | Cleland (1999: 421) |

The literature also emphasizes other aspects of flexibility, such as flexibility in how authority is exercised and accepted, and that the organization is comfortable with risk, change and creativity. See for example Table 7.15.

**Table 7.15: Flexibility with authority, innovation and risk-taking**

| | |
|---|---|
| Flexibility with leadership - accept leadership from different people when relevant | Gray & Larson (2000: 294) |
| Low hierarchy awareness - participants must be able to accept leadership from person on lower organizational rank | Brown & Labuschagné (2000: 38) |
| Use of de facto authority through use of knowledge, expertise, interpersonal skills as opposed to de jure | Cleland (1999: 251) |
| Team members reporting is in hands of project leader | Fleming & Koppelman (1996: 165) |
| Employee resistance - more than one boss (negative factor) | Kerzner (1995: 33) |
| Use of legitimate power (negative factor) | Thamhain & Gemmil (1977: 222) |
| Willingness to consider changes and new approaches | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Flexibility in management - encouraging new ideas | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Systemic and innovative thinkers | Gadeken (2000: 250) |
| Risk tolerance | Gray & Larson (2000: 236) |
| Encourage risk taking - tolerance for mistakes within teams | Gray & Larson (2000: 294) |
| Project manager must have risk management skill | Kerzner (2000: 170) |
| Risk taking and creativity are encouraged | Randolph & Posner (1988: 72) |
| Readiness to accept new ideas after design freeze | Dvir & Ben-David (1999: 151) |
| Informal project management as opposed to highly bureaucratic style of project management | Kerzner (2000: 144) |
| Flexibility at working level of projects | Tatikonda & Rosenthal (2000: 419) |
| Interesting and stimulating work | Thamhain & Wilemon (1987: 133) |

### 7.7.9 The organization has a people orientation

Project management is also associated with putting a strong emphasis on the human side of management, and the value of people. Therefore it is anticipated that project management should function more easily in organizations that emphasize a Theory Y type mindset of their employees, and that value people not only for the work they deliver. A Theory Y approach sees people as willing to perform given the opportunity, as opposed to Theory X which assumes people are incapable of performing if not coerced and directed (see for example Reigle, 2001: 4). Many factors, advocated by the literature as supporting project management, can be associated with an organization that has a strong people orientation. Table 7.16 shows citations that support the need for organizations to pay attention to, for example, behavioural

skills (including teambuilding) for their leaders, employee cohesion, the personal commitment of people, employee identification with the organization, and career prospects for their people.

**Table 7.16: A people orientation**

| | |
|---|---|
| Theory Y instead of Theory X management orientation | Cleland (1999: 486) |
| A "macho environment" (heavy task oriented) is not sustainable and employees soon leave | Frame (1999: 36) |
| Climate of threat - use of threat or coercion to cause one to act (negative factor) | Gray (2001: 108) |
| Climate of threat - level of uncertainty and unfairness (negative factor) | Gray (2001: 108) |
| Use of coercive power (negative factor) | Thamhain & Gemmil (1977: 220) |
| Appropriate leadership skills (e.g. teamwork) shared by resource managers | Cleland (1999: 438) |
| Leaders have appropriate people-related skills | Dinsmore (1999: 51) |
| Project manager must have behavioural skills (alongside integration management skills) | Kerzner (2000: 168 - 170) |
| Strong emphasis on behavioural reasons for project failure (morale, staff commitment, productivity, human relations) | Kerzner (2000: 175) |
| Teambuilding expertise | Dill & Pearson (1984: 145) |
| Leadership skills for effective teams | Cicmil (1997: 394-395) |
| Out of work cohesion building of teams | Dvir & Ben-David (1999: 151) |
| Existence of an *esprit de corps* in the project team | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Member identity with organization | Gray & Larson (2000: 236) |
| Identify with company | Mueller (1994: 389) |
| Clear career prospects for individuals working on projects | Archibald (1992: 18) |
| Poor job security (negative factor) | Thamhain & Wilemon (1987: 133) |
| Project management as career path | Brown (1999a: 75) |

### 7.7.10 An organization that places an emphasis on personal competency and training

The nature of project management involves both a complex system of methodologies, procedures, and terminologies, and a work content that is uncertain, novel, and often on the forefront of technology. Competency therefore plays an important role in the project management organization. Project management authors express the need for organizations to

have cultures that encourage learning and competency, for example those shown in Table 7.17.

**Table 7.17: Culture of learning and competency**

| | |
|---|---|
| Culture of a learning organization to escape obsolescence | Cleland (1999: 482) |
| Organizational learning | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| General level of competence in doing daily tasks | Frame (1999: 42) |
| People and career development through formal and informal training and encouragement of learning | Hurley (1995: 60-61) |
| Sufficient opportunities for training and development | Frame (1999: 187) |
| High class management | Laufer, Denker & Shenhar (1996: 198) |
| Focus on competence in training through competence assessment | Dinsmore (1999: 153) |
| Organization skilled in competency models | Dinsmore (1999: 160) |
| Room for professional growth | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Identify individual talents and exploit | Gray & Larson (2000: 294) |
| Professional growth potential | Thamhain & Wilemon (1987: 133) |
| Policy of reviewing mistakes and learn from it | Kerzner (2000: 39) |
| Learning from project experience | Randolph & Posner (1988: 69) |

They also emphasize the need for an adequate skills basis and extensive training for project management. Table 7.18 highlights the need for organizations to place a high premium on the training of project managers, project staff, as well as the rest of the organization in dealing with project management.

**Table 7.18: The need for project management training**

| | |
|---|---|
| Strategic competence in project management as competitive advantage | Maylor (2001: 94) |
| Extensive education and training necessary | Dinsmore (1999: 137) |
| Training must include coaching and mentoring | Dinsmore (1999: 149) |
| Prepare and train individuals for changed structure, command lines, positions brought by project management | Dinsmore (1999: 59) |
| Prepare mindset and develop competent project staff | Dinsmore (1999: 59,60) |
| Strategically invest in training and then also support the newly acquired skills | Graham & Englund (1997: 23) |
| Ongoing coaching and direction | Johns (1999: 53) |
| Lack of training (negative factor) | Kerzner (1995: 39) |
| Qualified project team members | Thamhain & Wilemon (1987: 133) |
| Importance of training in appropriate skills | Kerzner (2000: 173) |
| Project manager regarded as professional position | Graham & Englund (1997: 132) |
| Selection and training of project manager | Kerzner (1995: 504) |
| Project managers must have technical and project management skills | Kerzner (2000: 168) |
| Experienced (engineering) management personnel | Thamhain & Wilemon (1987: 133) |
| Proper technical direction and leadership | Thamhain & Wilemon (1987: 133) |

### 7.7.11 The organization should provide formal systems and process support

Project management is on the one hand associated with a high level of flexibility, but on the other hand, with being a structured and systematic approach that emphasize the need to keep to strict targets, and to involve extensive control systems, processes and procedures. Table 7.19 contains citations that demonstrate the importance for the organization to have a mindset that adequately supports its functioning with standardized processes and systems, and prefers an overall discipline in its work practices.

A further aspect is the need for organizations to be meticulous in providing information support systems that are tailored to the needs of the organization, rather than just an overly general ‘one-size fits all’ approach. Table 7.20 emphasizes the importance of paying specific attention to the nature of information and accounting systems to support project management.

**Table 7.19: Organizational support systems and processes for project management**

| | |
|---|---|
| Organization must have a process orientation | Gareis (2000: 18) |
| Means vs. ends orientation at organization culture level - focus on means (processes) as well as ends (results) | Gray & Larson (2000: 236) |
| Information infrastructure to do jobs | Frame (1999: 9) |
| Need a good formal information and communication system | Laufer, Denker & Shenhar (1996: 198) |
| Organization must have strong basic management processes | Cleland (1999: 98) |
| Faster, cheaper, better approach to doing business | Dinsmore (1999: 213) |
| Firmness and structure at macro execution level of projects | Tatikonda & Rosenthal (2000: 419) |
| Project management must have a process orientation - focus on process and not only on the outputs of the process | Brown (1999a: 76) |
| Project management practiced in conscious, systematic fashion, not ad hoc | Frame (1999: 183) |
| Well defined processes and procedures in project management (can be associated with bureaucratic) | Frame (1999: 187) |
| Proficiency in the use of formal project management systems by the organization | Johns (1999: 53) |
| Appropriate systems for accurate scheduling of resources | Pitagorsky (1998: 15) |

**Table 7.20: Dedication of support systems**

| | |
|---|---|
| Information system is process based as opposed to project based (problem for good project management) | Dinsmore (1999: 25) |
| Project management information system also provides data for organizational learning – track performance variances | Graham & Englund (1997: 148) |
| No proper cost accounting down to project level exists | Archibald (1992: 18) |
| Appropriate horizontal output based costing as opposed to departmental based | Brown (1999a: 73) |
| Lack of activity-based accounting system that can determine profitability per project is a major problem | Frame (1999: 40) |
| Use activity-based costing models instead of old traditional models to aid strategic project selection | Graham & Englund (1997: 45) |
| Proper horizontal cost accounting system to have grips on true project costs | Kerzner (2000: 7) |

### 7.7.12 Orientation towards pro-actively managing organizational performance

The project management literature strongly suggests that the environment for project management should be energetic and active, should take pro-active steps to ensure performance, and is generally task and results driven. The organization should be characterized by a clear definition of objectives and taking active measures to control the accomplishment of these objectives. It is hard to think of project management creating this mentality in managing a project when project participants are drawn from an organization where the style is generally *laissez-faire* and not encouraging of a similar work ethic.

Statements from the literature illustrating these concepts are shown in Table 7.21.

**Table 7.21: Performance driven organization**

| | |
|---|---|
| Must be a focus on task accomplishment (in organization) | Gray & Larson (2000: 294) |
| Organization competitiveness is a driving force towards project management | Kerzner (2000: 53,175) |
| Active as opposed to laissez-faire leadership correlate positively with teamwork | Kharbanda (1990: 88-89) |
| Culture of innovation - emphasizes transforming objectives into results | Cleland (1999: 422) |
| Teams function better in organizations with strong performance ethic | Katzenbach & Smith (1993: 175) |
| There must be emphasis on control (should be moderately flexible) | Gray & Larson (2000: 236) |
| Proactive management style | Kerzner (2000: 164) |
| Solve problems early, quickly and cost-effectively | Kerzner (2000: 39) |
| Weak planning (negative factor) | Posner (1987: 51) |
| Danger of complacency - decline in training / lessons learned | Kerzner (2000: 175) |
| Poorly defined performance criteria (negative factor) | Kerzner (1995: 38) |
| Organizational goals, values, objectives understood by project team members | Kerzner (2000: 213) |
| Unclear goals and direction (negative factor) | Posner (1987: 51) |
| High standards are set by team members themselves | Gray & Larson (2000: 294) |

It could also be expected that a pro-active and performance driven organization will shape a culture where clear definitions of responsibility and accountability are the norm, and where

role ambiguity, for example, between function and project managers, are not allowed to persist. Other aspects of project management that points to this nature of organization are emphases on explicit deadlines, work challenge, and rewarding people based on performance. Citations from the literature to support these are contained in Table 7.22.

**Table 7.22: Managing for performance**

| | |
|---|---|
| Develop authority, responsibility and accountability relationships | Cleland (1999: 85) |
| Poorly defined responsibility areas (negative factor) | Kerzner (1995: 38) |
| Unclear authority situation (negative factor) | Pinto (2000: 86) |
| Project manager given overall and defined project authority | Kerzner (1995: 241) |
| Project manager must be given full profit / loss responsibility | Frame (1994: 7) |
| Project manager must have full life cycle responsibility | Frame (1994: 7) |
| Clarity in functional managers role | Donnellon (1993: 388) |
| Reporting level of project managers on par with functional managers they interact with - cuts both sides | Kerzner (2000: 144) |
| Rest of organization should be held accountable for their project commitments | Pitagorsky (1998: 13) |
| Strong project milestone / deadline structure | Lindkvist, Söderlund & Tell (1998: 949) |
| Exact specification of tasks by managers | Dvir, Lipovetsky, Shenhar & Tishler (1998: 930) |
| Provide challenging work for project teams | Kerzner (1995: 503) |
| Work challenge | Thamhain & Gemmil (1977: 223) |
| Reward criteria - based on performance | Gray & Larson (2000: 236) |
| Reward success or good performance | Randolph & Posner (1988: 72) |
| Recognition of performance | Thamhain & Wilemon (1987: 133) |
| Sophisticated reward systems balanced between individual and team-based rewards, tailored to project skills also | Dinsmore (1999: 186) |

## 7.8 CONCLUSION

This chapter has highlighted the importance of organizational culture to project management. It has also produced substantial evidence to postulate a profile of organizational culture, based on a generic definition of cultural dimensions, as a project management supportive organizational culture. Consequently, the research hypothesis can be formulated to state that organizations that are stronger in respect of these organizational culture dimensions are expected to be more effective in respect of project management.

# CHAPTER 8

## DEVELOPING THE SCALES OF PROJECT MANAGEMENT EFFECTIVENESS AND ORGANIZATIONAL CULTURE

### 8.1 INTRODUCTION

This chapter concerns the development of the research instruments. The processes of advancing from the conceptual constructs developed through the literature studies in previous chapters to the survey questionnaires are described. Both constructs, namely project management effectiveness (dependent variable) and organizational culture (independent variable), are dealt with in this chapter.

### 8.2 GENERAL GUIDELINES TO THE DEVELOPMENT OF THE INSTRUMENTS

Certain researchers have noted important guidelines or items of advice for other researchers to keep in mind in this kind of research. It was believed necessary to consider some of these as specifically relevant for this study project.

Lorsch (1986: 105) warns against tapping culture from the official corporate statements; often these are empty reflections of the popular concepts of corporate culture and excellence that are circulating in the management world. Siehl and Martin (1990: 245) similarly distinguish between the espoused content (what is articulated by management) and enacted content (how people really behave) of culture; it is important for researchers to assess the enacted culture, and not to concentrate simply on the articulated content of a culture.

This principle has been viewed as of particular importance for the culture questionnaire. Questionnaire items should clearly reflect statements about what is actually happening in the organization, and the instructions to respondents must also focus attention away from merely responding in respect of officially promoted company values.

Two other aspects need to be considered in planning a questionnaire survey. Gordon and DiTomaso (1992: 788) draw attention to observations in previous research that management

gives more favourable responses about their organizations than subordinates at lower levels. Glick (1985: 608) stresses the importance of using the same type of informants in the organizations sampled rather than selecting random samples of organization members on all levels; this is to keep the sources of systematic bias more constant across organizations.

In taking advice from these two viewpoints, it has been decided to target the culture survey at a specific level in all organizations, namely:

- middle management;
- senior supervisors; and
- senior functional specialists.

The combination of these three categories has been judged to define a pool of organizational members that that should give a reasonably accurate response about cultural phenomena, mainly because of the following reasons:

- they function in well-connected and key positions in the organization;
- they function in positions where they interface with both senior management levels and with operational levels;
- they typically experience the negative and positive consequences of an organization's culture on the daily workflow in the organization; and
- it is hoped that they will be lesser inclined, compared to higher level managers, to respond too favourably about the organization, in line with the Gordon and DiTomaso (1992: 788) finding cited before.

## 8.3 GUIDELINES FOR QUESTIONNAIRE CONSTRUCTION

The development of questionnaire items was subjected to explicit recommendations and warnings from the literature.

The use of double-barrelled questions or questions that may have two different responses is frequently warned against in the literature (Babbie, 1989: 141; Czaja & Blair, 1996: 73;

Oppenheim, 1992: 126). Another is the double negative which has been found to confuse respondents (Oppenheim, 1992, 126). Some researchers have even found that any negatively worded questions cause confusion and irritation with respondents (Hendriks, Hofstee & De Raad, 1999: 310) and should be avoided. Babbie (1989: 143) similarly advises against the use of any negative items.

Authors also recommend the use of simple wording, specifically the need to avoid words that have ambiguous meanings, as well as the use of short sentences and simple sentence construction (Babbie, 1989: 141; Hendriks, *et al.*, 1999: 310; Oppenheim, 1992: 129).

By far the majority of culture instruments found in the literature use the Likert scale method. Nunnally (1978: 604) provides support by opining that the Likert scales have several advantages over other methods, are simple to construct, and have shown its reliability and ability to produce meaningful results in studies in the past.

An important aspect of the Likert scale that should be carefully considered is the choice of response categories. Czaja and Blair (1996: 73) cautions against using the concept of *agreement*; regardless of the question's content, respondents generally show a tendency to agree rather than disagree.

Therefore in designing the questionnaires, it was preferred to use categories of *true* as response options. This type of response also lends itself better to the nature of the overall question being asked by the questionnaires, namely "To what extent are the following statements true for your organization?" By using agree categories the overall question would have been "To what extent do you agree that the following statements are true for your organization?" The first version is more straightforward and to the point.

## 8.4 DEVELOPING THE PROJECT MANAGEMENT EFFECTIVENESS SURVEY INSTRUMENT SET

### 8.4.1 Item pool generation

The item pool for the construct was generated by screening an initial set of approximately 230 statements found in the literature. The process of deriving the item pool is described in

section 4.5. A list of 78 items, judged to be a comprehensive and unique list of items to define the construct domain, was subsequently drawn up.

It was planned to subject these items to a number of project management experts for verification. The items were therefore grouped into thirteen themes that were considered to make the relevance of each item to project management more clear. These thirteen categories, and the items grouped under each, were shown in section 4.6.

### 8.4.2 Item pool evaluation

A list of 29 individuals, which were selected from USB's database as having sufficient experience and exposure to project management, was drawn up. This list included academics, practitioners and consultants, and covered a wide range of industry types, both South African and internationally.

The list of variables was presented as a questionnaire in Microsoft Excel format. A copy of the questionnaire is exhibited in APPENDIX A. This was e-mailed to each person with a covering message explaining the purpose of the concept and inviting their response. Each item had to be judged whether it belongs to a construct of project management effectiveness or not. Three options were provided: Include; Exclude; and Unsure. It was also stated that they were not to judge items as necessarily belonging to the heading, but only to the total concept of project management effectiveness. Under each heading people were asked to add any other items they would consider necessary to define the concept. A copy of the covering letter is shown in APPENDIX B.

A total of 17 completed responses were received for a response rate of 59%. The response was considered acceptable for the following reasons: the representativeness of responses met expectations, including two university professors in project management, three consultant/trainers in project management, and twelve project management practitioners; the respondents represented a reasonable spectrum of industry types, including information technology, construction, defence, insurance, banking, retailing and local government; and three of the responses were from outside South Africa, respectively from Australia, Germany, and Hong Kong.

Responses were evaluated in the following way. Only definite (Include or Exclude) responses were counted for each item. The Unsure response was discarded for the evaluation of that particular item. For each item the percentage Include response was then calculated as the number of Include responses divided by the sum of Include and Exclude responses. For example, if there were 12 Includes, 2 Excludes and 3 Unsures (a total of 17 responses), the percentage Include response would be 12 / 14 = 85.7%

The list was sorted in descending order per category. The Include responses ranged from 100% to 62.5%. Only 11 items had scores below 80%. A copy of the total list, indicating the responses and scoring, is included in APPENDIX C. All items scoring below 80% are shaded. Even down to the lower scores, the response was considered reasonable backing for the items.

A total of 37 items were added by respondents. Many of these were comments rather than new variables, but they reflected the seriousness with which the respondents approached the exercise and the relevance of the items and categories. The list of added items is shown in APPENDIX D. A number of areas, which could be strengthened, emerged from these contributions, for example:

- project communication and in specific the use of formal communications planning, status reports and change management as part of communications planning;
- access to technical competence, internal and external to the organization;
- the strength of subcontractors and procurement procedures; and
- the need for risk management and contingency planning.

In drawing up the final list of items for the questionnaires, these additional items were added for consideration.

The literature study and the subsequent evaluation by experts largely supported a construct domain defined by a reasonably concise set of variables. Items belonging to all the categories were supported. An interesting observation is that many of the items that received lesser support were items linked to larger organizations' interface with project management. An explanation may lie in the fact that the expert group mainly comprised people focusing on the practice of project management, and not on the management of the organization. Their responses may reflect a certain lack of sensitivity to the organizational concerns and

expectations from project management, rather than indicate that these items do not belong to the construct. It was therefore not considered necessary to discard any of the items purely based on a lower score than others, but to take that into account alongside other considerations. As an example, the clarity with which an item can be measured by a survey in a practical setting also played a role. All of these items were judged to have support from the expert panels and the literature.

This exercise teaches an important lesson for identifying expert panels for similar type construct development in project management research, especially for constructs with a multiple constituency focus. In this regard, it is advisable to include senior managers, from organizations that are actively applying project management, in such a panel. As key constituents, they should be better positioned to evaluate the organizational concerns of project management.

### 8.4.3 The proposed construct and structure of scales

Closer inspection of the variables (items) and the respective categories, suggests four main groups of dimensions, namely:

- dimensions related to the organizational input to project management;
- dimensions related to how the project management processes are executed;
- dimensions related to how project management objectives are met; and
- dimensions related to how the rest of the organization benefits from, and is impacted upon, by project management in the longer term.

Within this framework of four main groups, the list of items and their headings have been regrouped into a set of eleven dimensions, as illustrated in Figure 8.1.

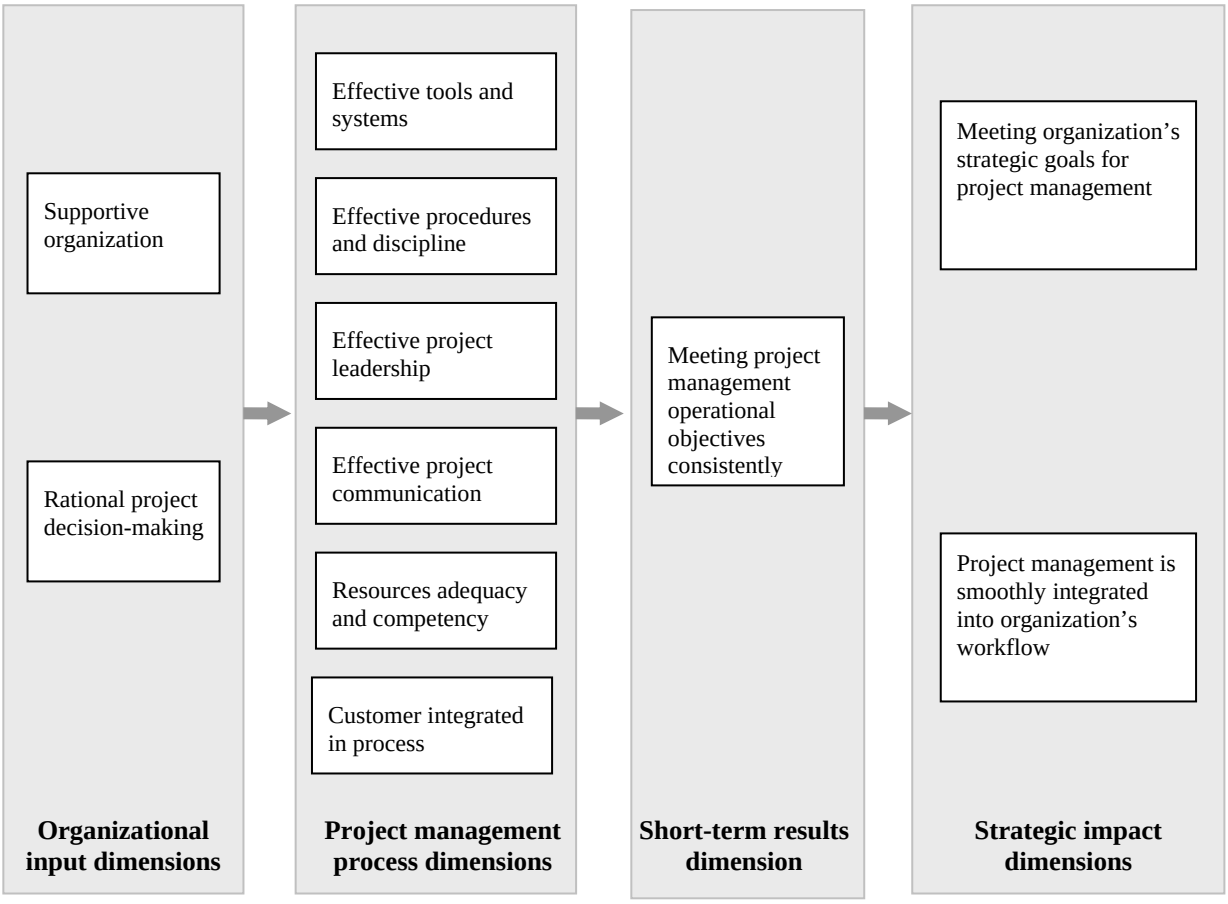


**Figure 8.1: Proposed construct of project management effectiveness**

From the above proposed model, and in line with the multiple constituency principle, which has been emphasized earlier as a key consideration for effectiveness constructs, it is evident that project management effectiveness cannot be assessed from the perspective of a single person or group. A reasonable assessment may only be achieved by probing the perceptions of three different constituent groups in an organization:

- the organization, specifically top management;
- people functioning as project managers on a regular basis; and
- people functioning as project team members on a regular basis.

By viewing the item pool and the structure of the construct it was judged that the three perspectives are largely independent, thus each group could report on their own set of assessment items. Although some items could be considered overlapping (capable of being evaluated by more than one group), it was decided to keep the set of scales simple and ask each question only once; only to the group regarded as best equipped to give an accurate response. Consequently, three separate questionnaires were designed: one aimed at a representative of senior management; another one aimed at project managers; and a third one aimed at project team members.

The questionnaires were drawn up by translating the wording of the items in the item pool into corresponding questions or statements. Guidelines for questionnaire construction, as highlighted in section 8.3, were considered.

### 8.4.4 Validation of the scales

Early versions of the scales were given to two fellow doctoral candidates and the professor in Project Management at the University of Stellenbosch Business School (USB) for comments on wording and question clarity. A subsequent version was administered to class of students attending a project management course. They were requested to complete the questionnaires in respect of their organizations, and also provide any comments on the questionnaire and the clarity of the questions. Several useful comments were given and certain troubling questions could be identified for further attention.

The questionnaire underwent further refinement based on these inputs received. The modified questionnaires were again handed to colleagues at USB and few minor wording changes were suggested. A copy of this questionnaire set is included as APPENDIX E.

A set of questionnaires were then administered to a sample of MBA students taking the course in Project Management at the USB. The sample was selected by choosing persons that were strongly involved in project management in their organizations.

The students were requested to complete the three questionnaires in respect of their organizations, and by putting themselves in the position of top management, a project manager, and a team member respectively, for the different questionnaires.

The questionnaires were handed out to 23 persons. Sixteen completed questionnaires were received for a response rate of 69.5 %.

An item reliability analysis was conducted on the response data by making use of Statistica 6. The dimensions and their respective Cronbach alphas are shown in Table 8.1 . The computations are shown in APPENDIX F.

**Table 8.1: Item reliability of project management effectiveness dimensions**

| No | Dimension | | Alpha | Alpha if worst item is deleted |
|---|---|---|---|---|
| 1 | Project management outcomes | 5 | 0.945 | - |
| 2 | Meeting strategic organizational goals | 6 | 0.784 | 0.792 |
| 3 | Rational decision-making | 7 | 0.779 | 0.830 |
| 4 | Effective tools and systems | 5 | 0.758 | 0.763 |
| 5 | Application of methodology | 7 | 0.803 | 0.840 |
| 6 | Effective project leadership | 11 | 0.881 | 0.890 |
| 7 | Effective project communication | 5 | 0.879 | 0.905 |
| 8 | Adequacy of resources | 6 | 0.704 | 0.726 |
| 9 | Customer integrated in the process | 4 | 0.765 | 0.770 |
| 10 | Supportive organization | 8 | 0.801 | 0.854 |
| 11 | Integration into organization | 5 | 0.819 | 0.839 |

At this stage the instrument was judged to be satisfactory for use as an instrument in the final sample of organizations. The instrument set could not be considered validated by the small and selective sample utilized, but the need to perform more extensive validation had to be weighed up against a number of problems.

Firstly, the general willingness by organizations to participate in surveys has been found to be very low. The validation process of the culture instrument (see section 8.5.5) has shown that the majority of organizations are negative towards surveys, and especially surveys only done for validating instruments. The complexity of the instrument set and the number of participants needed per organization to complete all three questionnaires were seen to be further constraints that would make it hard to convince organizations to take part.

Secondly, validation of the instruments would need participation by a sample drawn from the same population of organizations that are targeted for the final survey. This population is not a large and easily defined class of organizations in the empirical world, and to target a sample for validation purposes, would obviously have had an eroding effect on the availability of organizations prepared to participate in the final survey.

Given the fact that this study is largely exploratory in nature, it was argued that a full validation of the instrument was perhaps a research project on its own, and beyond the scope of this study. The nature of the variables tested in the instruments, the support they received from both the literature and the experts consulted, and the initial tests and reliability of responses, were considered adequate for using the instruments in the final survey.

## 8.5 DEVELOPING THE ORGANIZATIONAL CULTURE SURVEY INSTRUMENT

### 8.5.1 Questionnaire item generation

Unlike the project management effectiveness construct, where items had to be generated from start, culture and other organizational behaviour studies offer a much stronger basis of tested constructs, and the items utilized to operationalize these constructs.

The core items for most of the proposed dimensions of the culture construct could be taken from existing published scales. The scales used for this process are shown in Table 8.2.

### 8.5.2 Questionnaire length considerations

The length of the questionnaire is an important consideration. The trade-offs lie between enough items to improve accuracy and reliability of measurement, and a short enough survey for respondents to be willing to fill it in. The Van Der Post, *et al.* (1997) questionnaire was used as a guideline for questionnaire design. This scale had 15 dimensions and 97 items, thus on average between six and seven items per dimension. The other questionnaires consulted showed similar trends; most well-formulated dimensions would typically have between five and eight items. It was decided to aim at an average of approximately eight items per dimension for an initial questionnaire, thus ± 96 questions. This was considered to allow

enough scope to weed out lower reliability and superfluous items through validation tests, aiming at a final instrument of approximately six items per dimension, thus a 72 item questionnaire.

**Table 8.2: Scales consulted for culture questionnaire items**

| Source | Dimensions | Reliability coefficients |
|---|---|---|
| Van der Post, *et al.* (1997) | Various dimensions | 0,78 – 0,93 |
| Postmes, Tanis and De Wit (2001) | Strategic communication and information<br>Vertical communication<br>Horizontal communication | 0.75<br>0.81<br>Not provided |
| Jaworski and Kohli (1993) | Interdepartmental interconnectedness<br>Formalization<br>Centralization | 0.80<br>0.76<br>0.88 |
| Chatman and Jehn (1994) | People orientation<br>Outcome orientation<br>Detail orientation (decision making rationale)<br>Innovation (flexibility) | Not provided<br>Not provided<br>Not provided<br>Not provided |
| O'Reilly, *et al*. (1991) | Outcome orientation | Not provided |
| Hofstede, *et al*. (1990) | Employee vs. job oriented<br>Open systems vs. closed systems | Not provided<br>Not provided |
| Ekvall (1996) | Trust and openness (including communication) | Not provided |
| Nystrom, Ramamurthy and Wilson (2002) | Risk orientation<br>External orientation | 0.84<br>0.72 |
| Ogbonna and Harris (2000) | Participative leadership<br>Competitive (task / achievement orientation) | 0.92<br>0.76 |
| Covin, Slevin and Heeley (2001) | Decision-making rationale<br>Organistic vs. mechanistic (formalization)<br>Consensus decision-making / participation | Not provided<br>Not provided<br>0.92 |
| Van Muijen, Koopman, De Witte, De Cock, Susanj, *et al*. (1999) | Support orientation<br>Goal orientation | 0.91<br>0.83 |
| Clugston, Howell and Dorfman (2000) | Uncertainty avoidance (formalization)<br>Individualism / collectivism (team orientation) | 0.81<br>0.77 |

### 8.5.3 Direction of items in questionnaire

Another factor in questionnaire construction is the direction of items. Nunnally (1978: 605) emphasizes that, to ensure sufficient response variance, questions should not be neutral but

have a moderately positive or moderately negative direction. Nunnally (1978: 605) suggests an even division between negative and positive statements in a questionnaire.

This recommendation produces a dilemma, because several more recent sources warn against the confusion caused by negatively worded questions. See section 8.3 for evidence. To comply with Nunnally's criterion, each dimension has been defined in terms of both its directions. Refer to the summary of dimensions in Table 6.3 (page 127). Each dimension of the questionnaire could therefore be operationalized by more or less evenly splitting the items between testing its negative and its positive direction. This could be accomplished by making use of positive wording as far as possible.

### 8.5.4 Initial questionnaire validation

The first version of the questionnaire contained 98 questions and was drawn up by randomly arranging items. The majority of dimensions had between seven and nine items; one had six and one had ten items.

This version of the questionnaire was first handed to two fellow doctoral candidates for their scrutiny. This was not intended as a validation, but as a first stage check on readability and understanding. Several problems were exposed: double-barrelled items, ambiguous word choices, too complex sentence constructions, and questions that were generally unclear.

A revised version containing 95 items was subsequently drawn up, with a seven-point Likert scale.

As a second stage of validation, to test the instrument's behaviour as a self-administered survey questionnaire, the questionnaire was presented to a sample of 40 MBA students that were selected from the 2000 to 2003 part-time, modular and full-time groups (about 150 in total). The selection criteria were that they had to be, at that time, employed by organizations that have a manifest culture, and that they had to be in middle management, or in other positions of about equivalent seniority. Other considerations were the inclusion of equal numbers of Afrikaans and English speaking students (20 of each), and having the typical proportion of female versus male students at that time at the USB (26 male and 14 female were selected).

The questionnaire utilized Microsoft Excel with built-in software to facilitate responding by simply clicking the options. This version was e-mailed to potential respondents who could on completion e-mail it back to the researcher.

The functionality of the Excel file creates a row of response data (based on the Likert scale options between 1 and 7) in a data array by the respondent's action of selecting options. Upon receipt of the returned questionnaire by the researcher, this array can be copied and pasted into a consolidated response data file, in Microsoft Excel, for further processing.

The questionnaire was e-mailed in this format directly to the 40 students. Three of these could not be delivered due to problems with e-mail addresses and virus protection systems. Sixteen completed responses were received which yielded a response rate of 43% based on the 37 persons who actually received the questionnaire. For the purpose of this exercise this was considered acceptable.

An item reliability analysis was performed using Statistica 6. Cronbach alpha coefficients were computed for each dimension.

This validation exercise rendered evidence that the core of the instrument was sound, and that respondents interpreted and completed most questions in a consistent and reliable way. The statistical tests clearly showed which questions were unreliable and which dimensions had to be strengthened.

At this stage it was decided not to shorten the questionnaire, but to, through inspection of the items, modify the wording of those questions that appeared to be giving problems, or replace them with new items which seemed to be more supporting of the items retained. A revised version, again with 95 items, was drawn up.

### 8.5.5 Final validation process

This improved version of the questionnaire was again handed to the two fellow doctoral students mentioned earlier, and two academic staff members at the USB, both lecturing in human resource subjects. Minor, but useful comments were received, which were incorporated before the instrument was considered ready for a larger scale field test.

The intention was to invite a large number of organizations to participate in this final validation exercise, with the aim of achieving approximately 60 organizations, each with eight to ten respondents, thus yielding close to 500 responses.

The database of the USB and USB ED (Ltd) was used as source of organizations and contact persons. Organizations where the Human Resources head was the contact person were targeted. A list of approximately 700 organizations, from across the whole of South Africa, was extracted. An initial randomly selected group of 35 organizations were e-mailed with a request to participate. The purpose of the exercise was carefully explained. Out of the 35 organizations, only two responded by asking for more information, and subsequently decided not to participate. This way of inviting organizations did not seem to work and would probably not yield a sufficient response in a reasonable time. A copy of the letter sent out to organizations is shown in APPENDIX G; the questionnaire used for the validation exercise is contained in APPENDIX H.

It was decided to telephone a further number of organizations on the list, but this also proved to be an unproductive exercise. At the most, people would show initial interest, but thereafter would fail to return calls.

A further approach was followed in parallel, and that was to approach organizations through personal connections: organizations that have relationships with the USB through training and consultation; personal acquaintances in organizations; and MBA students willing to arrange participation by sections in their organizations. This exercise eventually made it possible to send the questionnaire to 337 individuals in about 60 different organizations.

107 people completed the questionnaire for a response rate of 32 %. At that stage it was decided to accept that as sufficient for validation purposes.

An important observation from this exercise was that organizations were generally negative towards surveys, especially if the questionnaire is long. Several organizations claimed that they had been overly exposed to surveys; some by internally directed research programs; others by being frequently targeted by research projects of higher educational institutions. Certain organizations also reported negative experiences with commercial culture or climate surveys conducted previously in their organization.

The fact that this questionnaire was still in a development stage, also aggravated the situation. Some organizations declined to participate on the grounds that there was not really any benefit for them; they were not interested in merely supporting research.

### 8.5.6 Final validation findings

An item reliability analysis was conducted by making use of Statistica 6.0. Cronbach alpha coefficients were calculated for each dimension. The detailed Statistica results are shown in APPENDIX I. The instrument delivered a reasonable performance as far as item reliability is concerned. All alphas were in excess of 0.70. A small number of items still proved to be unreliable and were causing the lower alphas. However, this version of the questionnaire still had adequate scope to leave items out.

### 8.5.7 Design of the final questionnaire

The initial target was to develop an instrument of approximately 72 items. The first step in shortening the scale was to omit the items that resulted in lower alphas in the tested instrument. A further test was done to identify more items that could be left out. Two criteria were set by which to test items, namely items that showed no real affect on alpha if omitted, and items that showed a relatively small variance across all respondents. Items that complied with both these were judged to be superfluous and were taken into consideration for further reducing the items.

This exercised shortened the instrument by 18 items to 77 questions. This was considered a fair compromise between reliability and questionnaire length.

Table 8.3 gives an overview of the validation and revision of the questionnaire. The table show the reliability results for both the 95-item and the revised 77-item questionnaires. The tests on the 77 items were done by using the same response data. The table also shows the corresponding number of items in the two questionnaires. The Statistica item reliability analysis results of the 77-item scale are shown in APPENDIX J.

**Table 8.3: Culture instrument reliabilities: original and revised instrument**

| | | Original (95 items) | | | Revised (77 items) | |
|---|---|---|---|---|---|---|
| **No** | **Dimension** | **No of items** | **Alpha** | **Alpha if worst item is omitted** | **No of Items** | **Alpha** |
| 1 | Organizational direction | 7 | 0.823 | 0.840 | 5 | 0.839 |
| 2 | Competitiveness philosophy | 9 | 0.886 | 0.904 | 7 | 0.899 |
| 3 | Decision-making rationale | 7 | 0.720 | 0.751 | 5 | 0.761 |
| 4 | Cross-functional integration philosophy | 8 | 0.740 | 0.756 | 5 | 0.803 |
| 5 | Communication philosophy | 9 | 0.874 | - | 8 | 0.871 |
| 6 | Locus of decision-making | 8 | 0.886 | - | 7 | 0.881 |
| 7 | People management philosophy | 7 | 0.820 | - | 7 | 0.822 |
| 8 | Flexibility philosophy | 9 | 0.725 | 0.729 | 7 | 0.735 |
| 9 | Philosophy about people | 8 | 0.903 | 0.908 | 6 | 0.903 |
| 10 | Personal competency philosophy | 7 | 0.739 | 0.791 | 5 | 0.829 |
| 11 | Process and systems support philosophy | 7 | 0.787 | - | 7 | 0.789 |
| 12 | Performance management philosophy | 9 | 0.802 | 0.807 | 8 | 0.815 |

Note: The original analysis on the 95 item questionnaire was done based on a response of 107. After removing the 18 items two more completed questionnaires were received. They were included in testing the reliability of the remaining 77 items. This explains the small differences between the alphas of the dimensions that were not changed.

The revised instrument still achieved a fair balance between positive and negative direction items (positive = 42 and negative = 35).

With the relatively small sample of respondents, meaningful factor analysis was not possible. Preliminary exploratory factor analysis showed that there were probably fewer factors and a high level of inter-correlation between factors and between items across dimensions.

At this point it was decided not to attend to this problem and to leave a proper evaluation of the factor structure for the final sample. To solve this problem could imply a major redevelopment of the construct. Recent culture studies that further explored the factor structures of previous instruments reported similar observations (see for example Delobbe, *et al.*, 2002; Erwee, *et al.*, 2001; Xenikou & Furnham, 1996).

One explanation can lie in the phenomenon that corporate culture has become a topical concern in the business world. Many organizations address changes in their culture and do so in a multidimensional way. The popular dimensions of culture are therefore no longer independent concepts in an organization, but the focus on culture has made them related concepts. This, however, is a phenomenon that justifies a separate research project. It was decided to use the instrument as it has been developed, and to use the final data set to provide further illumination and evidence for a deeper analysis.

## 8.6 FURTHER REFINEMENT OF THE INSTRUMENTS

At this stage the full set of instruments, organizational culture and project management effectiveness, were reviewed again for possible inconsistencies and wording problems. Further discussions with colleagues on item wording and Likert Scale categories were conducted in the light of observations of how people had responded to the test questionnaires. Some finer adjustments resulted from this exercise, as follows: Firstly, certain Likert Scale categories were changed so that all questionnaires had exactly the same options, namely categories of AGREE (i.e. from STRONGLY AGREE to STRONGLY DISAGREE). Previously, they had categories of TRUE (i.e. from LARGELY TRUE to LARGELY NOT TRUE) and one had a few questions with other options. This change was made because some feedback received had indicated that the concept TRUE is difficult to conceive as having meanings in between, i.e. partly true or partly not true. To avoid any confusion, the change was made. Many of the extant questionnaires that were studied made use of the AGREE category and it appears to be a popular option for attitude type questionnaires.

Secondly, it was decided to duplicate certain project management effectiveness questionnaire items. Previously, the three questionnaires were mutually exclusive as far as item content was concerned. However, it was felt that certain items in the senior manager questionnaire could also reasonably be answered by project managers, and, similarly, other items by project team

members. These items were then added to the project manager and project team member questionnaires respectively. It was considered that such a change could only lead to the increased reliability of the total project management effectiveness measurement.

The final instruments used in the survey are contained in APPENDIX K (Organizational culture) and APPENDIX L (Project management effectiveness).

## 8.7 SUMMARY

This chapter presented the further construct and questionnaire development for the dependent and independent variables for this study. Both the dependent variable, project management effectiveness, and the independent variable, organizational culture, resulted in questionnaires with reasonable and acceptable reliabilities. Cronbach alpha coefficients for all the dimensions were better than 0,70 and the majority were better than 0,80.

# CHAPTER 9

## THE RESEARCH SAMPLING AND SURVEY PROCESS

### 9.1 INTRODUCTION

This chapter describes the research survey process and the sampling methodology utilised. Because the study focuses on the organization as the unit of analysis, two levels of sampling had to be considered. First, a sample of organizational units complying with the research criteria, and secondly, samples of individuals within each organizational unit representing each category of questionnaire, were needed.

To assist in explaining the logic of the survey approach, this chapter starts by reviewing the main aims of the research. It subsequently refines the criteria whereby target organizations were screened for participation and illustrates the survey model with its different questionnaires and target response groups required per organization.

This chapter concludes by analyzing the response patterns of organizations and individuals and by addressing the demographic profile of participating organizations and how representative that is of the studied population.

### 9.2 REVIEW OF THE MAIN AIMS OF THE RESEARCH

This research started out from the assumption that organizational culture is likely to have a meaningful impact on the effectiveness of the project management capacities in a specific category of organizations. This category refers to those organizations that execute cross-functional projects within multi-departmental structures, in addition to functionally-based activities, i.e., that apply matrix management principles. In line with frequently published evidence, although mostly of anecdotal and speculative character, this study viewed the existence of a project management supportive organizational culture as an actual empirical phenomenon. Underlying to this belief, it further proposed that such a culture can be defined as a construct with measurable variables, and that differences in scoring against these

variables will correspond to differences in scoring on a project management effectiveness construct.

Consequently, the survey aims to demonstrate, through a systematic collection of empirical data, that:

- organizational culture as measured by the proposed culture construct correlates with the proposed project management effectiveness construct; and
- each of the proposed dimensions of the culture construct correlates with the project management effectiveness construct.

## 9.3 THE TARGET ORGANIZATION

### 9.3.1 The survey design

The survey has been designed to measure the two main constructs, namely an independent variable and a dependent variable, by means of separate sets of questionnaires in each participating organization.

On the one hand the survey targets the prevailing organizational culture of the organization in the immediate environment of project management. By this concept of culture, it is meant the customary ways the organization functions in those areas from where project management draws its resources and support, for example, expertise, team members, management decision-making processes, administration, information, and financial services. This forms the independent variable of the study.

The target group of people sought to provide this information are those experienced people within the organization that are intimately close to its management and decision-making processes. The typical respondent frame of reference, for measuring this construct, was drawn around middle managers, supervisors, and relatively experienced technical and functional specialists.

On the other hand, the survey has to measure the effectiveness of project management as the dependent variable. The multi-dimensional nature of the project management effectiveness construct requires that it be measured from three different angles, namely:

- a satisfaction index of top management that the organization's project management capability delivers in accordance with the expectations held by top management;
- the effectiveness of the processes, resources, and methodology that project managers believe they have to their disposal to meet their project management commitments; and
- the perception formed by project team members about the effectiveness of project management as experienced through their involvement in projects.

This approach to the survey is visually illustrated in Figure 9.1.

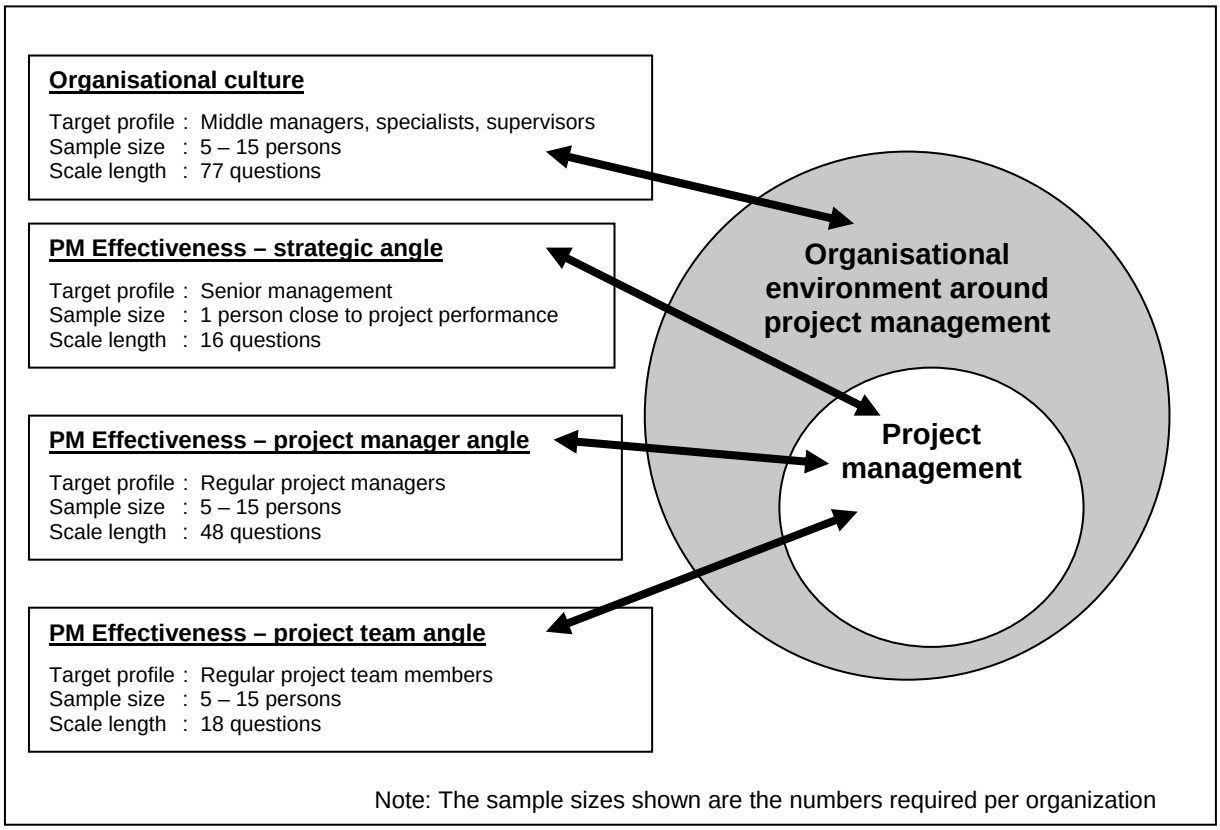


**Figure 9.1: The survey model and proposed sample sizes within organizations**

This illustration will be referred to later when the sample sizes for the different questionnaires will be addressed.

### 9.3.2 Description of the population

This study does not attempt to emphasize any specific industry. It aims to takes a generic view of project management as it is applied across industries. As stated before, it further specifically targets organizations that apply project management in a matrix structure, regardless of the industry sector. To comply with the matrix consideration, the following criteria have been set:

- there is a permanent, vertically oriented, departmental structure in place for managing the organizational resources and functional expertise on an ongoing basis;
- projects are managed horizontally through the appointment of *ad hoc* project teams, largely from members of the line departments, under the leadership of a project manager; and
- project team members are exposed to both line authority and project authority whilst working on projects.

These matrix criteria, however, were not sufficient to define the study population of organizations as other considerations such as size, project management formality, and general management formality had to be taken into account.

Therefore, a further set of criteria had been set to screen organizations for conforming to the population under examination.

### 9.3.3 Criteria for screening organizations

#### 9.3.3.1 Organization size

Organizations had to be sizeable enough for a distinct culture to be evident. As a guideline, organizations had to be approximately 100 employees or more, but this constraint could be relaxed when, through discussion, it was clear that the organization adhered to the multi-departmental criterion, that it functioned by way of established and patterned management processes and styles (i.e. culture), and importantly, it complied with the matrix management principle.

In this respect, smaller business units or regional offices of large organizations were also considered that could have far less than 100 staff members. Such units had to comply with the important aims of the research. They had to function rather autonomously by having their own departmental structures and independent project management capabilities. They had to be seen as distinctly different from the parent organization in terms of both general management patterns and project management performance. Importantly, because they have to be accountable to the parent organization, they are partly locked into its management constraints and control mechanisms, and therefore shows similarities with a larger organization culture. However, in its own unique setting and due to the personalities of its senior management, its culture may have manifested in ways different from the parent organization and other regional offices.

#### 9.3.3.2 Management structure

Organizations had to be managed by conventional management structures, as opposed to an owner-managed business enterprise. The management dynamics of organizations that are managed by owner entrepreneurs had not been considered for this study. This type of organization was therefore excluded.

#### 9.3.3.3 Distinct project management approach

Organizations had to perform project management in a sufficiently formal way. However, since many different project management systems and levels of formality exist, often depending on industry and project type, a rather broad definition of project management had been set. Organizations had to comply with the following principles of project management:

- the appointment of project managers to manage their projects;
- the setting of project budgets distinctly separate from routine departmental budgets;
- explicit scoping and definition of outcomes and deliverables for projects;
- the setting of project milestones and project completion dates;
- making use of a recognized effort to measure project progress and to control outcomes in terms of the set project management objectives; and

- holding project managers and team members accountable for delivering in terms of their targets.

The exact methodology, and how formally it was enforced, was not a criterion. The rationale was that, in order to cover the widest possible spectrum of organizations in different industries, and to achieve the highest possible level of credibility for the study, tolerance for different systems and different levels of formality was needed.

### 9.3.4 Demarcation of the concept of organization

In initial discussions with potentially participating organizations, important difference in how organizations approach the setting up of their project management capabilities, were found.

Some organizations would centralize their project activity into a program or project office at their corporate head office. This would closely liaise with and draw resources from different regional offices or divisions, but operate mostly within the head office culture as far as administration support, accounting, decision support and information systems are concerned.

Other organizations would have autonomous regional offices, or other decentralized facilities, each operating as a separate functional organization structure with its own project management capability.

Another class of organization would have a large centralized facility, but with decentralized business units or divisions being semi-autonomously managed. Some of these units may have independent project management capabilities that function within their business unit cultures.

Under these circumstances, and in consideration of the existence of sub-cultures, which have been addressed in the literature study (see section 5.3.3), a more accurate demarcation of the concept of organization (i.e. the organization environment interacting with project management) had to be set. Because different parts of organizations may have developed sub-cultures that are substantially different from other parts of the organization, it was important to measure culture in that part of the organization that most closely interacts with and supports the project management capacity that is under investigation.

Thus, when the study says organizational culture, it means the culture, or even sub-culture, in that part of the organization that applies project management, and from where most of the support, resources, expertise, and routine management and decision-making processes are drawn. The term organization is therefore confined to that part of the organization that defines the environment within which project management finds itself.

### 9.3.5 The population in the empirical world

Early in the study it had become clear that the population, as defined for this study, was not an obvious list of organizations defined by a distinct membership. For example, they are not represented by any category of the stock exchange, or by membership of a particular professional code or interest group.

Some further research was needed to explore those industries associated with the application of project management in order to draw up a list of organizations, across South Africa, conforming to the research criteria. The important concern was to accomplish a list that could be judged as reasonably representative of the population pictured for this research. Such a "quasi-list" (Babbie, 1989: 181) would then form a sampling frame for the empirical investigation. The process of identifying the sampling frame is described in the next section.

## 9.4 THE RESEARCH SAMPLING FRAME

Four different approaches were followed to compile the sampling frame in an effort to be as representative and unbiased as reasonably possible.

The first approach was to utilise the database of attendees to project management training courses at the University of Stellenbosch Business School (USB). In consultation with the professor, who had been teaching these programs at the USB, this list was scrutinized to extract those organizations that were likely to meet the criteria of the study. This list comprised organizations from all over South Africa and included many of the prominent project management practicing organizations in the country. Nevertheless, to avoid the possible bias of only using this one source, further avenues were explored.

The second step was to approach formal bodies, closely associated with industries and professions that customarily practice project management. They were given a full explanation of the research aims and criteria and were requested to put forward names of organizations that would qualify, or to assist in any other way to identify such organizations amongst their members. Amongst the bodies approached were:

- Project Management South Africa (PMSA);
- the recently established South African Council for Professional Project Managers (SACPPM); and
- several other representative bodies covering the professions of civil engineers, municipal engineers, electrical engineers, and architects.

No assistance could be offered by these bodies. The ones that responded pointed out that their members are individuals and not organizations.

Thirdly, several individual members of the Project Management Standards Generation Board (PMSGB) of South Africa were approached with a similar explanation and request. This request resulted in a number of organizations that could be added to the list.

As a fourth strategy, several individuals, with many years experience in the application, education, and consulting of project management were approached. These individuals were active in industries such as the defence sector, the consulting civil engineering sector, the financial services and insurance sectors, public management, and information technology. This exercise rendered a substantial expansion to the list of organizations. Although many of these people consulted were Western Cape based, they were connected to organizations countrywide and could suggest organizations located in different parts of the country.

This process resulted in a total list of 131 organizations across South Africa in a variety of industries, business sectors, and governmental organizations. Because of the complexity of identifying organizations complying with the criteria and because there was no way of establishing the possible sampling population, this list was considered to be a fair and workable basis to use as a sampling frame for this study. The time estimated to intensify this part of the research, in order to expand the list in a meaningful way, was therefore considered

not worth further prolonging the study. This list was not subject to any intentional or unintentional bias, for example, on account of size, industry, or geographical location. Similarly, organizations' preferences in conducting project management (other than the criteria set for the study), their performance in project management, or their perceived cultures were not taken into account. Organizations were not put on the list, or excluded, to attempt to influence the study findings in any way. Any organization suggested by the persons consulted as likely to meet the laid down criteria, was put on the list and had an equal change of participating.

## 9.5 STRATEGY FOR ATTRACTING PARTICIPATION

### 9.5.1 Background

It had become evident in the validation phase of the culture instrument that organizations were generally reluctant, if not unwilling, to cooperate in surveys of this nature. With the level of complexity of this particular survey, namely four different instruments targeting four different types of people, it was envisaged to find it even more difficult to convince organizations to take part.

Whilst consulting people for generating the sampling frame, this potential difficulty and ways to overcome the reluctance were addressed. They largely confirmed that organizations could be expected to be negatively inclined towards academic research. Several reasons had been put forward.

Firstly, organizations are regularly confronted by requests to participate in research undertaken by higher educational institutions. Many of these surveys involve lengthy questionnaires that are difficult to complete. Organizations often find the research topics to be of little relevance and primarily aimed at the researcher's pursuit of a qualification.

Secondly, most researchers promise to send research results afterwards, but sometimes these promises are not honoured. Other times researchers merely send out copies of academically styled texts that offer organizations not much of practical value.

A third and important consideration is that most organizations have undergone major downsizings over recent years, especially in the costly middle management and specialist layers. People currently occupying these positions are mostly over-worked and under pressure to deliver. They have little time to attend to extra activities not directly related to their work performance.

The crucial advice was to address these concerns when inviting organizations to participate. Organizations had to be persuaded that the research would make a valuable contribution to the broader practicing of project management. The organizations themselves also had to be offered a worthwhile incentive to participate. Lastly, participation had to be made as effortless as possible.

Each communication and invitation to participate would therefore address these issues, as are elaborated in the following sections.

### 9.5.2 Emphasising the general contribution of the research

The *bona fide* nature of the research was emphasized. The fact that it addressed a vital shortcoming in the field of project management was clearly explained. It was also considered important to accentuate the national emphasis of the survey and, specifically, that organizations representative of project management across South Africa would be needed to ensure meaningful findings.

### 9.5.3 Incentive offered to participating organizations

A detailed practical report had been developed that could be prepared for each participating organization. This would offer them an analysis of their own assessment in comparison with the survey findings and survey averages. The nature of this report, and the availability of a sample report on request, was emphasized in each invitation in order to encourage organizations towards making a favourable decision.

### 9.5.4 Reasonable sample sizes within organizations

Although it was considered ideal to have large samples of individuals within organizations to fill in each questionnaire type, this could easily dissuade organizations from taking part.

Based on early exploratory discussions with potentially participating organizations, a trade-off situation became evident. Allowing organizations to make fewer individuals available per questionnaire, would increase the likelihood of getting more organizations, whereas, requiring larger numbers of individuals per organization, would decrease the number of organizations prepared to take part.

Because the organization is the unit of analysis, the sampling strategy had to favour getting more organizations. Therefore it was decided to demonstrate sufficient leniency in respect of the numbers of people required per organization. The approach to sampling within organizations is more fully addressed in section 9.6.4.

### 9.5.5 Administering the questionnaires

The strategy was to make participation as simple as possible. Once a suitable contact person had been identified, the only requirement for the organization was to take the decision, and to forward the names and contact details of individuals that comprise the different samples within the organization (refer to Figure 9.1: The survey model and proposed sample sizes within organizations).

All questionnaires had been designed as fully computerized Microsoft Excel files that could be delivered directly to nominees and returned to the researcher by e-mail, and that could enable respondents to complete, and submit the questionnaires by simply clicking options on their computer keyboards. Besides smoothing the process for respondents, this approach also relieved the contact person from an extended involvement to coordinate the process within the organization.

The system had been extensively tested in a variety of organizations beforehand to ensure compatibility with different computers and organizational network setups.

The target profiles of respondents and the relative sophistication of organizations involved in project management provided some reassurance that a computer-based way of surveying would not unreasonably exclude organizations or individuals that would otherwise meet the research criteria. Nevertheless, to minimize the potential of bias through this approach, a manual option was made available to organizations, or individuals, who preferred to do the survey in that way.

## 9.6 SAMPLING PROCESS

### 9.6.1 Initial organization sampling strategy

As a target, a response sample size of 40 organizations was set considering the size of the sampling frame. The initial strategy was to draw a random sample from the sampling frame, and invite them to take part. As soon as an organization declined to participate, it was replaced by the next organization on a randomly ordered replacement list comprising the remainder of the sampling frame.

This strategy proved to be a time consuming process. The first problem was to get the invitation to an appropriate person, i.e. a person that could relate to the research aims and at the same time was sufficiently senior to convince the organization to take part. The second problem was to get a fast decision from the organization. Lastly, even after a positive decision had been made, organizations were often quite slow in sending forward the names of individuals, comprising the different sample groups.

It soon became clear that this process could run for an unduly extended period. Early experience also signalled a rather modest acceptance rate and it became clear that, to achieve an acceptable sample size, it was necessary to approach the full list of organizations in the sampling frame.

### 9.6.2 Final organization sampling approach

The strategy was changed from randomly selecting to inviting all organizations on the list to take part. Organizations were e-mailed with a synoptic explanation of the research, the criteria for participation and the anticipated benefits, requesting them to supply the name of an appropriate contact person, should they be interested.

Besides the expected fall-out of organizations declining to take part or ignoring any correspondence to establish contact, it was also found that certain organizations did not conform to the research criteria. The reasons for this phenomenon are discussed under the next heading.

The pro forma letters that were sent to organizations in order to, (a) establish contact, and (b) invite them to participate, are shown in APPENDIX M.

A detailed organization response analysis is given in section 9.7.1.

### 9.6.3 Sampling frame organizations not meeting the criteria

When drawing up the sampling frame, the organizations considered were evaluated primarily on third party recommendations and evidence. However, several reasons emerged why certain organizations that had initially been thought to qualify as part of the sampling frame, were not meeting the criteria.

Some organizations had gradually switched to long term fixed project team structures with limited matrix involvement or shared authority between line and project managers. Other organizations turned out to be smaller than anticipated. A third category was organizations where the project management environment was too loosely defined and structured. For example, organizations running projects that were partly head office and partly local office driven; team members could come from different offices with different cultures. The last type involved project management executed mainly as a main contractor activity with sub-contractors providing the bulk of project team work. This type of organization was mainly found in the construction industry, and in certain governmental agencies.

### 9.6.4 Individual sampling approach

Earlier, it was explained that, in an effort to make participation attractive enough, organizations would be allowed some measure of discretion in determining sampling sizes within their organizations.

An approach was followed whereby broad guidelines were specified and where an organization was allowed to nominate samples within these guidelines. The invitation correspondence specified the following guidelines:

- the profile of staff members for each category of assessment;
- a broad range of the numbers of respondents required for each category of assessment; and

- the importance of making sure that the persons nominated, and the numbers nominated, would result in a sufficiently representative and accurate assessment of each category.

This approach seemed fair to many of the organizations approached in the early phases and was followed throughout. (For reviewing the illustration of the assessment model, the different sample profiles, and proposed ranges for sample sizes, refer to Figure 9.1 on page 186)

As could be predicted, many organizations opted towards the lower numbers. Some exceptions to this trend may have been influenced by wanting a more accurate assessment of their own strengths and weaknesses in the promised report. However, it remained obvious throughout the invitation and negotiation process that numbers were a key issue, and often a willingness to be tolerant, swayed the decision towards participation.

## 9.7 ANALYSIS OF PARTICIPATION AND RESPONSE

### 9.7.1 Organizational participation

The initial expectations of a low organizational response were to an extent confirmed by experience. Out of the 131 organizations on the list, eventually 31 participated. However, it was stated earlier that several organizations approached were found to not meet the research criteria. A total of 21 organizations fell in this category and were subsequently removed from the original list. This adjusted the effective sampling frame down to 110 organizations. The 31 organizations therefore constituted a 28% response rate, which is low, but fair considering the constraints discussed and the general experience in other studies. Out of the 31 organizations, however, two organizations did not complete any culture questionnaires. Consequently, only 29 organizations could be considered as valid responses for the purpose of the statistical analysis.

A simple response analysis does not accurately relay the experience with this kind of research and the ways organizations respond. There were a number of steps, following the initial contact, to get to the point of participation and receiving sufficient responses for the organization to qualify for the analysis. Therefore, a more comprehensive and qualitative response analysis is presented.

Some organizations accepted the invitation relatively fast, and soon forwarded the names of individual participants. Likewise, several organizations declined the invitation straightaway, wasting little time. Other organizations would take up to three months after they had positively agreed to take part, to forward the names of individuals. Over that period it was always uncertain whether they would eventually take part or not. This fear was confirmed by the fact that several organizations that had confirmed their participation, in the end failed to supply the names before the cut-off date.

Another category of organizations remained positive about participating, but never took the final decision. A few organizations had a more non-committing approach; some would call for more written explanation, but they could never be drawn into a constructive discourse. Lastly, in the case of a substantial number of organizations, lack of positive contact information made it very difficult to approach them. No likely contact persons could be identified beforehand. Their websites revealed very little other than the standard corporate contact points and they ignored the correspondence sent to these contact addresses.

Table 9.1 gives an overview of the different ways organizations responded and reacted towards the invitation to take part.

### 9.7.2 Individual response

The responding by individuals nominated has been much more satisfactory. Notwithstanding the fact that people had been designated by their organizations to take part, and that invitations could state the endorsement by the organization and by a senior person by name, the final response rate of more than 60% can be considered as highly acceptable.

The initial invitation sent out, usually rendered a response rate of more than 40%. One further reminder generally had a strong effect and helped to push the eventual response rate to over 60%. In isolated cases, second reminders or pressure via the contact person in the organization had to be used to solicit responses where there were particular areas of inadequate response in an organization.

Table 9.2 shows an analysis of how people responded in respect of the different questionnaires sent out. The table makes a distinction between electronically and manually administered questionnaires.

**Table 9.1: Organization response analysis**

| No | Reaction to invitation | Number | Percentage |
|---|---|---|---|
| 1 | Accepted and participated | 29 | 26% |
| 2 | Accepted and participated, but inadequate response for use in the survey | 2 | 2% |
| 3 | Positively confirmed their decision to participate, but eventually did not comply (failed to come up with lists of individuals) | 4 | 4% |
| 4 | Responded positively about the research and their possible participation, but failed to come to a final decision | 10 | 9% |
| 5 | Non-committing response which did not open up opportunities for further constructive discussions | 14 | 13% |
| 6 | Declined the invitation | 11 | 10% |
| 7 | Ignored any correspondence; it became difficult to establish a reasonable contact person to meaningfully approach | 40 | 36% |
| | TOTAL number in the effective sampling frame | 110 | 100% |
| | Responding to the invitation, but after further discussion it was concluded that they did not meet the research criteria | 21 | 16% |
| | TOTAL number in the original sampling frame | 131 | 100% |

**Table 9.2: Individual response analysis**

| | Questionnaires sent out | | | | | Questionnaires returned | | | | | Response rate % | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 OC | Q2 SM | Q3 PM | Q4 TM | To-tal | Q1 OC | Q2 SM | Q3 PM | Q4 TM | To-tal | Q1 OC | Q2 SM | Q3 PM | Q4 TM | To-tal |
| Electronic | 175 | 41 | 155 | 184 | 555 | 107 | 33 | 99 | 107 | 346 | 61% | 80% | 64% | 58% | 62% |
| Manual | 16 | 4 | 14 | 14 | 48 | 10 | 4 | 14 | 14 | 29 | 63% | 100% | 64% | 43% | 60% |
| **Total** | 191 | 45 | 169 | 198 | 603 | 117 | 37 | 108 | 113 | 375 | 61% | 82% | 64% | 57% | 62% |

Q1 (OC) : Organizational culture (completed by people largely external to project management)

Q2 (SM) : Senior management evaluation of project management (completed by a senior manager close to project management)

Q3 (PM) : Project manager evaluation of project management (completed by project managers regularly involved in project management)

Q3 (TM) : Team member evaluation of project management (people regularly involved in project management)

With the exception of the senior manager questionnaire (Q2), where only one person per organization was required, the response rate is fairly constant across the different categories of questionnaires. An average of 12,93 questionnaires were received per organization (across all four categories). Per questionnaire type, the averages were: 4,03 organizational culture questionnaires (Q1); 1,28 senior manager questionnaires (Q2); 3,72 project manager questionnaires (Q3); and 3,90 project team questionnaires (Q4). This implies that the culture construct was measured by an average of just over four people per organization, and the project management effectiveness construct, by close to nine people per organization.

In the case of the senior manager questionnaire, a minimum of one per organization was required, and pressure was put on organizations until that one was received. This accounts for the more than 80% response rate in this particular category. In the other categories, project managers responded the highest with 64%, followed by people completing the organizational culture questionnaire with 61%. It is significant that, although this survey had been explained as a project management survey, organization members from both inside and outside project management, viewed it with seemingly equal importance and responded similarly. Thus, staff not directly involved in projects, i.e. those who had to fill in the culture questionnaire, displayed the same willingness to contribute to the topic.

### 9.7.3 Account of representation

The important concern for the findings of the study is to what extent one can consider this response representative enough for generalization of the findings to the implied population. Because the original sampling frame is only an approximation of the population and, furthermore, proper random sampling could not be done, it is impossible to statistically offer evidence for generalization. Still, by observing the sample more qualitatively, evidence is provided that can be used to expect similar patterns in the broader population as demarcated for this study.

The industries represented in this sample are shown in Figure 9.2. The graph shows how the final sample of 29 organizations compares with the effective sampling frame of 110 organizations.

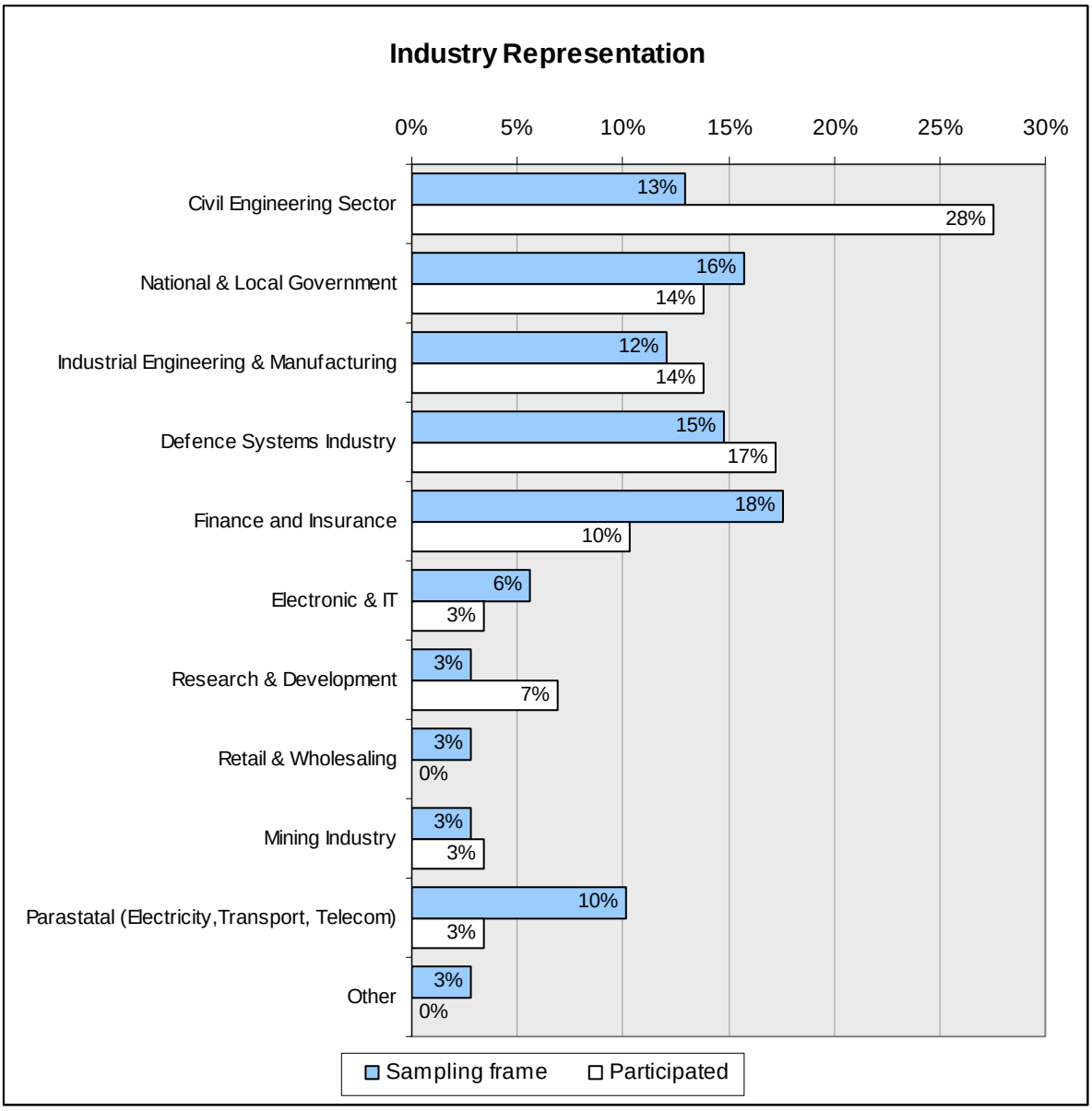


**Figure 9.2: Industry representation of sampling frame and research sample**

Besides the *Other* category, which includes diverse businesses (e.g. management consultancy and auditing), and *Retailing and Wholesaling*, all the major sectors where cross-functional project management might be expected, are represented in the final sample. One must also make the comment that, even in the sampling frame, representation by the information technology (IT) sector is rather low; one tends to expect more IT firms to form part of the population studied. This may be an important consideration for generalizability. Still, one must take into account that project management, almost by definition, is a multi-disciplinary activity. In many organizations, especially in the defence industry and the finance and insurance sector, IT is the core of many of the projects undertaken. Therefore, this research

sample may be intrinsically more representative of the IT sector than what is obvious from the above analysis.

Geographically, the sample includes organizations across South Africa (see Figure 9.3). The final sample, however, has a stronger Western Cape representation, largely at the cost of Gauteng organizations. This might be attributed to Western Cape organizations showing greater willingness to support research at the University of Stellenbosch than organizations from other parts of the country that may have felt less affiliated to the particular institution.

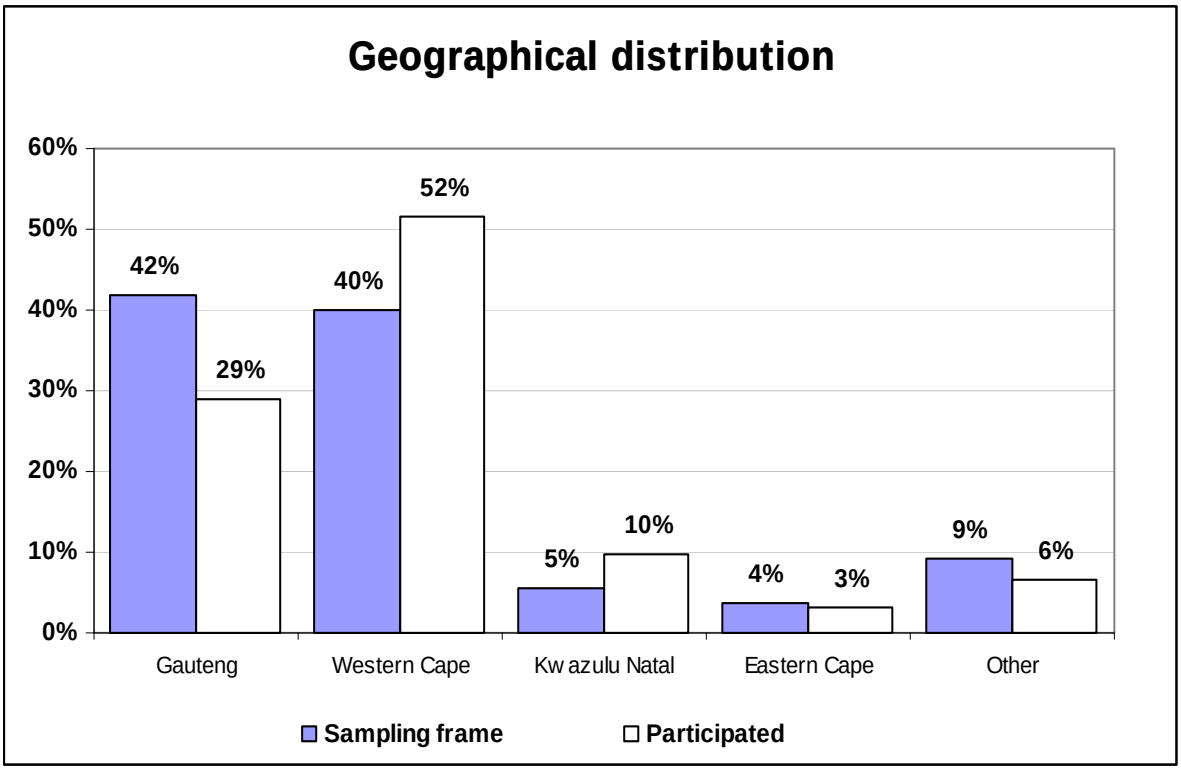


**Figure 9.3: Geographical distribution of sampling frame and research sample**

It must be recorded that several of the Western Cape organizations that took part, are part of national organizations, but to simplify their participation, they preferred their Western Cape branches to participate in the survey. By the very nature of the distribution of economic activities in South Africa, and therefore the associated distribution of project management activities, one would expect the representation of Gauteng and the Western Cape to be in the majority by far.

The final sample is also well represented by different sizes of organization as measured by employee numbers (see Figure 9.4).

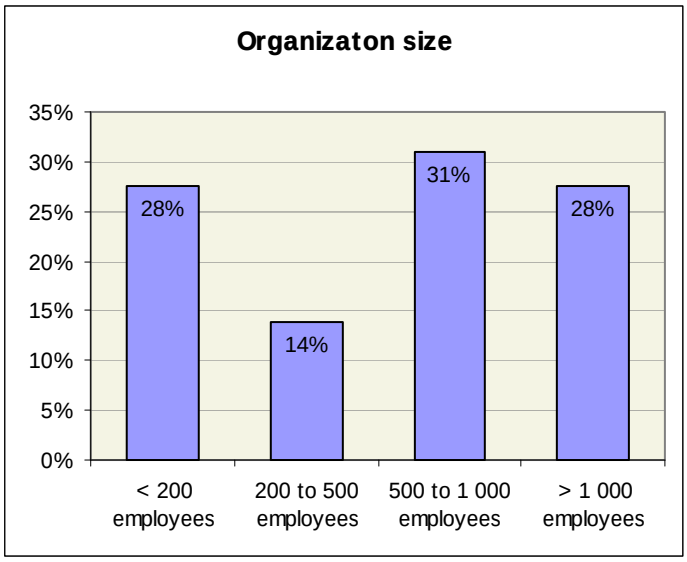


**Figure 9.4: Distribution by organization size of the research sample**

The number of years experience in project management was not set as a specific criterion, but it is reassuring to observe that the sample represents a wide range of project management experience by organizations. Figure 9.5 shows how the sample represents organizations that range from less than five years experience to up to more than fifteen years experience.

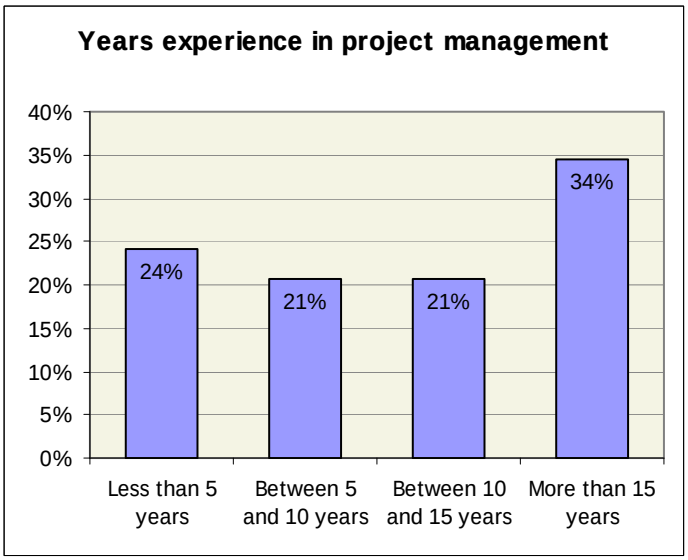


**Figure 9.5: Years experience in project management of the research sample**

Other categories measured were the reason why organizations do project management, and the percentage of project work relative to other work, as shown in Figure 9.6 and Figure 9.7 respectively.

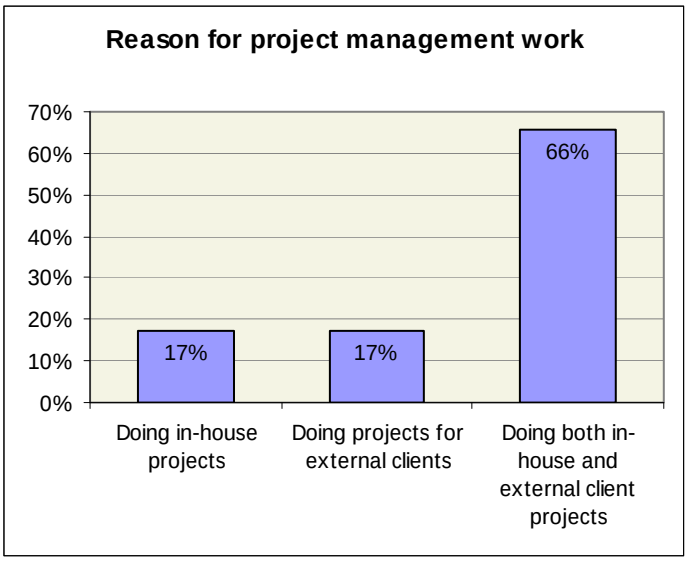


**Figure 9.6: Reason for project management work in the research sample**

The above graph shows that the majority of sampled organizations do both external client and in-house projects, with an equal split between organizations that do one type or the other. Together with the next graph, showing the *pro rata* portion of project work, one can regard the sample as fairly representative of the many different categories expected to make up the studied population.

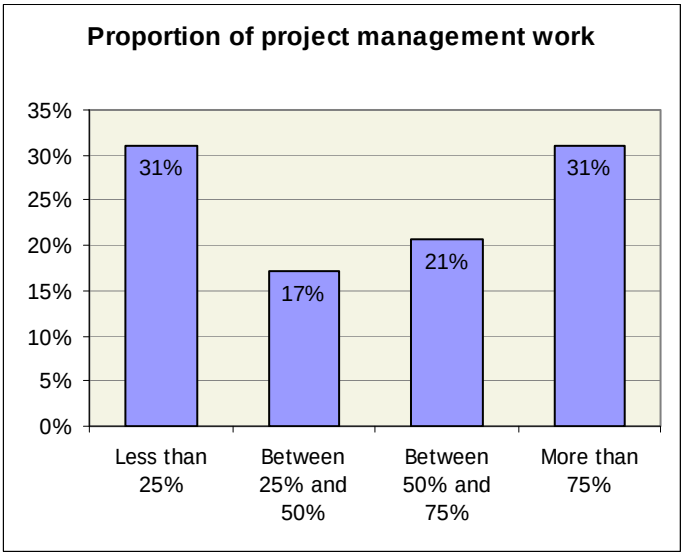


**Figure 9.7: Proportion of project work relative to other work of research sample**

Lastly, it was thought important to find out how organizations place their project managers within the reporting structures. One would have expected, because of the strong component of organizations with long years of project management experience, to see a greater tendency

towards a strong matrix approach. The first category, which reflects a special project unit from where dedicated project managers run projects across the organization, is typical of the strong matrix organizational form. Figure 9.8 shows that the majority of organizations (45%) make use of part-time project managers, which reflects rather a weaker matrix form.

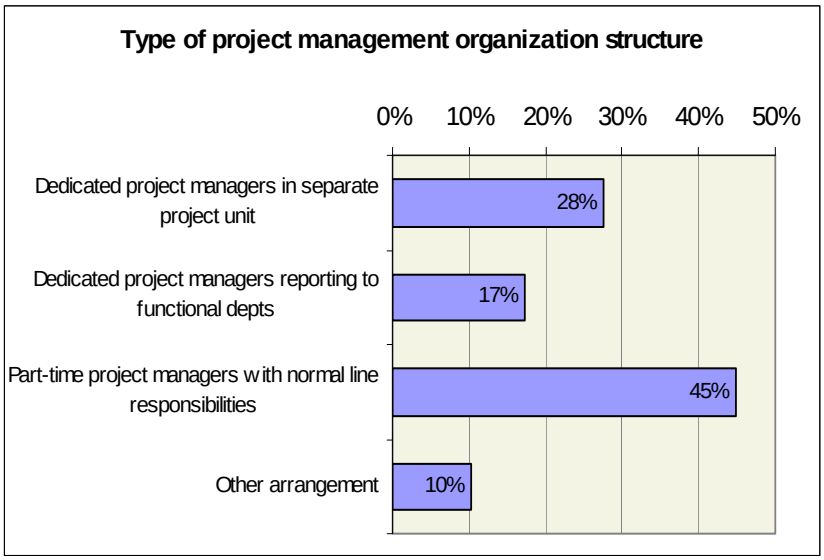


**Figure 9.8: Reporting structures of project managers in the research sample**

This picture may not be too surprising. Project management in South Africa is still relatively new, and experienced project managers may be difficult to recruit. Senior functional experts might still be the most ready source of project managers to organizations. At the same time, organizations may not be able to sacrifice their leadership and technical expertise in the functional departments.

## 9.8 SUMMARY

This chapter has dealt with the process of sampling and surveying, and also analysed the extent to which organizations and individuals responded.

The research has to take the shortcomings, as discussed before, into consideration; specifically it must accept that statistical extrapolation is not possible. Nevertheless, supportive evidence, although of a more qualitative nature, can be offered towards extrapolation. The response, in terms of organizational participation, has been fair (29 organizations, i.e. 26% of the sampling frame). These 29 organizations are widely

representative of different important categories of organizations involved in project management, as have been shown in the chapter. It does not discriminate in a major way against a particular category expected to be an inherent characteristic of the research population. The exception, as has been discussed, may be the IT industry sector. Although there is no reason to expect it to behave differently, one must be hesitant to merely make assumptions without studying this sector more extensively.

The response to questionnaires by individuals can be regarded as good (at 62%). This should allow one to put more confidence in the reliability with which the different variables per organization were measured.

The next chapter will address the analysis of the data, and report on the findings and the testing of the research hypotheses.

# CHAPTER 10

## ANALYSIS OF RESEARCH DATA AND FINDINGS

### 10.1 INTRODUCTION

This chapter records the statistical procedures followed to test the study hypotheses and to find out to what extent the empirical evidence supports the literature study pointing to an apparent relationship between organizational culture and project management effectiveness. The chapter is introduced by briefly reviewing the research hypotheses, thus summarizing what the study expects to find. The first part of the statistical analysis addresses the reliability of the survey instruments and the degree of confidence they instil for judging the findings of hypothesis tests.

Spearman's rank correlation tests have been performed to test the hypotheses. The use of a non-parametric method was preferred because of insufficient knowledge of the frequency distribution of the variables and the linearity of relationships between variables.

### 10.2 SUMMARY OF RESEARCH AIMS AND HYPOTHESES

The underlying question addressed by this study is whether the concept of a supportive organizational culture for project management exists in the empirical world. The related question is whether this concept is definable, measurable, and able to discriminate between organizational environments that are supportive or non-supportive to project management, as measured by corresponding variance in project management effectiveness.

Extensive literature support was found to justify the assumption that organizational culture could explain variance in project management effectiveness. The literature also provided sufficient evidence to define the dimensions of an organizational culture framework which could be expected to impact on the key functions of project management.

The research hypotheses, following from the above, states that:

- that organizational culture plays an important role in the effectiveness of project management processes and outcomes in an organization; and

- each dimension chosen to define the culture construct, was selected because of its believed impact and therefore should individually correlate with project management effectiveness.

## 10.3 STATISTICAL BEHAVIOUR OF THE SURVEY INSTRUMENTS

### 10.3.1 The organizational culture scale

The instrument was tested for reliability by calculating the Cronbach alpha coefficients for the instrument as a whole and for each dimension of the organizational culture construct. Alpha coefficients for the dimensions of the construct and for the overall instrument were calculated based on the organization scores (n=29). The following table shows the respective alpha coefficients.

**Table 10.1: Reliability testing of the organizational culture instrument**

| No | Description | Alpha: organization score (n=29) |
|---|---|---|
| Overall reliability of organizational culture instrument | | 0,98 |
| Dim 1 | Philosophy about people | 0,91 |
| Dim 2 | Performance management philosophy | 0,92 |
| Dim 3 | Locus of decision-making | 0,84 |
| Dim 4 | People management philosophy | 0,92 |
| Dim 5 | Cross-functional integration philosophy | 0,88 |
| Dim 6 | Competitiveness philosophy (external vs. internal) | 0,93 |
| Dim 7 | Organizational direction | 0,90 |
| Dim 8 | Communication philosophy | 0,93 |
| Dim 9 | Personal competency philosophy | 0,88 |
| Dim 10 | Process and systems support philosophy | 0,88 |
| Dim 11 | Flexibility philosophy | 0,85 |
| Dim 12 | Decision-making rationale | 0,79 |

Nunnally (1970: 112) states that commercially used tests range between 0,80 and 0,95 reliability. With the exception of the last dimension (alpha = 0,79), all alphas are above the 0,80 reliability criterion. The instrument was therefore considered as adequately reliable for using its data in the testing of the research hypotheses.

The above computations, performed by means of Statistica 7, are shown in APPENDIX N.

### 10.3.2 The project management effectiveness scales

The project management effectiveness instrument was subjected to the same reliability test as the organizational culture construct. The following table shows the reliability coefficients, calculated for the set of project management effectiveness instruments, based on the organization scores (n=29).

**Table 10.2: Reliability testing for the project management effectiveness instrument set**

| No | Description | Alpha: organization score (n=29) |
|---|---|---|
| Total reliability of the project management effectiveness instrument | | 0,92 |
| Dim 1 | Project management outcomes | 0,93 |
| Dim 2 | Meeting strategic organizational goals | 0,88 |
| Dim 3 | Rational decision-making | 0,85 |
| Dim 4 | Effective tools and systems | 0,90 |
| Dim 5 | Application of methodology | 0,86 |
| Dim 6 | Effective project leadership | 0,81 |
| Dim 7 | Effective project communication | 0,85 |
| Dim 8 | Adequacy of resources | 0,79 |
| Dim 9 | Customer integrated in the process | 0,78 |
| Dim 10 | Supportive organization | 0,84 |
| Dim 11 | Integration into organization | 0,83 |

These alpha coefficients lie between 0,78 and 0,93. Only two dimensions test below the 0,80 mark, but are still very close at 0,78 and 0,79. These set of instruments can therefore, similarly, be judged as adequately reliable for performing the statistical analyses.

The Statistica reliability results for the project management effectiveness construct, is shown in APPENDIX O.

### 10.3.3 Validity of the project management effectiveness scales as a norm for comparison

Besides the reliability of the instrument indicated by the alpha calculations shown in the previous section, a further test was done to determine whether the instrument behaves as a valid measure of project management effectiveness, thus showing a reasonable measure of content validity (Nunnally, 1970: 135-136). The extent of the literature analysis and the subsequent evaluation by a panel of experts has already given a fair level of confirmation that the selected items are representative of the domain of project management effectiveness.

A further test was done on the data collected to provide empirical evidence that the content of the construct is valid. The eleven dimensions of the construct comprise nine dimensions that can be viewed as success factors or leading indicators of project management success. Success is defined as meeting the project management results criteria of time, performance, budget, and customer satisfaction (Pinto & Slevin, 1988: 68). Traditionally, project management studies have mostly emphasized successful project management as a dependent variable, thereby focusing primarily on the outcome criteria. The project management effectiveness construct of this study has one dimension addressing these outcome criteria. One would expect that, if the content of the construct reflects a valid choice of items, a composite score of the leading indicator dimensions would show a relatively strong positive correlation with the score on the outcomes dimension.

A Spearman correlation test was performed to test this assumption. The test indicated a strong correlation ($r = 0,81$), which is statistically significant at below the 1% level ($p < 0,01$), as shown in Figure 10.1.

This high consistency between the two components, and the statistical significance of the finding, contributes to the belief that the instruments measure variables indicative of effective project management.

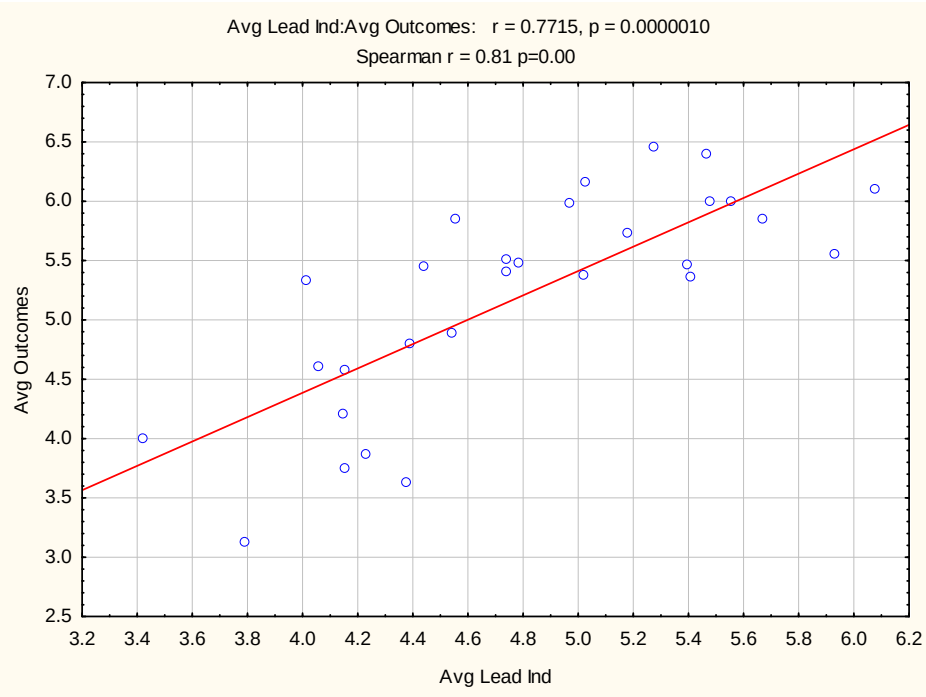


**Figure 10.1: Correlation between leading indicator dimensions and outcome dimension of the project management effectiveness construct**

## 10.4 TESTING OF HYPOTHESES

### 10.4.1 The main research hypothesis: The assumed relationship between organizational culture and project management effectiveness

The main research hypothesis takes the viewpoint that organizational culture plays an important role in the effectiveness of project management processes and outcomes in an organization. The culture construct, and its direction of measurement, has been so defined that a composite culture score is expected to positively correlate with a composite score of project management effectiveness.

The null hypothesis therefore states that the composite project management effectiveness score is unrelated to the composite organizational culture score. Against this an alternative hypothesis is formulated to state that project management effectiveness is positively related to

the overall construct of organizational culture as defined for this research. A significance level of 0,05 has been specified to examine the hypotheses of this study.

A Spearman Rank correlation test was performed and a positive correlation coefficient ($r = 0,53$) was found with $p < 0,01$. The null hypothesis therefore has to be rejected in favour of accepting the alternative hypothesis (the research hypothesis) that organizational culture positively correlates with project management effectiveness. The correlation is significant below the specified 0,05 level and even below a 0,01 significance level.

The Statistica computations of the correlation tests are shown in APPENDIX P.

This finding supports the primary aim of the study that organizational culture impacts on project management in a statistically significant way. To fully test the aims of the research, a set of secondary hypotheses have been formulated that anticipate relationships between each one of the twelve dimensions selected for the culture construct and the composite score on the project management effectiveness scale. The formulation of these hypotheses follows in the next sections.

### 10.4.2 Secondary hypothesis 1: The relationship between *organizational direction* and project management effectiveness

It is believed that a stronger presence of strategic direction, which can align and focus the goal-directed behaviour of organizational parts, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on the dimension is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.3 Secondary hypothesis 2: The relationship between *competitiveness orientation* and project management effectiveness

It is believed that a stronger external focus as the basis of a competitiveness orientation, which places customers and the market in the focus of organization members, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so

designed that a higher score on the dimension is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.4 Secondary hypothesis 3: The relationship between *decision-making rationale* and project management effectiveness

It is believed that a healthy decision-making rationale, which places organizational interests and rational decision-making ahead of personal agendas, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of rational decision-taking, and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.5 Secondary hypothesis 4: The relationship between *cross-functional integration philosophy* and project management effectiveness

It is believed that a superior level of cross-functional integration, which cultivates the collaboration between departments and between members of different departments and functional backgrounds, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.6 Secondary hypothesis 5: The relationship between *communication philosophy* and project management effectiveness

It is believed that a superior communication flow atmosphere, which fosters trust, knowledge sharing, distribution of information, and joint problem-solving, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.7 Secondary hypothesis 6: The relationship between *locus of decision-making* and project management effectiveness

It is believed that a decentralized locus of decision-making, which encourages qualified people to take decisions in respect of work under their control, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of delegation and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.8 Secondary hypothesis 7: The relationship between *people management philosophy* and project management effectiveness

It is believed that an advanced people management orientation, which encourages participative and supportive leadership ahead of command and control management styles, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of leadership orientation and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.9 Secondary hypothesis 8: The relationship between *flexibility philosophy* and project management effectiveness

It is believed that an atmosphere of flexibility in work practices, which encourages creative and risk-taking behaviour ahead of close supervision and working by the rules, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of flexibility and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.10 Secondary hypothesis 9: The relationship between *philosophy about people* and project management effectiveness

It is believed that a human-directed people orientation, which values staff as assets, pays attention to their personal well-being, and fosters sound inter-personal relationships, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of people-directed attention and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.11 Secondary hypothesis 10: The relationship between *personal competency philosophy* and project management effectiveness

It is believed that a personal competency development emphasis, which values personal competency and the development of appropriate skills for different levels of staff, and therefore also project management skills, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher emphases on training and skills development programmes and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.12 Secondary hypothesis 11: The relationship between *process and systems support philosophy* and project management effectiveness

It is believed that a process and systems orientation emphasis, which values the setting up of standardized processes and systems to support and streamline functioning in the organization, and therefore also project management systems, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes a stronger emphasis towards standardisation and putting expertise into systems, and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.13 Secondary hypothesis 12: The relationship between *performance management philosophy* and project management effectiveness

It is believed that a strong performance management emphasis, which sets clear performance targets, and manages people towards a discipline of achieving their targets, will define a more supportive environment for the effectiveness of the project management processes and outcomes in an organization. The composition of the items of this dimension has been so designed that a higher score on this dimension denotes higher levels of discipline and commitment to performance objectives, and is expected to positively correlate with the composite score on the project management effectiveness scale.

### 10.4.14 Statistical testing of the secondary hypotheses

The secondary hypotheses were similarly tested by performing Spearman Rank correlations on the data. The results of these tests are shown in Table 10.3. The results of the main hypothesis, namely the overall relationship is for the sake of completeness also shown in the table. The Statistica computations are shown in APPENDIX P.

With the possible exception of *philosophy about people* (dimension 9), which is significant at the 5% level, all other null hypotheses have to be rejected at a significance level of better than 5%, implying that the secondary research hypotheses (the alternative hypotheses) can be accepted in all these cases. The three dimensions that are statistically significant at better than 1% are marked with **, and the ones that are significant at better than 5%, with *.

Whether to accept or reject the null hypothesis in the case of dimension 9 (given that $p = 0{,}05$) is debatable. A product moment correlation test reveals a much stronger correlation ($r = 0{,}52$; $p = 0{,}004$). If the underlying construct can be assumed to be normally distributed, this test would clearly indicate the rejection of the null hypothesis, and the acceptance of the research proposition that a people-oriented organization is more supportive to project management than an organization that is less people-oriented. In the light of the uncertainty regarding the distribution, one must rather rely on the non-parametric Spearman test, which still rejects the null hypothesis at the 5% level, but only marginally so. The information from the parametric test, however, lends some further evidence for rejecting the null hypothesis.

**Table 10.3: Spearman rank-order correlation coefficients indicating the relationships between organizational culture, and its dimensions, and project management effectiveness (N = 29)**

| No | Description | Correlation coefficient (r) | p |
|---|---|---|---|
| Organizational culture composite score ** | | 0,53 | < 0,01 |
| Dim 1 | Organizational direction * | 0,42 | 0,02 |
| Dim 2 | Competitiveness philosophy * | 0,45 | 0,01 |
| Dim 3 | Decision-making rationale * | 0,51 | 0,01 |
| Dim 4 | Cross-functional integration philosophy ** | 0,52 | < 0.01 |
| Dim 5 | Communication philosophy ** | 0.54 | < 0.01 |
| Dim 6 | Locus of decision-making * | 0,42 | 0,02 |
| Dim 7 | People management philosophy ** | 0,57 | < 0.01 |
| Dim 8 | Flexibility philosophy * | 0,43 | 0,02 |
| Dim 9 | Philosophy about people | 0,37 | 0,05 |
| Dim 10 | Personal competency philosophy * | 0,45 | 0,01 |
| Dim 11 | Process and systems support philosophy * | 0,47 | 0,01 |
| Dim 12 | Performance management philosophy * | 0,50 | 0,01 |

* p<0,05; ** p < 0,01

The main culture construct and all its dimensions, with the exception of dimension 9, demonstrate moderate to strong correlations (between 0,43 and 0,57). The dimensions showing correlation coefficients of 0,5 or higher place specific emphasis on the need for organizations to have a collaborative atmosphere between departments (dimension 4); to have a strong presence of communication and information sharing (dimension 5); to encourage supportive and participative leadership styles (dimension 7); to be rational in their decision-making (dimension 3); and to have a strong performance ethic (dimension 12).

## 10.5 DIFFERENCES BETWEEN HOW SENIOR MANAGEMENT AND HOW LOWER LEVELS RESPOND IN RESPECT OF THEIR ORGANIZATIONS

Based on certain literature viewpoints seen earlier, a question concerning whether senior management responds more favourably about their organizations than lower level staff, could

be asked. Although this was not a key question of this study, it is nevertheless an interesting question for multilevel research in organizations, such as this particular study.

In sixteen of the participating organizations, organizational culture questionnaires were completed by both senior managers and other levels. Average culture scores for senior managers and average culture scores for other levels could therefore be computed for each of these sixteen organizations. From the data it appeared that senior managers in fact rate their organizations higher. An analysis of variance (ANOVA) test was performed by making use of Statistica 7 to test a null hypothesis that there is no difference between the ratings given by senior managers and the ratings given by other levels.

Based on the results (see APPENDIX R), this null hypothesis must be rejected, at a 5% significance level, in favour of an alternative hypothesis that states that senior managers are inclined to rate their organizations more favourably ($p = 0{,}026$).

The project management effectiveness measurement had a dedicated questionnaire for senior management assessment. Although the three different project management questionnaires did not measure the same items, there was some overlap, and each of the three viewed the effectiveness of project management in the same organization simply from another angle. One could argue that, on average, they should display very similar assessments.

A similar ANOVA test, was constructed to test the average project management effectiveness scores for each organization by questionnaire type (i.e., senior manager questionnaire, project manager questionnaire, and team member questionnaire), for a null hypothesis that the three questionnaires should reflect the same underlying perception. With the aid of a Bonferroni test, the findings again lead to the rejection of the null hypothesis, at a 5% ($p=0{,}036$) significance level, in favour of believing that senior managers may be inclined to rate their organizations more favourably. These results are also displayed in APPENDIX Q.

Admittedly, these findings are not conclusive and are offered as an interesting observation rather than for generalization purposes. Still, researchers should not ignore this potential source of systematic bias and should cautiously plan who they target in organizations to respond to survey questionnaires.

## 10.6 CONSTRUCT VALIDITY

Due to the limited scope of the empirical research, there is not enough evidence to suggest construct validity of the two constructs. Construct validity generally involves examining aspects such as content validity, internal consistency of the operationalization, convergent and discriminant validity, and nomological validity (Venkatraman & Grant, 1986: 77-78). Arguments for content validity can be made based on the high agreement of the organizational culture construct with previous constructs of similar nature, and in the case of the project management effectiveness construct, based on a thorough literature analysis and expert panel involvement. The reliability tests (Cronbach alpha coefficients) provide strong evidence towards the internal consistency of both constructs, but do not give adequate evidence to test the unidimensionality of the dimensions (Venkatraman & Grant, 1986: 82). The way the two constructs behaved in terms of their expected theoretically predicted relationship, suggests a fair degree of nomological validity (Venkatraman & Grant, 1986: 82).

The further criteria for construct validity, namely unidimensionality, convergent validity and discriminant validity, are not that easily achieved in research projects that involve smaller samples. Testing these inevitably requires factor analytical techniques which in turn require much larger samples. Kerlinger (1986: 593) proposes ten subjects per data item. Since this research involved only a limited sample of organizations, it did not justify more advance construct validation analyses, such as structural equation modelling as proposed by Bagozzi, Yi and Phillips (1991).

Comprehensive construct validation is recognized as a complex task with many pitfalls (Bagozzi, Yi & Phillips, 1991: 423). Perhaps for this very reason, construct validity testing appears to be insufficiently addressed in organization level construct development, for example: in organizational culture research (Wilderom, *et al*., 2000: 196); and in strategy construct development (Venkatraman & Grant, 1986: 73).

Although construct validation is complex and difficult to accomplish, it is not suggested that it be ignored. This remains a pertinent shortcoming of this study. Construct validation should be a key aim of further research in respect of this relationship between organizational culture and project management effectiveness. Kerlinger (1986: 593) stresses the importance of replicating research, with improvements from one study sample to the next, to succeed with

factor analysis. Likewise, Venkatraman and Grant (1986: 83-84) recognize that construct validation can normally not be achieved within one study, but rather follows from an ongoing process of research.

## 10.7 CONCLUSION

This chapter addressed the statistical processing of the empirical data collected and the testing of the various research hypotheses. As a first step, reliability computations had been performed to verify the reliability of the various instruments used to collect the data.

The findings provide substantial evidence that organizational culture is correlated with the effectiveness of project management in a statistically significant way (below 1%). All the individual dimensions of the culture construct also correlate with the project management effectiveness score. One dimension is marginally significant at the 5% level; the others are all significant at below the 5% level.

# CHAPTER 11

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 11.1 INTRODUCTION

This chapter gives a summary of the research and the main findings and conclusions reached from the data collected. The study has succeeded in addressing, and offering answers to, a persistent question in the project management literature, namely how organizational culture impacts on project management in matrix project management organizations. The study findings should provide important alternative answers to executive management in South Africa struggling to make project management function as it should. Instead of focusing their attention primarily on the internal systems and processes of the project management methodology, this study directs them to pertinent sources of problems within the organization itself. The question that an organization should address first is whether it has an organizational culture that supports the project management way of goal achievement.

Project management is a powerful methodology for delivering new products or services within time, budget, and to specification, thereby enhancing competitiveness. Moreover, it is a methodology that is characterized by its discipline of keeping people accountable for meeting the objectives of uncertain, non-routine type work.

South African, as a developing economy, needs to turn creative and entrepreneurial ideas into successful projects in a competitive way. Also in the public sector there is a huge need for service delivery and infrastructure provision. National and local government structures urgently need the economic and accountability benefits of effective project management. However, these structures often suffer from a civil service bureaucracy heritage. Their cultures are characterized by cumbersome rules and processes that inhibit the creative development of solutions. Typically, project management finds itself constrained by drawn out serial processes that move from one department and project manager to the next. Project managers are given minimal authority and accountability is hard to pinpoint.

It is therefore believed that the findings of this study are relevant, not only because they fill an important gap in the scientific body of project management knowledge, but also because they

can make a contribution to the practice of project management, in industry and in government, at an appropriate time in South Africa.

The chapter take the findings and make concrete recommendations to management. Conclusions about the shortcomings of the study and their implications for generalizability of the study are addressed. This chapter concludes by viewing this study in terms of new directions it offers for research in project management.

## 11.2 REVIEW OF THE PURPOSE OF THE RESEARCH

The study placed focus on the challenges faced by functionally structured organizations that apply project management by making use of matrix management principles. The typical problems encountered by this class of organizations, had been widely reported in the project management literature. Since many of these problems were related to issues such as leadership, team dynamics, authority clashes, decision-taking practices, and organizational priorities and value systems, several authors had been advocating the need to have a supportive organizational culture for project management.

This study concept was formed around the assumption that organizational culture is likely to impact upon the functioning of project management. The main question was whether the numerous loosely related references to issues between the organization variables and project management, were in fact defining an underlying construct of organizational culture. The corresponding question was whether this culture could be defined as a set of measurable dimensions that could discriminate between supportive and unsupportive organizational cultures in respect of project management.

The final aim was to seek new understanding with which to assist organizations in their attempts to establish effective project management capabilities. For a long time, this domain had been troubled by numerous obstacles and questions, but it could not be offered many answers substantiated by empirical research.

## 11.3 THE THEORETICAL PROPOSITION

The theoretical examination of the project management literature provided ample evidence to define a construct of organizational culture which also showed a fair level of agreement with survey type constructs that had been used in other studies of organizational culture. The direction of measuring the variables had been so chosen that higher scores were expected to positively correlate with higher levels of project management effectiveness.

A thorough literature study was undertaken to develop a multi-dimensional construct of project management effectiveness. Because the study emphasis was on project management as a sustainable capability, measuring only the achievement of project management outcomes was considered too narrow for the purpose of this study. The construct therefore includes the measurement of other satisfaction levels in respect of, for example, project management processes, systems and support from the organization.

The main hypothesis of the study was formed on the belief that project management effectiveness would positively correlate with scores on the organizational culture construct. In other words, it meant that project management would be more effective in organizations with cultures characterized by:

- a sense of organizational direction that focuses people around shared organizational goals;
- an external customer or market emphasis;
- an aptitude for collaboration and teamwork across departments;
- rational decision-making;
- free flow of communication and information;
- participative and supportive leadership;
- treating people as worthy human assets;
- flexibility and openness to creativity;
- delegation of decision-making;

- a high performance ethic;
- a belief in personal competence and quality training; and
- a belief in empowering people through standardized processes and supportive systems.

The above theoretical proposition was not merely formed around a generic construct to test for the possible impact on project management. Each one of the dimensions selected has been anchored in strong evidence in the project management literature that it is likely to impact on the effective functioning of project management.

## 11.4 THE EMPIRICAL RESEARCH PROCESS

The data collection process involved the completion of questionnaires by target groups in participating organizations. In each organization four different questionnaires were required to be filled in, namely:

- one for measuring culture in the organizational environment around project management;
- one for measuring a senior management evaluation of what project management has achieved for the organization;
- one for measuring how project managers experience the project management tools and resources to their disposal; and
- one for measuring how project team members experience their involvement in projects.

The population comprising the type of organizations targeted for this study has been difficult to identify empirically. To overcome this problem, the population was approximated by drawing up a sampling frame of organizations believed to meet the criteria set for the target population. A number of people knowledgeable in project management and involved in industries where project management is normally practiced, were consulted. A list of 110 organizations comprised the sampling frame for the survey. To get a large enough sample, all organizations were contacted for participation. A total of 31organizations agreed to take part

of which 29 organizations (26% of the 110) adequately completed questionnaires for the data to be used in the statistical analysis.

The 29 participating organizations gave access to 603 individuals to whom questionnaires in the four different categories could be administered. A total of 375 usable questionnaires were received back for a response rate of 62%.

Spearman Rank correlation was used to test the research hypotheses. Cronbach alphas were calculated for all the dimensions comprising the two main constructs to test the instrument reliabilities.

## 11.5 THE FINDINGS OF THE RESEARCH

The research has found that the concept of a supportive organizational culture for project management is a construct that exists in the empirical domain. Furthermore, the study has collected evidence to suggest that it can be defined in a consolidated way, that it can be measured, and that it offers substantial explanation to different performance levels of project management as an organizational capacity.

The statistical analysis showed a statistically significant correlation between the organizational construct as a whole and project management effectiveness. The correlation coefficient of 0,53 indicates a moderately strong relationship. The significance level of better than 0,01 further supports the integrity of this finding as relevant to practicing project management organizations.

The dimensions of the construct were similarly tested for relationships with project management effectiveness. All the dimensions correlated with project management effectiveness at a significance level of 0,05 or better. The implication is that the construct composition and the item selection does measure many of the important underlying components of a project management supportive organizational culture, and constitutes a necessary collection of dimensions to test for project management supportiveness. Sufficiency, however, cannot be proved by a study of this scope as a much broader range of variables will have to be tested to discover also those dimensions that do not show a relationship.

The following table shows the relative importance and significance of the individual culture dimensions to the effectiveness of project management.

**Table 11.1: Statistical findings in respect of cultural dimensions**

| No | Description | Correlation coefficient (r) | p |
|---|---|---|---|
| **Dimensions that show a moderate to high correlation (> 0,5) at a better than 0,01 significance** | | | |
| Dim 4 | Cross-functional integration philosophy | 0,52 | < 0.01 |
| Dim 5 | Communication philosophy | 0.54 | < 0.01 |
| Dim 7 | People management philosophy | 0,57 | < 0.01 |
| **Dimensions that show a moderate to high correlation (> 0,5) at a 0,01 significance level** | | | |
| Dim 12 | Performance management philosophy | 0,50 | 0,01 |
| Dim 3 | Decision-making rationale | 0,51 | 0,01 |
| **Dimensions that show a moderate correlation (> 0,4) at a better than 0,05 significance level** | | | |
| Dim 1 | Organizational direction | 0,42 | 0,02 |
| Dim 6 | Locus of decision-making | 0,42 | 0,02 |
| Dim 2 | Competitiveness philosophy | 0,45 | 0,01 |
| Dim 8 | Flexibility philosophy | 0,43 | 0,02 |
| Dim 10 | Personal competency philosophy | 0,45 | 0,01 |
| Dim 11 | Process and systems support philosophy | 0,47 | 0,01 |
| **Dimensions that show a moderately low correlation (> 0,3) at a 0,05 significance level** | | | |
| Dim 9 | Philosophy about people | 0,37 | 0,05 |

The table shows that only one dimension (Dim 9) may be in question, because it has a slightly lower correlation coefficient than the others and because it is marginally significant at the 0,05 level. Standard parametric correlation tests reveal a much stronger correlation and a statistical significance of better than 0,01. Together with the strong literature support for people concerns in project management, it would not be appropriate to discard this dimension as an ingredient of a project management organizational supportive culture.

## 11.6 IMPLICATIONS FOR MANAGEMENT

Executive managers in organizations are often brought to the belief that project management can solve many of their problems in streamlining project delivery, meeting project budgets, doing project work faster, and having a capability that will take the daily coordination of inter-departmental work out of their hands. Other benefits they may expect are increased customer involvement, processes to deal with external stakeholders and pressure groups, and the pin-pointing of accountability. Examples of these benefits can be found in Kerzner (2001b: 1, 2, 34, 85) and in Cleland (2001: 7, 39-42).

Organizations are similarly convinced that the systems and associated methodologies are well-defined and documented, and available to be imported into the organization via training courses and management consultation.

However, many organizations have learnt that these benefits are not that easily accomplished, despite a strong commitment to the implementation of appropriate systems and processes and to the training of project staff. More recently, project management researchers have been blaming dysfunctional project management to the wrong organizational culture. However, the majority of these texts would emphasize narrow or one-dimensional views of organizational culture, an approach that can hardly form a basis for an organizational culture change program.

This study has found empirical evidence to support the proposition that organizational culture, over a broad spectrum of typical culture dimensions, impacts on project management. The significance of these findings is that project management cannot be treated as an independent methodology that could be installed according to a set of blueprint plans. Project management is a philosophy that has to integrate into the organizational value systems and, hence, will be in competition with other management philosophies and values in the organization.

In its early years, project management was mainly used for very large projects of extended duration. Project teams were relatively permanent and a stable project hierarchy defined the normal day-to-day reporting structure for project team members. The concept of a project team culture was often used to define the team behavioural environment that would lead to better teamwork and project management performance. Because of the semi-permanency of

project teams, these cultures could develop and become strong over time, and they could even become resistant to any negative cultural influences from a parent organization.

The problem, however, in the case of hybrid organizations and matrix project management is that projects are generally smaller, of shorter duration, and project teams are fluid. Functional experts and other organizational resources migrate from project to project, and often work on multiple projects at the same time. It is therefore logical to expect that the organizational culture will be the dominant influence when an *ad hoc* project team is formed, and that the project team culture will closely resemble the organizational ways of functioning. Project team members have to stay answerable to their line managers for their regular duties and have to conform to their ways of managing. The traditional project team values that emphasize, for example, collective effort, flexible reporting and recognition of the authority of expertise, regardless of hierarchical status, is seldom found in the traditional hierarchical organizational culture that often encourages opposing styles and values.

What this study has achieved, is that the kind of intuitive reasoning followed above, can now be backed by empirical support. It is possible to confidently approach these types of organization and advise them against dealing with project management as an independent capability. A decision to invest in project management must be taken together with a willingness to address cultural change. This is a decision that may have far wider implications for the organization than originally anticipated, and it will require substantial executive management support and a clear strategic vision to succeed.

Unlike in the past, a cultural model that is in line with existing multi-dimensional cultural definitions can be offered to focus the scope of changes needed for project management. On the one hand, it exposes the width of organizational culture that needs to be considered, but it also narrows it down to a definable set of cultural dimensions.

The organizational culture instrument, developed as part of the research, is further important since it will offer organizations the opportunity to measure themselves in relation to each of these dimensions. To an organization, this could form a valuable source of information when setting up strategic project management structures.

## 11.7 SHORTCOMINGS AND LIMITATIONS FOR GENERALIZATION OF THE FINDINGS

### 11.7.1 Geographical validity

The empirical examination has been confined to organizations within South Africa. Although the theoretical position has taken an international perspective, consulting research literature from within the English speaking world, empirical evidence has only been collected within South Africa. Therefore, it is only possible to generalize the findings to the South African population studied.

Yet, based on the theoretical evidence collected, the same hypotheses would be put forward for empirical testing in the wider western economies. However, without conducting such a survey, generalizing the results beyond South Africa is not feasible.

### 11.7.2 The sampling frame

The sampling frame used as a basis for the survey is not exhaustive. It can be expected that many more organizations exist in the particular categories. It is expected that an extended study of the population would have revealed more matrix project environments within, for example, the civil engineering consulting sector, the mining industry, the IT industry, the financial services industry, governmental departments, provincial governments, municipalities, and parastatals such as Eskom, Transnet and Telkom.

The criteria for selecting the organization sampling frame were not simple. It frequently meant that a detailed discussion had to be conducted with a knowledgeable contact person before it could be determined whether an organization met the criteria to take part.

The aim was rather to focus on putting together, within a reasonable time, a balanced portfolio of organizations by consulting with people with many years experience within the project management related industries. The list compiled for this study, had a balanced representation in respect of organization size, years experience in project management, type of projects and type of industry. Admittedly, the information technology sector was not adequately represented in the research sample, and extrapolation of the findings should be interpreted accordingly.

There was also the danger of extending the list by a long list of organizations belonging to a particular category, for example, government departments, municipalities, or consulting engineers. This could easily skew the results towards a particular industry type, or towards organizations that had only recently adopted project management in a cross-functional context.

### 11.7.3 Sampling

Due to the involved process of negotiating participation, a random way of selecting participants could not be implemented. All organizations in the sampling frame were invited and given the opportunity to take part. There was no way that participation could be influenced to include certain organizations, or exclude organizations that volunteered to take part. Even organizations that at a very late stage of the research made the decision to take part, were given the opportunity, even if it had meant extending the deadline of the study by a further two weeks.

The eventual sample of organizations that had participated was inspected with regard to how it compared to the sampling frame. It was found to be representative of the sampling frame in most respects, as shown in section 9.7.3.

### 11.7.4 Direction of impact

The study has gone from the assumption that organizational culture (the independent variable) impacts on the effectiveness of project management (the dependent variable), and therefore there is an implied causality. Because the study is correlational, this direction cannot be proved by the data obtained, merely the association between the two constructs.

However, one should further be careful in assuming a direction of causality in an empirical sample such as the one accessed in this study. It is not unlikely that, in some organizations, organizational culture might have been shaped by the gradual influence of a project management strategy. Organizations with a high percentage of project activity and with many years of experience in project management might have followed this route. The causal direction could easily have been influenced by people from the project manager ranks that had progressed to executive management positions.

This possibility of reversed causality does not alter the implications of this study for organizational management. Project management has been found by this study to be more effective in organizations with supportive cultures. Whether project management has started to function well because of the organizational culture, or whether the presence of project management has forced the culture to become more supportive, is not so important. What is important is that the association (correlation) between the two phenomena is strong. The choice for executive managers and organization development specialists lies between addressing these two apparent directions of causality. On the one hand, they can approach cultural change as integrally part of a strategy to establish project management. On the other hand, they can put all their focus on establishing the project management systems and blueprints in the hope that over time the project management influence will put pressure on the organizational environment to become more supportive.

It is believed that the true purpose of this study was to develop the first consolidated approach, i.e., to pre-empt and enable acceleration of the organizational change needed to cope with the project management philosophy.

### 11.7.5 Conclusion about generalizability

Considering the strength of the statistical findings and the statistical significance levels within which these findings have been made; taking into account the qualitative investigation done on the sample; and considering the strength of literature support for developing the hypotheses; there is reasonable evidence that these findings are generalizable within the South African project management environment.

However, researchers and consultants making use of these results should be aware of the potential shortcomings and some non-ideal ways that had to be used to get meaningful participation. In the end it was a trade-off between approximating a perfect statistical process and obtaining as much evidence from the empirical world as reasonably possible. It is believed that a fair compromise between statistical integrity and empirical representation has been achieved.

## 11.8 DIRECTIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The research has demonstrated that organizational culture, or even other variables at organizational level, is a fruitful field for further project management research. It has also shown that multi-dimensional approach to the measurement of project management effectiveness, and especially, taking an organizational capability perspective rather that a project perspective for measuring project management as a dependent variable, is a viable research option. It is recommended that more research be done around these two main constructs. The following is but a limited list of studies that could build on the work done in this study:

- surveys to test the same hypotheses in other parts of the world;
- surveys to study the impact of organizational culture on project management in narrower industry contexts;
- studies to refine, perhaps also shortening, the project management effectiveness questionnaire set;
- research to investigate ways of improving the extent to which the project management effectiveness questionnaires discriminate between strong and weak project management (there appeared to be a general tendency towards scoring the organization too favourably on these instruments, especially the senior management one);
- more research into operationalizing the culture dimensions of *decision-making rationale* (the organization's inclination away form political decision-making) and *process and systems support* (the organization's inclination towards systemizing its work in a constructive and empowering way).

The other important work that is needed to build upon this study is validating the constructs. In order to accomplish this, factor analysis and structural equation modelling techniques are needed, necessitating much larger samples of participating organizations. The scope of such research will most likely have to be expanded to beyond South Africa.

Research into the organizational context of project management is relatively young. In more recent literature, this apparent shortcoming, and the tendency of researchers to address this

area mostly by way of anecdotal accounts, has been questioned by serious scholars. It is believed that this study can break new ground to encourage a more scientific and large sample, comparative approach to empirical research into project management organizations.

## 11.9 FINAL CONCLUSION

This study has largely succeeded in achieving the objectives set at its beginning. The field of project management had offered limited consolidated evidence for addressing both the constructs of a supportive organizational culture for project management and for the measurement of organizational effectiveness in project management. However, the suggestion of a relationship between the two, although scattered across a wide spectrum of project management literature sources, was sufficiently strong to warrant this research. Given this status of the field or project management research, the study had to be largely exploratory in nature. The challenge was to construct a coherent picture from all these different pockets of information and to test whether this would hold as a hypothesis in the empirical domain.

Empirical evidence collected in this study lends strong support to the notion. Further refinement and research to enrich this organizational emphasis in project management theory is encouraged. Nevertheless, the real proof will rest with practically taking this approach to organizations and convincing them to address cultural change as part of their efforts at establishing project management, and judging whether such interventions impact positively on the project management function.

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# APPENDICES

# APPENDIX A:

# PROJECT MANAGEMENT EFFECTIVENESS ITEM POOL VERIFICATION: QUESTIONNAIRE TO EXPERTS

| Please rate the given items under each heading as to whether they belong to the concept of project management effectiveness at organizational level | **Include** | **Exclude** | **Unsure** |
|---|---|---|---|

## 1 Successful project management outcomes

The extent to which the operational project objectives are met on a consistent basis. This carries a similar meaning as the classical view on measuring project management success, but is meant here to describe average performance on projects over time.

| | | | **Include** | **Exclude** | **Unsure** |
|---|---|---|---|---|---|
| 1 | 1 | Projects consistently meet their cost targets | | | |
| 2 | 2 | Projects consistently meet time targets | | | |
| 3 | 3 | Projects consistently meet their technical performance specifications | | | |
| 4 | 4 | Projects consistently meet the required quality standards | | | |
| 5 | 5 | Clients or end-users are consistently satisfied with what our projects deliver | | | |
| 6 | 6 | Clients generally talk positively about our project work | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 2 Meeting organizational goals for project management

The extent to which the organizational expectations of project management are met. In other words, project management deliver the strategic benefits to the organization as a whole.

| | | | **Include** | **Exclude** | **Unsure** |
|---|---|---|---|---|---|
| 7 | 1 | Project management improves the ability of the organization to utilise its human resources and specialists | | | |
| 8 | 2 | Project management allows the organization to better respond to client demands | | | |
| 9 | 3 | Project management allows the organization to better manage legitimate stakeholder demands | | | |
| 10 | 4 | Project management creates a faster work flow in delivering new products | | | |
| 11 | 5 | Project management enhances the concurrent use of multi-functional inputs in new development work in the organization | | | |
| 12 | 6 | Project management succeeds to free top management from coordinating major new projects or developments | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 3 Project goal clarity and alignment

The extent to which project goals are clearly defined upfront and communicated to project participants, and the degree to which participants subscribe to these goals.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 13 | 1 | Project goals are clearly defined at start-up | | | |
| 14 | 2 | Project goals are made clear to all participants | | | |
| 15 | 3 | Project participants are committed to the achievement of project goals | | | |
| 16 | 4 | Project team members take ownership of project goals | | | |
| 17 | 5 | Team members actively participate in decision-making regarding the achievement of project goals | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 4 Rationality in project management

The extent to which project goals and decisions are based on an analytic approach and serving organizational goals, as opposed to following more of an intuitive approach and making decisions to serve personal interests and inter-departmental power struggles.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 18 | 1 | There is an emphasis on up-front project homework and feasibility studies | | | |
| 19 | 2 | Project estimates and planning are as far as possible done on factual and reliable information | | | |
| 20 | 3 | Care is taken to ensure that there is market or end-user support for the proposed project | | | |
| 21 | 4 | Personal interest and political considerations do not dictate project decisions | | | |
| 22 | 5 | Projects are not subject to unrealistic deadlines and targets | | | |
| 23 | 6 | Projects are continually reviewed to re-evaluate their viability and potential success | | | |
| 24 | 7 | Projects are rather terminated early or adapted when they are not meeting initial expectations | | | |
| 25 | 8 | It is customary to have formal reviews to learn from project failures and/or successes | | | |
| 26 | 9 | Project priorities are not changed too frequently | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 5 Appropriate project management methodology

The extent to which the organization has adopted a standardised methodology of project management with appropriate supportive systems, processes and procedures. The emphases are on supportive, smooth-running, familiar with, and accepted, as opposed to cumbersome and over-controlling

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 27 | 1 | The organization has a standardised and effective system for managing projects | | | |
| 28 | 2 | Project participants generally understand the project management procedures applied in the organization | | | |
| 29 | 3 | The organization has the ability to estimate and plan its projects with reasonable accuracy | | | |
| 30 | 4 | The project management process facilitate the implementation of projects with minimum start-up problems | | | |
| 31 | 5 | Project management process involves strong monitoring and control over activities on an ongoing basis | | | |
| 32 | 6 | There is an adequate focus on managing project risks | | | |
| 33 | 7 | Project scope is comprehensively and adequately defined | | | |
| 34 | 8 | The organization has appropriate tools and systems to support the project management process | | | |
| 35 | 9 | Project participants generally believe in the project management procedures applied in the organization | | | |
| 36 | 10 | Project scope is changed only in a controlled way | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 6 Effective project organization and authority structure

The extent to which there is an effective way of organising project teams, assigning responsibilities and delegating authority to make decisions.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 37 | 1 | Project managers are given the necessary authority to excute their responsibilities | | | |
| 38 | 2 | Project team members understand their project responsibilities | | | |
| 39 | 3 | There are clearly laid down decision-making principles | | | |
| 40 | 4 | Decision-making is smooth and efficient | | | |
| 41 | 5 | Project teams are generally effectively structured and mobilised | | | |
| 42 | 6 | Project managers are held accountable for meeting their responsibilities | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 7 Access to needed resources

The extent to which project managers can rely on a strong enough resource base and have sufficient control over accessing and managing needed resources

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 43 | 1 | Project managers are adequately empowered to access the required resources for their projects | | | |
| 44 | 2 | The organization is committed to providing the agreed upon resources | | | |
| 45 | 3 | Project managers can normally rely on the work output of organizational resources | | | |
| 46 | 4 | The organization makes adequate provision for project funding | | | |
| 47 | 5 | The availability of resources are taken into account when deciding upon projects and setting priorities | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 8 Supportive organization

The degree to which top management and the organization as a whole are understanding and supportive of the project management function and that project priorities are aligned with organizational priorities.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 48 | 1 | Top management have an understanding of what project management entails | | | |
| 49 | 2 | Top management members take active interest in projects and give support when necessary | | | |
| 50 | 3 | Project work generally is supported by the rest of the organization | | | |
| 51 | 4 | Projects are not seriously affected by conflict existing between departments | | | |
| 52 | 5 | Top management ensure that project priorities are well-defined and are subscribed to by the rest of the organization | | | |
| 53 | 6 | People from different departments in the organization work together well in project teams | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 9 Sound project communication

The extent to which there is a healthy level of communication in project teams and where there is an emphasis on the efficient dissemination of important project related information to all participants.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 54 | 1 | Project team members often informally discuss project matters | | | |
| 55 | 2 | Team members are kept informed of project progress and developments | | | |
| 56 | 3 | Project meetings are usually informative | | | |
| 57 | 4 | Project information systems provide helpful and accurate project information | | | |
| 58 | 5 | The channels for reporting project problems are clear | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 10 Effective consultation with the client or end-user

The extent to which the project management process encourages and effectively facilitates consultation with the client or end-user on a regular or ongoing basis.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 59 | 1 | During project execution regular discussions are maintained with the client or end-user | | | |
| 60 | 2 | Client or end-user inputs are considered when making project decisions | | | |
| 61 | 3 | There are normally good relations between project teams and their clients | | | |
| 62 | 4 | Each project has an identified client or end-user | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 11 Quality of project leadership

The quality of the project management leadership function seen in the context of selecting the right people for the taskand in the effective training and development of project managers.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 63 | 1 | Care is taken to put competent project managers in charge of projects | | | |
| 64 | 2 | The organization has a core of experienced project managers | | | |
| 65 | 3 | Project managers have suitable team and people leadership qualities | | | |
| 66 | 4 | The organization takes adequate steps to appropriately train project managers | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 12 Project human resource adequacy

The extent to which people assigned to projects are generally competent in their line of specialisation and have a sufficient commitment to delivering quality work. Furthermore, participants are sufficiently skilled in project management and working in teams, and amongst them, they offer sufficient innovative and problem-solving abilities.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 67 | 1 | People participating in projects are generally competent in their fields of expertise | | | |
| 68 | 2 | Project team members have adequate project management related skills | | | |
| 69 | 3 | There are always enough project team members around with innovative and problem-solving abilities | | | |
| 70 | 4 | There is an acceptably low level of rework in most projects | | | |
| 71 | 5 | Project team members have adequate teamwork orientation and skills | | | |
| 72 | 6 | Project team members have the maturity to work independently on project tasks | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

## 13 Consideration for stakeholders

The extent to which project management is carried out with an "open systems" mentality where its relationship and interdependency with the bigger organization and the external environment is appreciated and duly considered as part of its activity.

| | | | Include | Exclude | Unsure |
|---|---|---|---|---|---|
| 73 | 1 | Projects are carried out without compromising the culture and values of the organization | | | |
| 74 | 2 | Project team members are generally satisfied with participating in projects and how it contributes to their career growth | | | |
| 75 | 3 | Projects are done without disrupting the rest of the organization's workflow | | | |
| 76 | 4 | Project management is done in harmony with the functioning of line management in the organization | | | |
| 77 | 5 | Project management always consult people that may be affected by projects (internal and external to the organization) | | | |
| 78 | 6 | Project management activities are sensitive to the dominant political sentiments in the organization | | | |
| | | ***Other items for consideration*** **:** | | | |
| | a | | | | |
| | b | | | | |

# APPENDIX B:

# LETTER TO REQUEST ASSISTANCE FROM PROJECT MANAGEMENT EXPERTS

**E-Mail message to project management expert group**

Subject: Pre-evaluation - Project management effectiveness scale

Dear

Prof Chris Brown of the University of Stellenbosch Business School suggested to request you, as one of a short list of 25 acknowledged project management practitioners, to participate in pre-evaluating a list of items to include in an instrument for project management research. I am currently studying the relationship between organizational culture and project management as a PhD topic under the leadership of Prof Brown.

Part of my research involves the measurement of project management effectiveness. In this context, project management should be seen as an organizational capability of managing projects on an ongoing basis. Project management effectiveness then refers to the strength of the organization's project management function to effectively absorb project work and repeatedly manage and deliver projects successfully.

Following a review of project management success studies, we have compiled a list of items which represent the viewpoints of many project management authors and practitioners on outcome criteria, as well as leading factors, of project management success. The implied framework underlying this pool of items, is in line with recent developments in organizational performance measurement, which steers away from focusing only on outcome measures, to include predictor factors of performance (for example the Balanced Scorecard of Kaplan & Norton).

Your assistance in evaluating, and perhaps narrowing down, this choice of items will be highly appreciated. You are requested to judge each item in terms of whether it is descriptive of the concept of project management effectiveness or not. For ease of reference we have grouped the items (78 in total) under 13 headings. In terms of each item you may decide between:

**include** - which means that the particular item should be included in an instrument to measure the level of effectiveness of an organization's project management function;

**exclude** - which means it should not be included as it is not relevant to measuring project management effectiveness; or

**unsure** - which means that, from your experience base, you are not sure if the item should be included or not.

Your selection does not imply that the items necessarily belong to the heading, but only to the broader concept of project management effectiveness.

Attached is an Excel file pilotscale.xls* which you can complete and e-mail back to me at jm@sun.ac.za. Completion of this form should take between 15 and 20 minutes. Again, your valuable time to assist in this matter is highly appreciated.

Kind regards,

John Morrison

# APPENDIX C:

# PROJECT MANAGEMENT EXPERT RESPONSE DATA PRESENTATION

## Item scores sorted in descending order by score per category

N = 17
Score = Include / (Include + Exclude)
All scores below 80% have been shaded

| Category | No | Item | Item description | Include | Exclude | Unsure | Score |
|---|---|---|---|---|---|---|---|
| 1. Operational outcomes | 1 | 1 | Projects consistently meet their cost targets | 15 | 0 | 2 | 1.00 |
| | 2 | 2 | Projects consistently meet time targets | 15 | 0 | 2 | 1.00 |
| | 3 | 4 | Projects consistently meet the required quality standards | 16 | 0 | 1 | 1.00 |
| | 4 | 3 | Projects consistently meet their technical performance specifications | 17 | 0 | 0 | 1.00 |
| | 5 | 5 | Clients or end-users are consistently satisfied with what our projects deliver | 17 | 0 | 0 | 1.00 |
| | 6 | 6 | Clients generally talk positively about our project work | 11 | 2 | 4 | 0.85 |
| 2. Organizational goals | 7 | 10 | Project management creates a faster work flow in delivering new products | 12 | 0 | 5 | 1.00 |
| | 8 | 7 | Project management improves the ability of the organization to utilise its human resources and specialists | 15 | 1 | 1 | 0.94 |
| | 9 | 11 | Project management enhances the concurrent use of multi-functional inputs in new development work in the organization | 13 | 2 | 2 | 0.87 |
| | 10 | 8 | Project management allows the organization to better respond to client demands | 14 | 3 | 0 | 0.82 |
| | 11 | 9 | Project management allows the organization to better manage legitimate stakeholder demands | 11 | 4 | 2 | 0.73 |
| | 12 | 12 | Project management succeeds to free top management from coordinating major new projects or developments | 9 | 5 | 3 | 0.64 |
| 3. Goal clarity | 13 | 13 | Project goals are clearly defined at start-up | 16 | 0 | 1 | 1.00 |
| | 14 | 14 | Project goals are made clear to all participants | 16 | 0 | 1 | 1.00 |
| | 15 | 15 | Project participants are committed to the achievement of project goals | 16 | 0 | 1 | 1.00 |
| | 16 | 16 | Project team members take ownership of project goals | 16 | 1 | 0 | 0.94 |
| | 17 | 17 | Team members actively participate in decision-making regarding the achievement of project goals | 15 | 2 | 0 | 0.88 |
| 4. Rational project decision-making | 18 | 19 | Project estimates and planning are as far as possible done on factual and reliable information | 16 | 0 | 1 | 1.00 |
| | 19 | 25 | It is customary to have formal reviews to learn from project failures and/or successes | 16 | 0 | 1 | 1.00 |
| | 20 | 18 | There is an emphasis on up-front project homework and feasibility studies | 17 | 0 | 0 | 1.00 |
| | 21 | 23 | Projects are continually reviewed to re-evaluate their viability and potential success | 16 | 1 | 0 | 0.94 |
| | 22 | 20 | Care is taken to ensure that there is market or end-user support for the proposed project | 13 | 2 | 2 | 0.87 |
| | 23 | 22 | Projects are not subject to unrealistic deadlines and targets | 12 | 2 | 3 | 0.86 |
| | 24 | 26 | Project priorities are not changed too frequently | 10 | 2 | 5 | 0.83 |
| | 25 | 24 | Projects are rather terminated early or adapted when they are not meeting initial expectations | 13 | 4 | 0 | 0.76 |
| | 26 | 21 | Personal interest and political considerations do not dictate project decisions | 10 | 4 | 3 | 0.71 |

| Category | No | Item | Item description | Include | Exclude | Unsure | Score |
|---|---|---|---|---|---|---|---|
| 5. Apprpriate methodology | 27 | 33 | Project scope is comprehensively and adequately defined | 16 | 0 | 1 | 1.00 |
| | 28 | 29 | The organization has the ability to estimate and plan its projects with reasonable accuracy | 17 | 0 | 0 | 1.00 |
| | 29 | 32 | There is an adequate focus on managing project risks | 17 | 0 | 0 | 1.00 |
| | 30 | 36 | Project scope is changed only in a controlled way | 17 | 0 | 0 | 1.00 |
| | 31 | 27 | The organization has a standardised and effective system for managing projects | 16 | 1 | 0 | 0.94 |
| | 32 | 28 | Project participants generally understand the project management procedures applied in the organization | 15 | 1 | 1 | 0.94 |
| | 33 | 34 | The organization has appropriate tools and systems to support the project management process | 14 | 1 | 2 | 0.93 |
| | 34 | 30 | The project management process facilitate the implementation of projects with minimum start-up problems | 12 | 1 | 4 | 0.92 |
| | 35 | 35 | Project participants generally believe in the project management procedures applied in the organization | 12 | 1 | 4 | 0.92 |
| | 36 | 31 | Project management process involves strong monitoring and control over activities on an ongoing basis | 13 | 3 | 1 | 0.81 |
| 6. Organization and authority | 37 | 37 | Project managers are given the necessary authority to excute their responsibilities | 16 | 0 | 1 | 1.00 |
| | 38 | 39 | There are clearly laid down decision-making principles | 16 | 0 | 1 | 1.00 |
| | 39 | 38 | Project team members understand their project responsibilities | 17 | 0 | 0 | 1.00 |
| | 40 | 42 | Project managers are held accountable for meeting their responsibilities | 17 | 0 | 0 | 1.00 |
| | 41 | 41 | Project teams are generally effectively structured and mobilised | 14 | 1 | 2 | 0.93 |
| | 42 | 40 | Decision-making is smooth and efficient | 12 | 3 | 2 | 0.80 |
| 7. Access to resources | 43 | 44 | The organization is committed to providing the agreed upon resources | 16 | 0 | 1 | 1.00 |
| | 44 | 46 | The organization makes adequate provision for project funding | 16 | 0 | 1 | 1.00 |
| | 45 | 43 | Project managers are adequately empowered to access the required resources for their projects | 16 | 1 | 0 | 0.94 |
| | 46 | 47 | The availability of resources are taken into account when deciding upon projects and setting priorities | 15 | 1 | 1 | 0.94 |
| | 47 | 45 | Project managers can normally rely on the work output of organizational resources | 12 | 1 | 4 | 0.92 |
| 8. Supportive organization | 48 | 53 | People from different departments in the organization work together well in project teams | 15 | 0 | 2 | 1.00 |
| | 49 | 48 | Top management have an understanding of what project management entails | 15 | 1 | 1 | 0.94 |
| | 50 | 49 | Top management members take active interest in projects and give support when necessary | 15 | 1 | 1 | 0.94 |
| | 51 | 52 | Top management ensure that project priorities are well-defined and are subscribed to by the rest of the organization | 15 | 1 | 1 | 0.94 |
| | 52 | 51 | Projects are not seriously affected by conflict existing between departments | 12 | 2 | 3 | 0.86 |
| | 53 | 50 | Project work generally is supported by the rest of the organization | 13 | 3 | 1 | 0.81 |

| Category | No | Item | Item description | Include | Exclude | Unsure | Score |
|---|---|---|---|---|---|---|---|
| 9. Communication | 54 | 58 | The channels for reporting project problems are clear | 16 | 0 | 1 | 1.00 |
| | 55 | 57 | Project information systems provide helpful and accurate project information | 17 | 0 | 0 | 1.00 |
| | 56 | 55 | Team members are kept informed of project progress and developments | 16 | 1 | 0 | 0.94 |
| | 57 | 54 | Project team members often informally discuss project matters | 11 | 3 | 3 | 0.79 |
| | 58 | 56 | Project meetings are usually informative | 9 | 3 | 5 | 0.75 |
| 10. Client interface | 59 | 60 | Client or end-user inputs are considered when making project decisions | 16 | 0 | 1 | 1.00 |
| | 60 | 62 | Each project has an identified client or end-user | 16 | 1 | 0 | 0.94 |
| | 61 | 59 | During project execution regular discussions are maintained with the client or end-user | 15 | 1 | 1 | 0.94 |
| | 62 | 61 | There are normally good relations between project teams and their clients | 12 | 3 | 2 | 0.80 |
| 11. Leadership | 63 | 63 | Care is taken to put competent project managers in charge of projects | 17 | 0 | 0 | 1.00 |
| | 64 | 65 | Project managers have suitable team and people leadership qualities | 17 | 0 | 0 | 1.00 |
| | 65 | 66 | The organization takes adequate steps to appropriately train project managers | 13 | 1 | 3 | 0.93 |
| | 66 | 64 | The organization has a core of experienced project managers | 10 | 4 | 3 | 0.71 |
| 12. Human resource adequacy | 67 | 71 | Project team members have adequate teamwork orientation and skills | 14 | 0 | 3 | 1.00 |
| | 68 | 72 | Project team members have the maturity to work independently on project tasks | 14 | 1 | 2 | 0.93 |
| | 69 | 70 | There is an acceptably low level of rework in most projects | 12 | 1 | 4 | 0.92 |
| | 70 | 67 | People participating in projects are generally competent in their fields of expertise | 15 | 2 | 0 | 0.88 |
| | 71 | 69 | There are always enough project team members around with innovative and problem-solving abilities | 11 | 3 | 3 | 0.79 |
| | 72 | 68 | Project team members have adequate project management related skills | 10 | 6 | 1 | 0.63 |
| 13.. Stakeholder consideration | 73 | 77 | Project management always consult people that may be affected by projects (internal and external to the organization) | 13 | 1 | 3 | 0.93 |
| | 74 | 74 | Project team members are generally satisfied with participating in projects and how it contributes to their career growth | 13 | 2 | 2 | 0.87 |
| | 75 | 75 | Projects are done without disrupting the rest of the organization's workflow | 12 | 2 | 3 | 0.86 |
| | 76 | 76 | Project management is done in harmony with the functioning of line management in the organization | 12 | 2 | 3 | 0.86 |
| | 77 | 73 | Projects are carried out without compromising the culture and values of the organization | 9 | 3 | 5 | 0.75 |
| | 78 | 78 | Project management activities are sensitive to the dominant political sentiments in the organization | 9 | 3 | 5 | 0.75 |

# APPENDIX D:

# ITEMS SUGGESTED BY PROJECT MANAGEMENT EXPERTS FOR ADDING TO THE ITEM POOL

## 1 Successful project management outcomes

| | | | Person |
|---|---|---|---|
| 1 | 1 | Outcome 5 & 6 often difficult to measure objectively [*client related]* | G Botha |
| 2 | 2 | Duration, cost and quality are critical factors to successful project management. | Ig Kruger |
| 3 | 3 | Team members talk positively about our project work | L Labuschagne |
| 4 | 4 | Ability of the project organisation to improve current/future projects based on previous/current experience. | Kelson Chan |

## 2 Meeting organizational goals for project management

| | | | Person |
|---|---|---|---|
| 5 | 1 | Project management enhances the efficient utilization of resources | H Steyn |
| 6 | 2 | Customer demands are not only met by project management, but also by effective operational management. This is industry specific. | Ig Kruger |

## 3 Project goal clarity and alignment

| | | | Person |
|---|---|---|---|
| 7 | 1 | All external stakeholders accept project objectives | H Steyn |

## 4 Rationality in project management

| | | | Person |
|---|---|---|---|
| 8 | 1 | Project priorities should be reviewed frequently in a rapid changing market environment, e.g. the IT industry. In a more stable environment like the construction environment the project priorities and objectives can be set from the outset of the project. | Ig Kruger |
| 9 | 2 | Projects are sometimes subject to unrealistic timelines | A Kowo |

## 5 Appropriate project management methodology

| | | | Person |
|---|---|---|---|
| 10 | 1 | Planning is done in distinctive phases (or stages) with "gates" in between - planning for later phases in much less detail than for imminent phase | H Steyn |
| 11 | 2 | Project risks is a very important factor and should be reviewed on an on-going basis. | Ig Kruger |
| 12 | 3 | project risk at the operational level as well as at the higher levels | A Leicester |
| 13 | 4 | management of contingency funds and effective formulation of contingency | A Leicester |

## 6 Effective project organization and authority structure

| | | | Person |
|---|---|---|---|
| 14 | 1 | Project management is clearly distinguished from normal day-to-day operational management, i.e. focus and dedication, not dual responsibility | A Nel |
| 15 | 2 | Functional managers understand their roles and responsibilities | H Steyn |
| 16 | 3 | Project responsibility and accountability go hand-in-hand. It is essential that the project manager be empowered to perform his function as project manager. | Ig Kruger |
| 17 | 4 | there is an identified and accountable senior manager for each project | A Leicester |

## 7 Access to needed resources

| | | | Person |
|---|---|---|---|
| 18 | 1 | The scheduling of resources is important to achieve project efficiency. | Ig Kruger |
| 19 | 2 | The Project Sponsor understands his role and fully supports the Project Manager and Project Teams | A Kowo |

## 8 Supportive organization

| | | | Person |
|---|---|---|---|
| 20 | 1 | A successful project management organization needs to have a matrix type management structure. | Ig Kruger |

**9 Sound project communication**

| | | | Person |
|---|---|---|---|
| 21 | 1 | Appropriate communication: e.g. via Internet versus face-to-face | H Steyn |
| 22 | 2 | Project communication is integral to the successful completion of a project. This cannot be stressed enough. | Ig Kruger |
| 23 | 3 | Change Management is built into the communication plan | A Kowo |
| 24 | 4 | Project Status reports are prepared and submitted regularly | A Kowo |
| 25 | 5 | communications planning is an integral part of all projects | A Leicester |

**10 Effective consultation with the client or end-user**

| | | | Person |
|---|---|---|---|
| 26 | 1 | Review meeting should be scheduled at agreed intervals. Do not schedule meetings for the sake of having meetings as it ends up being counter-productive. | Ig Kruger |
| 27 | 2 | There are normally good relations between PMs and their Clients. | A Kowo |

**11 Quality of project leadership**

| | | | Person |
|---|---|---|---|
| 28 | 1 | Technical competence of project managers | H Steyn |
| 29 | 2 | Organizations utilizes the services of outside project management specialists. | Ig Kruger |
| 30 | 3 | The organization has access to experienced external expertise | A Kowo |

**12 Project human resource adequacy**

| | | | Person |
|---|---|---|---|
| 31 | 1 | Project Managers have adequate project management skills | A Kowo |
| 32 | 2 | Subject Matter Experts (SMEs) have sufficient subject knowledge | A Kowo |
| 33 | 3 | Sometimes it is necessary to select rookies on the project to expose them to certain technologies etc. | A Mouton |
| 34 | 4 | If re-work refers to non-conformance it must be included, if refer to enhancement it needs to be excluded. | A Mouton |

**13 Consideration for stakeholders**

| | | | Person |
|---|---|---|---|
| 35 | 1 | Competence of subcontractors | H Steyn |
| 36 | 2 | Procurement procedures support project work performed by subcontractors | H Steyn |
| 37 | 3 | Some IT projects involve process changes that changes workflow. | A Mouton |

# APPENDIX E:

# PROJECT MANAGEMENT EFFECTIVENESS QUESTIONNAIRE SENT TO MBA STUDENTS

# A. Questionnaire aimed at a senior management representative

## Top Management

**Please give a rating as to the degree of positive impact project management has had on the following aspects of your organization. Please make your selection by clicking in the appropriate box**

| | | Negative impact 1 | No impact 2 | Limited impact 3 | Satis-factory 4 | Somewhat high 5 | High 6 | Very high 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | The speed of developing new products or systems | | | | | | | |
| 2 | The efficiency in using specialists on multiple tasks concurrently | | | | | | | |
| 3 | The ability to respond to customer or end user needs in the development of new products | | | | | | | |
| 4 | The capability to execute major non-routine tasks of a multi-disciplinary nature | | | | | | | |
| 5 | Freeing top management from the burden of coordinating multi-disciplinary projects | | | | | | | |
| 6 | The ability to deal with the interests of stakeholders in new initiatives by the organization | | | | | | | |

**By considering your organization's projects in relation to the norm for projects in your industry, how would you rate your organization's performance on projects in respect of the following. Make your selection by clicking in the appropriate box.**

| | | Very poor 1 | Poor 2 | Somewhat poor 3 | Satis-factory 4 | Good 5 | Very good 6 | Excellent 7 |
|---|---|---|---|---|---|---|---|---|
| 7 | Meeting time deadlines | | | | | | | |
| 8 | Meeting cost targets | | | | | | | |
| 9 | Adhering to the required quality standards | | | | | | | |
| 10 | Meeting the functional performance criteria | | | | | | | |
| 11 | Achieve customer satisfaction | | | | | | | |

**Evaluate the following statements and indicate to what degree each of them is a true reflection of the stuation in your organization. Make your selection by clicking in the appropriate box**

| | | Not at all true<br>1 | Rather not true<br>2 | Slightly not true<br>3 | Neutral<br>4 | Slightly true<br>5 | Rather true<br>6 | Very true<br>7 |
|---|---|---|---|---|---|---|---|---|
| 12 | Project management is smoothly integrated into the normal flow of organizational activity | | | | | | | |
| 13 | Staff from different departments generally feel positive about getting involved in projects | | | | | | | |
| 14 | Performance on projects is formally recognised in the performance appraisals of staff in functional departments | | | | | | | |
| 15 | There are adequate career prospects for project managers in this organization | | | | | | | |
| 16 | There is a clear distinction between the roles of functional managers and project managers with regard to managing projects in this organization | | | | | | | |

# B. Questionnaire aimed at project managers

**Project Manager Instrument**

**Please evaluate each of the following 38 statements and indicate to what extent you agree or disagree that the statement is a true reflection of the situation in your organization. Make your choice by clicking in the appropriate box.**

| | | Strongly disagree 1 | Disagree 2 | Somewhat disagree 3 | Neutral 4 | Somewhat agree 5 | Agree 6 | Strongly agree 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | In our organization top management understands the nature of project management | | | | | | | |
| 2 | When projects experience difficulty, our top management is prepared to give the necessary support | | | | | | | |
| 3 | Project managers in our organization are given the necessary authority to carry out their project responsibilities | | | | | | | |
| 4 | Project managers can rely on the rest of the organization to meet their project commitments | | | | | | | |
| 5 | Top management ensures that the organization as a whole shares the importance of the organization's project goals | | | | | | | |
| 6 | In our organization there is a low degree of conflict between departments as far as project work is concerned | | | | | | | |
| 7 | There is a supportive climate towards projects in our organization | | | | | | | |
| 8 | Our organization provides effective training to support its project management activity | | | | | | | |
| 9 | Our organization insists on proper upfront homework to evaluate the feasibility of projects before they are started | | | | | | | |
| 10 | Our organization requires that factual data be obtained to assist in project planning and estimation | | | | | | | |
| 11 | The targets and deadlines set for projects in our organization, are achievable | | | | | | | |
| 12 | Our organization insists on a proper review of mistakes and successes after project completion | | | | | | | |
| 13 | In our organization the priorities between projects are kept relatively steady by senior management | | | | | | | |
| 14 | Our organization considers the availability of resources before setting project priorities and targets | | | | | | | |
| 15 | Our organization makes sure that there is customer support for a project before giving the go-ahead | | | | | | | |
| 16 | Our organization has the ability to estimate its projects with reasonable accuracy | | | | | | | |

| | | Strongly disagree 1 | Disagree 2 | Somewhat disagree 3 | Neutral 4 | Somewhat agree 5 | Agree 6 | Strongly agree 7 |
|---|---|---|---|---|---|---|---|---|
| 32 | It is seldom necessary to do rework on project tasks delivered by project team members | | | | | | | |
| 33 | Staff from different departments cooperate with one another when working together in project teams | | | | | | | |
| 34 | Regular formal discussions are held with a project's customer during execution of the project | | | | | | | |
| 35 | Each project has an explicit customer or end-user representation | | | | | | | |
| 36 | Project teams build good relationships with their respective project customers | | | | | | | |
| 37 | Managing the customer interface is practiced as a key element of the project management process | | | | | | | |
| 38 | In this organization project managers have sufficient authority to harness the resources needed to accomplish project objectives | | | | | | | |

# C. Questionnaire aimed at team members

**Project Team Member Instrument**

**Please evaluate each of the following 15 statements and indicate to what extent you agree or disagree that the statement is a true reflection of the situation in your organization. Make your choice by clicking in the appropriate box.**

| | | Strongly disagree 1 | Disagree 2 | Somewhat disagree 3 | Neutral 4 | Somewhat agree 5 | Agree 6 | Strongly agree 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | In our organization the discipline to adhere to project task deadlines is strongly enforced | | | | | | | |
| 2 | Our organization puts competent project managers in charge of projects | | | | | | | |
| 3 | In our organization project managers are appropriately skilled in leading people and teams | | | | | | | |
| 4 | Decision-making in projects is smooth and decisive | | | | | | | |
| 5 | In our organization project goals and targets are clearly defined at project startup | | | | | | | |
| 6 | In our organization project team members participate in setting objectives for their project tasks | | | | | | | |
| 7 | In this organization project managers inspire team members to meet their project commitments | | | | | | | |
| 8 | In our organization project team members are committed to the overall goals of the projects they participate in | | | | | | | |
| 9 | This organization holds their project managers accountable for meeting their project objectives | | | | | | | |
| 10 | In our organization project team members know exactly what their project responsibilities are | | | | | | | |
| 11 | In our organization project participants freely communicate with each other on project matters | | | | | | | |
| 12 | In our organization there is an adequate project communication plan in place for each project | | | | | | | |
| 13 | In our organization the channels for reporting project problems are clear to all project participants | | | | | | | |
| 14 | In our organization project progress information is regularly distributed to all project participants | | | | | | | |
| 15 | In our organization project participants feel encouraged to report potential problems immediately | | | | | | | |

# APPENDIX F:

# ITEM RELIABILITY ANALYSIS OF PRELIMINARY PROJECT MANAGEMENT EFFECTIVENESS QUESTIONNAIRE – MBA STUDENT RESPONSE

**1. Meeting strategic organizational goals for project management**

Summary for scale: Mean=25.5000 Std.Dv.=6.75278 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .784211 Standardized alpha: .792985
Average inter-item corr.: .404352

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Speed(Strat) | 21.1875 | 33.1523 | 5.7578 | 0.5515 | 0.7514 |
| MultiTask(Strat) | 21.5000 | 29.8750 | 5.4658 | 0.5215 | 0.7558 |
| CustResp(Strat) | 20.8750 | 29.7344 | 5.4529 | 0.6361 | 0.7265 |
| NonRout(Strat) | 21.0625 | 29.5586 | 5.4368 | 0.6004 | 0.7344 |
| Coord(Strat) | 21.4375 | 32.1211 | 5.6675 | 0.5517 | 0.7488 |
| Stakeh(Strat) | 21.4375 | 31.3711 | 5.6010 | 0.3961 | 0.7916 |

**2. Meeting project management objectives consistently**

Summary for scale: Mean=19.4375 Std.Dv.=7.72846 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .944716 Standardized alpha: .947337
Average inter-item corr.: .797886

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Time(OpObj) | 16.1250 | 36.4844 | 6.0402 | 0.8704 | 0.9282 |
| Cost(OpObj) | 15.8125 | 34.5273 | 5.8760 | 0.8627 | 0.9301 |
| Qual(OpObj) | 15.0625 | 34.9336 | 5.9105 | 0.8171 | 0.9396 |
| Perf(OpObj) | 15.1250 | 37.6094 | 6.1326 | 0.8860 | 0.9270 |
| Client(OpObj) | 15.6250 | 38.1094 | 6.1733 | 0.8378 | 0.9345 |

**3. Degree of project management integration into organization**

Summary for scale: Mean=19.0625 Std.Dv.=7.66350 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .819617 Standardized alpha: .819210
Average inter-item corr.: .530119

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| IntFlow(PMInt) | 15.3125 | 38.3398 | 6.1919 | 0.5338 | 0.8067 |
| Attitude(PMInt) | 15.5625 | 39.8711 | 6.3144 | 0.5403 | 0.8039 |
| Recog(PMInt) | 15.6250 | 40.3594 | 6.3529 | 0.4214 | 0.8391 |
| Career(PMInt) | 14.7500 | 33.0625 | 5.7500 | 0.7531 | 0.7388 |
| Roles(PMInt) | 15.0000 | 32.5000 | 5.7009 | 0.8427 | 0.7119 |

## 4. Supportive organization

Summary for scale: Mean=31.2500 Std.Dv.=8.94054 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .801620 Standardized alpha: .821652
Average inter-item corr.: .395274

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| TMUnd(OrgSup) | 26.5625 | 55.8711 | 7.4747 | 0.5914 | 0.7666 |
| TMsup(OrgSup) | 26.7500 | 56.1875 | 7.4958 | 0.7088 | 0.7514 |
| PMauth(OrgSup) | 26.8750 | 60.1094 | 7.7530 | 0.5648 | 0.7733 |
| Rely(OrgSup) | 27.6875 | 53.2148 | 7.2949 | 0.7217 | 0.7445 |
| OrgShare(OrgSup) | 27.4375 | 57.2461 | 7.5661 | 0.6519 | 0.7596 |
| Conflict(OrgSup) | 28.0000 | 65.1250 | 8.0700 | 0.2693 | 0.8140 |
| Climate(OrgSup) | 27.4375 | 57.2461 | 7.5661 | 0.7270 | 0.7520 |
| Train(OrgSup) | 28.0000 | 67.0000 | 8.1854 | 0.1015 | 0.8543 |

## 5. Rational project decision-making

Summary for scale: Mean=25.2500 Std.Dv.=7.58507 Valid N:16 (PM_StudResponse2.sta
Cronbach alpha: .779017 Standardized alpha: .747882
Average inter-item corr.: .332538

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Homew(PMRat) | 22.0000 | 37.0000 | 6.0828 | 0.6714 | 0.7140 |
| Facts(PMRat) | 21.4375 | 33.6211 | 5.7984 | 0.7165 | 0.6996 |
| Realist(PMRat) | 21.6250 | 44.6094 | 6.6790 | 0.4317 | 0.7646 |
| Review(PMRat) | 21.6875 | 36.0898 | 6.0075 | 0.6938 | 0.7079 |
| StablePrior(PMRat) | 21.4375 | 41.6211 | 6.4514 | 0.4599 | 0.7598 |
| ResourceA(PMRat) | 21.9375 | 40.5586 | 6.3686 | 0.5666 | 0.7390 |
| CustSup(PMRat) | 21.3750 | 54.1094 | 7.3559 | -0.0860 | 0.8299 |

## 6. Effective tools and systems

Summary for scale: Mean=18.7500 Std.Dv.=6.16982 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .757717 Standardized alpha: .764481
Average inter-item corr.: .402829

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| EstAcc(PMSys) | 14.5000 | 23.7500 | 4.8734 | 0.4704 | 0.7373 |
| AdmInfo(PMSys) | 14.8125 | 28.6523 | 5.3528 | 0.3630 | 0.7635 |
| InfoAcc(PMSys) | 15.6875 | 25.2148 | 5.0214 | 0.5585 | 0.7056 |
| PMsyst(PMSys) | 15.0000 | 18.6250 | 4.3157 | 0.6622 | 0.6628 |
| SystEff(PMSys) | 15.0000 | 24.8750 | 4.9875 | 0.6392 | 0.6838 |

## 7. Effective project management methodology and discipline

Summary for scale: Mean=25.5625 Std.Dv.=7.50972 Valid N:16 (PM_StudResponse2.st
Cronbach alpha: .803694 Standardized alpha: .802662
Average inter-item corr.: .387020

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Scope(PMMeth) | 21.3750 | 36.8594 | 6.0712 | 0.6985 | 0.7468 |
| Startup(PMMeth) | 21.6250 | 44.4844 | 6.6697 | 0.3667 | 0.8051 |
| Underst(PMMeth) | 22.3750 | 39.1094 | 6.2537 | 0.6084 | 0.7652 |
| Control(PMMeth) | 21.6250 | 38.4844 | 6.2036 | 0.6407 | 0.7591 |
| RiskID(PMMeth) | 21.7500 | 37.1875 | 6.0982 | 0.6350 | 0.7588 |
| RiskMan(PMMeth) | 22.0625 | 38.1836 | 6.1793 | 0.6709 | 0.7538 |
| ScopeControl(PMMeth) | 22.5625 | 46.4961 | 6.8188 | 0.1797 | 0.8400 |

## 8. Adequacy and competency of resources

Summary for scale: Mean=25.0000 Std.Dv.=5.48938 Valid N:16 (PM_StudResponse2.sta
Cronbach alpha: .704535 Standardized alpha: .713581
Average inter-item corr.: .302078

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| StaffComp(PMResource) | 20.1250 | 22.7344 | 4.7681 | 0.4789 | 0.6628 |
| SupplComp(PMResource) | 20.0625 | 24.0586 | 4.9050 | 0.3437 | 0.6925 |
| PMskills(PMResource) | 21.6250 | 22.4844 | 4.7418 | 0.2491 | 0.7258 |
| TaskInd(PMResource) | 20.8125 | 17.7773 | 4.2163 | 0.7034 | 0.5724 |
| Rework(PMResource) | 21.3750 | 19.8594 | 4.4564 | 0.4016 | 0.6801 |
| Coop(PMResource) | 21.0000 | 17.7500 | 4.2131 | 0.5337 | 0.6311 |

## 9. Degree of customer integration in project management

Summary for scale: Mean=17.6250 Std.Dv.=3.94757 Valid N:16 (PM_StudResponse2.sta
Cronbach alpha: .765062 Standardized alpha: .785550
Average inter-item corr.: .484078

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| RegDisc(PMCust) | 13.2500 | 7.6875 | 2.7726 | 0.5077 | 0.7698 |
| CustIdent(PMCust) | 12.8750 | 9.1094 | 3.0182 | 0.7132 | 0.6497 |
| CustRel(PMCust) | 13.1875 | 9.6523 | 3.1068 | 0.5350 | 0.7260 |
| CustInt(PMCust) | 13.5625 | 8.9961 | 2.9993 | 0.5819 | 0.7008 |

## 10. Effective project leadership

| variable | Summary for scale: Mean=42.1250 Std.Dv.=11.2953 Valid N:16 (PM_StudResponse2.st<br>Cronbach alpha: .880718 Standardized alpha: .875710<br>Average inter-item corr.: .424335 | | | | |
|---|---|---|---|---|---|
| | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
| AuthRes(PMLead) | 38.5000 | 93.3750 | 9.6631 | 0.7353 | 0.8599 |
| Deadline(PMLead) | 38.3750 | 94.2344 | 9.7074 | 0.7340 | 0.8602 |
| PMSelect(PMLead) | 38.1875 | 91.0273 | 9.5408 | 0.7648 | 0.8574 |
| PMskills(PMLead) | 38.4375 | 94.6211 | 9.7273 | 0.7611 | 0.8586 |
| Decision(PMLead) | 38.5000 | 108.0000 | 10.3923 | 0.3998 | 0.8811 |
| GoalDef(PMLead) | 38.3750 | 103.9844 | 10.1973 | 0.4631 | 0.8784 |
| TMpart(PMLead) | 38.6250 | 108.3594 | 10.4096 | 0.3449 | 0.8846 |
| Inspire(PMLead) | 38.3125 | 94.7148 | 9.7322 | 0.7964 | 0.8566 |
| Commitm(PMLead) | 38.0000 | 96.6250 | 9.8298 | 0.7061 | 0.8626 |
| Account(PMLead) | 37.8125 | 109.5273 | 10.4655 | 0.2641 | 0.8904 |
| TMroles(PMLead) | 38.1250 | 105.8594 | 10.2888 | 0.5129 | 0.8753 |

## 11. Effective project communications

| variable | Summary for scale: Mean=18.2500 Std.Dv.=6.41353 Valid N:16 (PM_StudResponse2.st<br>Cronbach alpha: .879001 Standardized alpha: .879395<br>Average inter-item corr.: .614755 | | | | |
|---|---|---|---|---|---|
| | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
| FreeCom(PMComms) | 14.1875 | 25.2773 | 5.0277 | 0.7185 | 0.8514 |
| Complan(PMComms) | 15.1250 | 24.6094 | 4.9608 | 0.7902 | 0.8343 |
| Channel(PMComms) | 14.6250 | 22.2344 | 4.7153 | 0.8190 | 0.8260 |
| ProgInfo(PMComms) | 14.8750 | 29.1094 | 5.3953 | 0.4686 | 0.9057 |
| ProblRep(PMComms) | 14.1875 | 25.9023 | 5.0894 | 0.7927 | 0.8373 |

# APPENDIX G:

# LETTER SENT TO ORGANIZATIONS FOR VALIDATION OF ORGANIZATIONAL CULTURE QUESTIONNAIRE

Dear

We kindly request your organization to assist us in the final validation of an organizational culture assessment instrument that we have developed. This questionnaire forms part of my PhD study in the field of project management under Prof Chris Brown at the University of Stellenbosch Business School.

Top project management consultants acknowledge the impact of an organization's culture on the ability of the organization to manage projects. Our research proceeds from this stance by investigating which components of culture play the most significant roles in the effectiveness of project management. The questionnaire is based on a multi-dimensional model of organizational culture. It deviates from traditional culture assessments by its emphasis on management philosophies believed to affect cross-functional processes. To confirm the validity of the questionnaire we need a large sample of respondents from a variety of project and non-project organizations.

Completion of this questionnaire is totally confidential. Data are used for this validation exercise, and in particular to verify statistical patterns across many organizations. Data will not be used to evaluate or report on a specific organization.

We kindly request you to provide us access to ± 20 persons in middle management, supervisory, and functional specialist positions. We need the person's first name, e-mail address and telephone extension, and the appropriate consent to directly approach them. Should you prefer a smaller participation, we will gladly appreciate whatever you can make available.

The questionnaire is e-mailed as an attached Excel file directly to the respondent (please see instructions below*). Completion of the questionnaire and direct resubmission to us is facilitated electronically in a user-friendly way. The exercise should only take between 15 and 20 minutes per respondent.

A copy of the questionnaire is attached to this letter (CQxx.xls), and you could, alternatively, directly forward the attached file to the persons selected. In this case, please send us a note to inform us of your organization's participation.

The attached Profile.xls contains details of the cultural profile assessed by this instrument. Following your participation we could send you your organization's profile and how it compares with the average of all participating organizations. To adhere to our confidentiality criteria, we will only do this upon your explicit request.

Should you have any query about this research, please call me at 021 918-4341 or Prof Chris Brown at 021 918- 4230/4288.

Your assistance, to what already proves to be pioneering research on this topic internationally, will be highly appreciated.

Kind regards

John Morrison

***Please Note**:

- Before opening the attached Excel file, please ensure that Excel on your computer is set to *medium security* (In Excel go to **Tools** on the Menu Bar, select **Macro**, then **Security**, select the **Security Level** tab, and check the **Medium** option.
- When you open the attached file, please select the **Enable Macros** option to make sure that the questionnaire functionality is activated.
- After completion of the questionnaire, a **Submit** button will directly e-mail the response data to the researcher
- Please also note that before the response is e-mailed, the visibly completed questionnaire is wiped out, leaving only the data in a password protected location. The *confidentiality* of the respondent's assessment, is guaranteed.

John M Morrison
University of Stellenbosch Business School
jm@sun.ac.za
Tel: 021 918 4341
Cell: 084 570 0720
Fax: 021 918 4468

Geagte

Ons vra u organisasie se vriendelike samewerking met die finale validering van ‘n organisasie-kultuur vraeboog wat ons ontwikkel het. Die instrument is deel van ‘n PhD navorsingsprojek wat ek in die veld van projekbestuur onder leiding van Prof Chris Brown by die Universiteit van Stellenbosch Bestuurskool doen.

Top projekbestuurskonsultante erken reeds geruime tyd die impak van organisasie-kultuur op ‘n organisasie se vermoë om projekte te bestuur. Ons navorsing volg hieruit en ondersoek die spesifieke komponente van kultuur wat ‘n beduidende impak op die effektiwiteit van projekbestuur uitoefen. Die vraeboog is geskoei op ‘n multi-dimensionele model van organisasie-kultuur, en lê spesifiek klem op die assessering van bestuursfilosofieë wat met die sukses van trans-funksionele prosesse in organisasies verbind word. Ten einde die instrument se geldigheid te bevestig, benodig ons ‘n groot aantal respondente van ‘n verskeidenheid van projekbestuur- en nie-projekbestuur-organisasies.

Voltooiing van die vraeboog is geheel en al vertroulik. Data word net vir geldigheidstoetsing gebruik, en om gemeenskaplike statistiese patrone wat oor organisasies voorkom, te bevestig. Data sal geensins gebruik word om ‘n spesifieke organisasie te evalueer of oor verslag te doen nie.

Ons vra u vriendelik om ons toegang tot ± 25 persone in middelbestuur, toesighouersposisies, en funksioneel vakkundige betrekkings in u organisasie te verleen. Ons benodig slegs elke persoon se voornaam, e-posadres en telefoonnommer, en u toestemming om hulle direk te nader. Sou u ‘n kleiner deelname verkies, sal ons dit nog steeds hoog op prys stel.

Die vraeboog word as ‘n Excel-aanhangsel direk aan die respondent gestuur (sien instruksies hieronder*****). Die voltooing en direkte terugstuur daarvan na ons word elektronies op ‘n gebruikersvriendelike wyse uitgevoer. Geen verdere aksie van uself word benodig nie. Die volledige aktiwiteit behoort slegs tussen 15 en 20 minute per respondent te neem.

‘n Kopie van die vraeboog is by hierdie brief aangeheg (CQxx.xls). U kan, alternatiewelik, die aangehegte lêer direk aan die genomineerde persone aanstuur. Bevestig asseblief u deelname op hierdie wyse.

Die aangehegte Profile.xls bevat detail oor die kultuurprofiel wat deur die instrument gemeet word. In opvolg van u deelname kan ons u organisasie se kultuurprofiel, en hoe dit vergelyk met die gemiddelde profiel van alle deelnemende organisasies, aan u voorsien. Om getrou te wees aan ons vertroulikheidskriteria, sal ons hierdie slegs op u uitdruklike versoek doen.

Indien u enige navrae met betrekking tot hierdie ondersoek het, kontak my gerus by (021) 918-4341, of vir Prof Chris Brown by (021) 918-4230/4228.

U samewerking, in wat reeds beloof om internasionaal ‘n unieke bydrae in hierdie veld te maak, sal hoogs waardeer word.

Vriedelike groete

John Morrison

***Let wel**:

- Voor u die aangehegte Excel-lêer oopmaak, maak seker dat Excel op u rekenaar op *medium sekuriteit* gestel is (In Excel gaan na **Tools** op die *Menu Bar*, kies **Macro**, dan **Security**, kies die **Security Level** tab, en kies die **Medium** opsie.
- Wanneer u die aangehegte lêer oopmaak, kies die **Enable Macros** opsie om te verseker dat die nodige funksionaliteit geaktiveer word.
- Na die invul van die vraeboog word daar ‘n **Submit** *button* voorsien wat die voltooide data direk aan die navorser terug e-pos.
- Let veral op dat die sigbare vraeboog, soos deur die respondent ingevul, voor versending uitgewis word en dat die data daarna slegs in ‘n wagwoord beskermde gedeelte beskikbaar is. Die vertoulikheid van die respondent se assessering word dus gewaarborg.

John M Morrison
Universiteit van Stellenbosch Bestuurskool
jm@sun.ac.za
Tel: 021 918 4341
Sel: 084 570 0720
Faks: 021 918 4468

# APPENDIX H:

# ORGANIZATIONAL CULTURE QUESTIONNAIRE VERSION 2 (VALIDATION)

## University of Stellenbosch Business School Research

* **This instrument contains 95 statements designed to assess the underlying management culture of your organization.**
* **These statements test the values and management philosophies enforced at senior levels that typically shape the way things are done in organizations.**
* **You are requested to evaluate these statements and judge to what extent each one is a true reflection of the prevailing situation in your organization.**
* **Please judge against what is actually practiced, and not against what is officially declared, or published in corporate documents, as ideal values for the organization.**

* **There are no right or wrong answers. It is your objective opinion on each of these statements that matters.**
* **Your response will be handled in strict confidence and will only be used for research purposes. Under no circumstances will your personal response be made available to your organization. You are therefore requested to be be as candid as possible.**

* **Participation in this survey is voluntary.**
* **Before you proceed select the category below that best describes your position in the organization.**

**Your position:**
Tick in the appropriate box

| | |
|---|---|
| 1. Senior management (functional dept and higher) | |
| 2. Middle management (below functional dept level) | |
| 3. Supervisor | |
| 4. Functional specialist (technical, legal, financial, IT, etc) | |
| 5. Other | |

Please rate the following statements and decide to what extent each one accurately reflects the situation in your organization. Remember to read each statement in terms of the common management practices accross the organization as affected by apparent senior management values, not as how you believe in running your own unit.

Rate each statement on the scale from **1** to **7,** where **1** means the statement is **Definitely not true** and **7** means the statement is **Definitely true,** in respect of your organization. Respond by clicking in the appropriate block.

| | | Definitely not true 1 | Largely not true 2 | Somewhat not true 3 | Unde-cided 4 | Somewhat true 5 | Largely true 6 | Definitely true 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | This organization makes sure that there are adequate opportunities for on-the-job-training. | | | | | | | |
| 2 | Employees in this organization have to work out their own informal systems and processes to cope with their work. | | | | | | | |
| 3 | This organization delegates the authority to make decisions to the persons that are put in control of tasks. | | | | | | | |
| 4 | This organization ensures that its training activities meet the expectations of the organization. | | | | | | | |
| 5 | This organization listens to the inputs of employees when developing its policies. | | | | | | | |
| 6 | In this organization, the personal agendas of senior managers have a strong influence on organizational decisions. | | | | | | | |
| 7 | In this organization, employees in different departments feel comfortable calling each other when the need arises. | | | | | | | |
| 8 | In this organization managers constructively assist their subordinates with finding ways to achieve their objectives. | | | | | | | |
| 9 | This organization is stingy with small things when it comes to improving the work conditions of its employees. | | | | | | | |
| 10 | In this organization one must follow the official channels to get a job done. | | | | | | | |
| 11 | Information about the performance of this organization is regularly communicated to employees. | | | | | | | |
| 12 | This organization tends to support most of its major decisions by an analysis of factual data. | | | | | | | |
| 13 | This organization sometimes gets side-tracked by issues that are not vital to the organization's success. | | | | | | | |
| 14 | This organization believes in standardising work processes and systems. | | | | | | | |
| 15 | In this organization senior management has a "hands on" understanding of what is going on at the operational level. | | | | | | | |
| 16 | This organization is trying to find new market opportunities all the time. | | | | | | | |
| 17 | Different departments in this organization often work together toward the achievement of the organization's goals. | | | | | | | |
| 18 | In this organization employees have the freedom to be creative in their work. | | | | | | | |
| 19 | All employees in this organization take an active interest in who the customers of the organization are. | | | | | | | |
| 20 | This organization is more concerned with getting someone to blame than finding out what the real causes of failure are. | | | | | | | |

| | | Definitely not true 1 | Largely not true 2 | Somewhat not true 3 | Unde-cided 4 | Somewhat true 5 | Largely true 6 | Definitely true 7 |
|---|---|---|---|---|---|---|---|---|
| 21 | Managers provide little support to subordinates in dealing with difficult job problems. | | | | | | | |
| 22 | Junior managers in one department may easily schedule meetings with junior managers in other departments. | | | | | | | |
| 23 | Employees in this organization mostly do work that can be directly linked to the achievement of the organization's overall goals. | | | | | | | |
| 24 | In this organization there is a strong link between employees' performance and how they are rewarded. | | | | | | | |
| 25 | Employees across this organization share the goals that are important for the organization's success. | | | | | | | |
| 26 | This organization often fails to recognise valuable systems and processes developed by employees on the job. | | | | | | | |
| 27 | This organization is only interested in its employees for the work they do. | | | | | | | |
| 28 | Managers in this organization are held accountable for the results under their control. | | | | | | | |
| 29 | This organization clearly understands what it needs to do to be successful. | | | | | | | |
| 30 | This whole organization is aligned towards explicit organization-wide goals. | | | | | | | |
| 31 | This organization rewards mainly individual performers; little provision is made for rewarding good team performance. | | | | | | | |
| 32 | There is a sense of trust between employees of this organization. | | | | | | | |
| 33 | In this organization there is a strong emphasis on giving the customer the best quality and service. | | | | | | | |
| 34 | This organization pays little attention to who its competitors are. | | | | | | | |
| 35 | Employees often waste valuable time by having to reinvent the wheel in solving work problems. | | | | | | | |
| 36 | In this organization it is not always clear who is responsible for what results. | | | | | | | |
| 37 | Employees in this organization have little say in deciding how to achieve their own work goals. | | | | | | | |
| 38 | Employees in this organization lack the drive needed to achieve organizational objectives. | | | | | | | |
| 39 | This organization behaves towards its employees as if they are valuable assets of the organization. | | | | | | | |
| 40 | This organization holds fast to its established management practices regardless of changes in circumstances. | | | | | | | |
| 41 | This organization believes in obtaining the relevant facts in order to solve problems. | | | | | | | |

| | | Definitely not true 1 | Largely not true 2 | Somewhat not true 3 | Unde-cided 4 | Somewhat true 5 | Largely true 6 | Definitely true 7 |
|---|---|---|---|---|---|---|---|---|
| 42 | This organization is managed in innovative ways by its managers. | | | | | | | |
| 43 | This organization takes its customers seriously. | | | | | | | |
| 44 | In this organization training adds little to the improvement of employee skills. | | | | | | | |
| 45 | Before taking important decisions management consults widely within the organization. | | | | | | | |
| 46 | This organization has the ability to pull teams together to accomplish tasks. | | | | | | | |
| 47 | Employees in this organization feel as though they are being watched to see that they obey all the rules. | | | | | | | |
| 48 | In this organization it is often not clear how departmental goals contribute to the organization's goals. | | | | | | | |
| 49 | In this organization, communications from one department to another is expected to follow formal channels. | | | | | | | |
| 50 | This organization believes that persons doing the work are best equipped to make their own operational decisions. | | | | | | | |
| 51 | This organization pays little attention to finding out about changes in the market place. | | | | | | | |
| 52 | This organization believes in providing information and feedback to its employees. | | | | | | | |
| 53 | This organization's business targets focus more on our in-house capabilities than on what the market wants. | | | | | | | |
| 54 | In this organization employees often hear late about new developments that affect their jobs. | | | | | | | |
| 55 | In this organization, people hold on to information as a source of personal advantage. | | | | | | | |
| 56 | This organization places emphasis on finding the true facts when mistakes had been made. | | | | | | | |
| 57 | This organization makes an effort to learn from what other similar organizations do to improve their productivity. | | | | | | | |
| 58 | This organization shows a preference to trust the gut feel of senior managers when making important decisions. | | | | | | | |
| 59 | In this organization only senior managers in the hierarchy have the authority to get work done. | | | | | | | |
| 60 | There are strong personal bonds between this organization and its employees. | | | | | | | |
| 61 | This organization believes that many of the skills needed for its proper functioning, can be readily obtained by recruiting from outside. | | | | | | | |
| 62 | There is a general tendency to drag feet with decision-making in this organization. | | | | | | | |

| | | Definitely not true 1 | Largely not true 2 | Somewhat not true 3 | Unde-cided 4 | Somewhat true 5 | Largely true 6 | Definitely true 7 |
|---|---|---|---|---|---|---|---|---|
| 63 | Ongoing personal development of employees is encouraged in this organization. | | | | | | | |
| 64 | This organization truly cares for its employees. | | | | | | | |
| 65 | This organization sets explicit standards of performance for its employees. | | | | | | | |
| 66 | This organization has shown that it can effectively implement major in-house change programs. | | | | | | | |
| 67 | This organization encourages employees to improve formal work practices all the time. | | | | | | | |
| 68 | Employees in this organization have to double check all decisions with their managers. | | | | | | | |
| 69 | This organization makes sure that employees have easy access to the information needed to perform their work. | | | | | | | |
| 70 | There is an atmosphere of action and urgency in this organization. | | | | | | | |
| 71 | In this organization jobs often take longer because of the time it takes to refer decisions to higher management levels. | | | | | | | |
| 72 | In this organization it is firmly believed that the organization must take risks to be effective. | | | | | | | |
| 73 | This organization pays little attention to the general working conditions of its employees. | | | | | | | |
| 74 | This organization monitors progress towards its annual objectives right from the start of the financial year. | | | | | | | |
| 75 | In this organization training of staff is a low priority. | | | | | | | |
| 76 | Employees in this organization are more competent than their counterparts in other similar organizations. | | | | | | | |
| 77 | In this organization staff members feel free to put forward their ideas and differences of opinion. | | | | | | | |
| 78 | Changes are often introduced by management without consulting with subordinates. | | | | | | | |
| 79 | This organization believes in developing its own people for future senior positions. | | | | | | | |
| 80 | In this organization, authority to make decisions is only in the hands of senior managers or committees. | | | | | | | |
| 81 | In this organization senior management is too cautious when taking business decisions. | | | | | | | |

| | | Definitely not true 1 | Largely not true 2 | Somewhat not true 3 | Unde-cided 4 | Somewhat true 5 | Largely true 6 | Definitely true 7 |
|---|---|---|---|---|---|---|---|---|
| 82 | In this organization people are serious about addressing customer needs. | | | | | | | |
| 83 | In this organization, only those tasks that are given to a single department, get done effectively. | | | | | | | |
| 84 | People given important tasks can rely on support from senior managers in the organization. | | | | | | | |
| 85 | This organization largely ignores the need for managers to have people leadership skills. | | | | | | | |
| 86 | In this organization there is a strong emphasis on getting things done even if it means disregarding formal procedures. | | | | | | | |
| 87 | In this organization, subordinates will rather try to hide their mistakes than asking for help from their managers. | | | | | | | |
| 88 | Showing loyalty to the right managers, is an important tactic for getting things done in this organization. | | | | | | | |
| 89 | In this organization employees are hesitant to bring bad news to the attention of management. | | | | | | | |
| 90 | In this organization employees are free to make appropriate decisions in their work. | | | | | | | |
| 91 | For this organization it is important to involve operational staff in the design of work processes and systems that affect them. | | | | | | | |
| 92 | This organization frequently measures customer satisfaction. | | | | | | | |
| 93 | In this organization, rivalry between departments often seems to be more important than pursuing the organization's results. | | | | | | | |
| 94 | In our organization people are suspicious of sharing information with colleagues. | | | | | | | |
| 95 | Many of the activities in this organization do not focus on the organization's core mission. | | | | | | | |

# APPENDIX I:

# ITEM RELIABILITY TESTS FOR 95 ITEM QUESTIONNAIRE – VALIDATION SAMPLE (N=107)

## 1. Organizational direction

Summary for scale: Mean=32.1869 Std.Dv.=7.76316 Valid N:107 (Spreadsheet
Cronbach alpha: .823137 Standardized alpha: .824081
Average inter-item corr.: .413900

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| UndStand(Direct) | 27.1495 | 42.3141 | 6.5049 | 0.7056 | 0.7751 |
| ExplGoal(Direct) | 27.6262 | 41.6360 | 6.4526 | 0.7395 | 0.7688 |
| ShareGoal(Direct) | 27.8692 | 43.4221 | 6.5895 | 0.6359 | 0.7873 |
| WorkLink(Direct) | 26.8972 | 50.8399 | 7.1302 | 0.4460 | 0.8177 |
| SideTrac(Direct) | 28.2150 | 48.8790 | 6.9914 | 0.3304 | 0.8402 |
| DeptGoal(Direct) | 27.8318 | 45.2240 | 6.7249 | 0.5648 | 0.7996 |
| CoreMiss(Direct) | 27.5327 | 43.7816 | 6.6168 | 0.5753 | 0.7981 |

## 2. Competitiveness philosophy

Summary for scale: Mean=45.0841 Std.Dv.=11.0600 Valid N:107 (Spreadsheet
Cronbach alpha: .885861 Standardized alpha: .890393
Average inter-item corr.: .492846

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| CusSerious(Market) | 39.5140 | 98.0442 | 9.9017 | 0.6901 | 0.8696 |
| CusNeeds(Market) | 39.7664 | 94.6463 | 9.7286 | 0.8230 | 0.8595 |
| CusServ(Market) | 39.5140 | 97.0349 | 9.8506 | 0.7691 | 0.8644 |
| CusMeas(Market) | 40.3551 | 96.3038 | 9.8134 | 0.6074 | 0.8761 |
| NewMark(Market) | 39.8411 | 96.7318 | 9.8352 | 0.6389 | 0.8732 |
| Competitor(Market) | 40.1028 | 91.1016 | 9.5447 | 0.7399 | 0.8640 |
| CusInterest(Market) | 40.9252 | 107.9383 | 10.3893 | 0.2728 | 0.9036 |
| IntFocus(Market) | 40.5421 | 98.4164 | 9.9205 | 0.5827 | 0.8779 |
| MarkChange(Market) | 40.1122 | 93.8005 | 9.6851 | 0.6997 | 0.8678 |

## 3. Decision-making rationale

Summary for scale: Mean=29.2476 Std.Dv.=6.94315 Valid N:105 (Spreadsheet
Cronbach alpha: .719590 Standardized alpha: .718810
Average inter-item corr.: .278270

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| TrueFact(Rational) | 24.3238 | 35.7047 | 5.9753 | 0.5876 | 0.6533 |
| FactSolve(Rational) | 24.1429 | 36.9224 | 6.0764 | 0.5174 | 0.6697 |
| FactDecide(Rational) | 24.5619 | 40.1128 | 6.3335 | 0.2544 | 0.7280 |
| GutFeel(Rational) | 25.7714 | 42.8049 | 6.5425 | 0.1357 | 0.7506 |
| PersDecide(Rational) | 26.0286 | 35.7992 | 5.9832 | 0.4005 | 0.6965 |
| Loyal(Rational) | 25.5905 | 35.2323 | 5.9357 | 0.4975 | 0.6701 |
| Blame(Rational) | 25.0667 | 30.4622 | 5.5193 | 0.6702 | 0.6164 |

## 4. Cross-functional integration

Summary for scale: Mean=36.6449 Std.Dv.=7.77423 Valid N:107 (Spreadsheet
Cronbach alpha: .740089 Standardized alpha: .744465
Average inter-item corr.: .274652

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| DiffDepts(Integrated) | 31.1495 | 47.6412 | 6.9023 | 0.5263 | 0.6986 |
| JunMngrs(Integrated) | 31.5794 | 51.1409 | 7.1513 | 0.2784 | 0.7417 |
| Together(Integrated) | 31.8318 | 44.6820 | 6.6845 | 0.5667 | 0.6865 |
| Teamwork(Integrated) | 31.8318 | 45.0558 | 6.7124 | 0.5822 | 0.6847 |
| DeptComms(Integrated) | 32.6262 | 50.6640 | 7.1179 | 0.2654 | 0.7462 |
| IndPerform(Integrated) | 33.1776 | 51.6974 | 7.1901 | 0.2138 | 0.7564 |
| DeptComp(Integrated) | 32.1402 | 43.2233 | 6.5744 | 0.5523 | 0.6876 |
| SinglDept(Integrated) | 32.1776 | 46.2395 | 6.8000 | 0.5456 | 0.6929 |

## 5. Communication philosophy

Summary for scale: Mean=37.8585 Std.Dv.=11.3511 Valid N:106 (Spreadsheet
Cronbach alpha: .873799 Standardized alpha: .875804
Average inter-item corr.: .443475

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Trust(Informed) | 34.0094 | 104.7829 | 10.2364 | 0.5468 | 0.8659 |
| InfoFeed(Informed) | 33.4906 | 99.4009 | 9.9700 | 0.6823 | 0.8537 |
| SafeIdeas(Informed) | 33.1981 | 104.7815 | 10.2363 | 0.5718 | 0.8637 |
| PerfFeed(Informed) | 33.3679 | 103.2137 | 10.1594 | 0.5226 | 0.8691 |
| InfoAccess(Informed) | 33.1132 | 102.7608 | 10.1371 | 0.6866 | 0.8545 |
| BadNews(Informed) | 33.8962 | 102.2251 | 10.1106 | 0.6780 | 0.8548 |
| HoldInfo(Informed) | 34.0094 | 101.4999 | 10.0747 | 0.5955 | 0.8619 |
| NotShare(Informed) | 34.2547 | 102.0389 | 10.1014 | 0.6490 | 0.8570 |
| FindLate(Informed) | 33.5283 | 101.2115 | 10.0604 | 0.6042 | 0.8611 |

## 6. Locus of decision-making

Summary for scale: Mean=32.0189 Std.Dv.=10.7145 Valid N:106 (Spreadsheet
Cronbach alpha: .886295 Standardized alpha: .886959
Average inter-item corr.: .501413

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| FreeDecisn(Delegate) | 27.7076 | 86.4333 | 9.2970 | 0.7711 | 0.8611 |
| OpsDecisn(Delegate) | 27.8585 | 88.0460 | 9.3833 | 0.6916 | 0.8687 |
| DelDecisn(Delegate) | 27.7264 | 89.3119 | 9.4505 | 0.5945 | 0.8785 |
| SayGoals(Delegate) | 27.5000 | 92.5708 | 9.6214 | 0.5417 | 0.8830 |
| DblCheck(Delegate) | 28.6981 | 88.7391 | 9.4201 | 0.6615 | 0.8716 |
| TimeDecisn(Delegate) | 28.6226 | 86.9708 | 9.3258 | 0.6611 | 0.8717 |
| AuthDecisn(Delegate) | 28.6887 | 86.5163 | 9.3014 | 0.7236 | 0.8653 |
| AuthWork(Delegate) | 27.3302 | 89.2400 | 9.4467 | 0.6183 | 0.8759 |

## 7. People management philosophy

Summary for scale: Mean=29.6168 Std.Dv.=8.42239 Valid N:107 (Spreadsheet
Cronbach alpha: .820064 Standardized alpha: .821130
Average inter-item corr.: .398479

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| EmpInput(Support) | 25.4673 | 52.7162 | 7.2606 | 0.5991 | 0.7898 |
| ConsWide(Support) | 25.9813 | 51.3268 | 7.1643 | 0.5759 | 0.7938 |
| HandsOn(Support) | 25.3645 | 49.4092 | 7.0292 | 0.6276 | 0.7842 |
| SenSupport(Support) | 24.5327 | 54.7349 | 7.3983 | 0.5963 | 0.7919 |
| Mistakes(Support) | 25.2430 | 54.9316 | 7.4116 | 0.5214 | 0.8025 |
| ProblSupp(Support) | 24.9439 | 54.3146 | 7.3698 | 0.4979 | 0.8068 |
| ChangeCons(Support) | 26.1682 | 54.8128 | 7.4036 | 0.5199 | 0.8028 |

## 8. Flexibility philosophy

Summary for scale: Mean=35.1038 Std.Dv.=8.43906 Valid N:106 (Spreadsheet
Cronbach alpha: .725493 Standardized alpha: .727313
Average inter-item corr.: .235146

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Creative(Flexible) | 30.7736 | 51.2884 | 7.1616 | 0.6088 | 0.6589 |
| DisrProc(Flexible) | 31.2453 | 59.9021 | 7.7396 | 0.2562 | 0.7291 |
| RiskTake(Flexible) | 31.1604 | 60.4177 | 7.7729 | 0.2744 | 0.7235 |
| InnovMan(Flexible) | 30.9340 | 51.7598 | 7.1944 | 0.7090 | 0.6457 |
| RuleWatched(Flexible) | 31.2170 | 57.5661 | 7.5872 | 0.3810 | 0.7048 |
| Channels(Flexible) | 32.1321 | 61.3222 | 7.8308 | 0.2646 | 0.7239 |
| Cautious(Flexible) | 31.1698 | 60.1976 | 7.7587 | 0.3669 | 0.7071 |
| ChangeProj(Flexible) | 30.7076 | 56.7164 | 7.5310 | 0.4651 | 0.6900 |
| ManPract(Flexible) | 31.4906 | 59.7027 | 7.7268 | 0.3217 | 0.7148 |

## 9. Philosophy about people

Summary for scale: Mean=32.9245 Std.Dv.=11.2459 Valid N:106 (Spreadsheet
Cronbach alpha: .903467 Standardized alpha: .902379
Average inter-item corr.: .546643

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| ImportEmp(People) | 29.0943 | 93.9534 | 9.6930 | 0.7804 | 0.8831 |
| Bonds(People) | 29.1887 | 97.4172 | 9.8700 | 0.7070 | 0.8900 |
| LeadSkill(People) | 28.8208 | 96.1471 | 9.8055 | 0.6767 | 0.8929 |
| OwnDev(People) | 28.3679 | 106.2514 | 10.3078 | 0.4888 | 0.9076 |
| Cares(People) | 28.6698 | 92.6740 | 9.6267 | 0.8315 | 0.8784 |
| OnlyWork(People) | 29.1415 | 93.9328 | 9.6919 | 0.7691 | 0.8841 |
| Stingy(People) | 29.0943 | 98.8213 | 9.9409 | 0.6283 | 0.8971 |
| WorkCon(People) | 28.0943 | 98.7081 | 9.9352 | 0.6653 | 0.8936 |

## 10. Personal competency philosophy

Summary for scale: Mean=32.5905 Std.Dv.=7.16521 Valid N:105 (Spreadsheet
Cronbach alpha: .739098 Standardized alpha: .728564
Average inter-item corr.: .292379

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| TrainPrty(Competent) | 27.6762 | 32.5047 | 5.7013 | 0.6840 | 0.6443 |
| TrainExp(Competent) | 27.8571 | 34.6748 | 5.8885 | 0.6981 | 0.6482 |
| AdqLearn(Competent) | 27.5905 | 36.5656 | 6.0470 | 0.6240 | 0.6690 |
| PersDev(Competent) | 27.8476 | 37.5387 | 6.1269 | 0.5263 | 0.6907 |
| AddSkills(Competent) | 27.6476 | 38.6854 | 6.2198 | 0.4408 | 0.7110 |
| Recruit(Competent) | 28.9048 | 46.7719 | 6.8390 | 0.0608 | 0.7914 |
| Competent(Competent) | 28.0191 | 46.1520 | 6.7935 | 0.1785 | 0.7575 |

## 11. Process and systems support philosophy

Summary for scale: Mean=30.8962 Std.Dv.=7.48450 Valid N:106 (Spreadsheet
Cronbach alpha: .786637 Standardized alpha: .790386
Average inter-item corr.: .354520

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| StdWork(Systems) | 25.7736 | 45.1940 | 6.7226 | 0.3827 | 0.7830 |
| ImprWork(Systems) | 25.8868 | 41.0438 | 6.4065 | 0.6722 | 0.7319 |
| PartSyst(Systems) | 25.9717 | 42.6124 | 6.5278 | 0.5255 | 0.7572 |
| ExtLearn(Systems) | 26.4340 | 41.8305 | 6.4677 | 0.5048 | 0.7611 |
| OwnSyst(Systems) | 27.2924 | 42.8296 | 6.5444 | 0.4120 | 0.7812 |
| FailSyst(Systems) | 26.8585 | 40.7441 | 6.3831 | 0.5605 | 0.7499 |
| Reinvent(Systems) | 27.1604 | 41.2667 | 6.4239 | 0.5625 | 0.7497 |

## 12. Performance management philosophy

Summary for scale: Mean=40.0849 Std.Dv.=9.58781 Valid N:106 (Spreadsheet
Cronbach alpha: .801816 Standardized alpha: .798508
Average inter-item corr.: .310113

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| ExplStds(Driven) | 35.3019 | 75.9466 | 8.7147 | 0.4470 | 0.7881 |
| Account(Driven) | 34.6887 | 81.4219 | 9.0234 | 0.2739 | 0.8071 |
| Action(Driven) | 35.3396 | 77.6394 | 8.8113 | 0.4062 | 0.7928 |
| PerfRwrd(Driven) | 36.5472 | 67.7195 | 8.2292 | 0.6427 | 0.7607 |
| CnstrAss(Driven) | 35.3208 | 72.6707 | 8.5247 | 0.5981 | 0.7699 |
| RespResult(Driven) | 35.9151 | 71.2098 | 8.4386 | 0.5280 | 0.7777 |
| Progress(Driven) | 35.1604 | 74.4177 | 8.6266 | 0.4450 | 0.7888 |
| NoDrive(Driven) | 35.8113 | 72.3983 | 8.5087 | 0.5166 | 0.7792 |
| DragFeet(Driven) | 36.5943 | 70.1468 | 8.3754 | 0.5713 | 0.7715 |

# APPENDIX J:

# ITEM RELIABILITY ANALYSIS OF THE 77 ITEMS RETAINED FOR THE FINAL QUESTIONNAIRE BASED ON THE VALIDATION SAMPLE DATA (N=109)

**1. Organizational direction**

```
          Number of items in scale: 5

             Number of valid cases: 109
  Number of cases with missing data: 0
         Missing data were deleted: casewise

                      SUMMARY STATISTICS FOR SCALE
              Mean: 22.834862385                  Sum: 2489.0000000
 Standard Deviation:  6.366163100             Variance: 40.528032620
          Skewness:  -.101890595             Kurtosis:  -.864530583
           Minimum:  9.000000000              Maximum: 35.000000000
   Cronbach's alpha:   .838767250    Standardized alpha:   .839369277
                        Average Inter-Item Correlation:   .520224212
```

**2. Competitiveness philosophy**

```
          Number of items in scale: 7

             Number of valid cases: 109
  Number of cases with missing data: 0
         Missing data were deleted: casewise

                      SUMMARY STATISTICS FOR SCALE
              Mean: 36.018348624                  Sum: 3926.0000000
 Standard Deviation:  9.236583515             Variance: 85.314475025
          Skewness:  -.751163607             Kurtosis:  -.102163380
           Minimum: 11.000000000              Maximum: 49.000000000
   Cronbach's alpha:   .899004834    Standardized alpha:   .900883089
                        Average Inter-Item Correlation:   .575731051
```

**3. Decision-making rationale**

```
          Number of items in scale: 5

             Number of valid cases: 108
  Number of cases with missing data: 1
         Missing data were deleted: casewise

                      SUMMARY STATISTICS FOR SCALE
              Mean: 21.018518519                  Sum: 2270.0000000
 Standard Deviation:  5.896270771             Variance: 34.766009000
          Skewness:  -.091726611             Kurtosis:  -.427532811
           Minimum:  5.000000000              Maximum: 34.000000000
   Cronbach's alpha:   .761158514    Standardized alpha:   .766040299
                        Average Inter-Item Correlation:   .404861605
```

**4. Cross-functional integration**

```
           Number of items in scale: 5

              Number of valid cases: 109
  Number of cases with missing data: 0
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 23.981651376                  Sum: 2614.0000000
 Standard Deviation:  6.018461800              Variance: 36.221882433
           Skewness:  -.325400716              Kurtosis:  -.622840022
            Minimum:  8.000000000               Maximum: 35.000000000
   Cronbach's alpha:   .802613249    Standardized alpha:   .803940915
                         Average Inter-Item Correlation:   .452011501
```

**5. Communication philosophy**

```
           Number of items in scale: 8

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 33.166666667                  Sum: 3582.0000000
 Standard Deviation: 10.220466913              Variance: 104.45794393
           Skewness:  -.028443067              Kurtosis:  -.674897681
            Minimum:  8.000000000               Maximum: 55.000000000
   Cronbach's alpha:   .870870026    Standardized alpha:   .872005262
                         Average Inter-Item Correlation:   .462879423
```

**6. Locus of decision-making**

```
           Number of items in scale: 7

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 27.444444444                  Sum: 2964.0000000
 Standard Deviation:  9.585165069              Variance: 91.875389408
           Skewness:  -.018046845              Kurtosis:  -.781525570
            Minimum:  7.000000000               Maximum: 49.000000000
   Cronbach's alpha:   .881272260    Standardized alpha:   .882378217
                         Average Inter-Item Correlation:   .523663258
```

**7. People management philosophy**

```
           Number of items in scale: 7

              Number of valid cases: 109
  Number of cases with missing data: 0
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 29.458715596                  Sum: 3211.0000000
 Standard Deviation:  8.425635606             Variance: 70.991335372
           Skewness:  -.085619548             Kurtosis:  -.688776912
            Minimum:  7.000000000              Maximum: 45.000000000
   Cronbach's alpha:   .821735610    Standardized alpha:   .822854480
                         Average Inter-Item Correlation:   .401264063
```

**8. Flexibility philosophy**

```
           Number of items in scale: 7

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 28.194444444                  Sum: 3045.0000000
 Standard Deviation:  7.225937618             Variance: 52.214174455
           Skewness:  -.401402881             Kurtosis:  -.122950179
            Minimum: 11.000000000              Maximum: 45.000000000
   Cronbach's alpha:   .735379339    Standardized alpha:   .736900506
                         Average Inter-Item Correlation:   .293568701
```

**9. Philosophy about people**

```
           Number of items in scale: 6

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 24.342592593                  Sum: 2629.0000000
 Standard Deviation:  9.091602408             Variance: 82.657234337
           Skewness:  -.101461484             Kurtosis: -1.006886293
            Minimum:  6.000000000              Maximum: 42.000000000
   Cronbach's alpha:   .903477120    Standardized alpha:   .903602969
                         Average Inter-Item Correlation:   .616229967
```

**10. Personal competency philosophy**

```
           Number of items in scale: 5

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 24.074074074                  Sum: 2600.0000000
 Standard Deviation:  6.611663022              Variance: 43.714087920
           Skewness:  -.661207598              Kurtosis:   .125696442
            Minimum:  6.000000000               Maximum: 35.000000000
   Cronbach's alpha:   .829024467    Standardized alpha:   .828935585
                         Average Inter-Item Correlation:   .495638933
```

**11. Process and systems support philosophy**

```
           Number of items in scale: 7

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 30.703703704                  Sum: 3316.0000000
 Standard Deviation:  7.561905584              Variance: 57.182416061
           Skewness:  -.255720986              Kurtosis:  -.213955086
            Minimum:  7.000000000               Maximum: 46.000000000
   Cronbach's alpha:   .788538136    Standardized alpha:   .792024126
                         Average Inter-Item Correlation:   .356811712
```

**12. Performance management philosophy**

```
           Number of items in scale: 8

              Number of valid cases: 108
  Number of cases with missing data: 1
          Missing data were deleted: casewise

                       SUMMARY STATISTICS FOR SCALE
               Mean: 34.425925926                  Sum: 3718.0000000
 Standard Deviation:  9.215188300              Variance: 84.919695396
           Skewness:  -.013491395              Kurtosis:  -.720115947
            Minimum: 15.000000000               Maximum: 55.000000000
   Cronbach's alpha:   .814976263    Standardized alpha:   .814736301
                         Average Inter-Item Correlation:   .357940024
```

# APPENDIX K:

# FINAL ORGANIZATIONAL CULTURE QUESTIONNAIRE (77 ITEMS) USED IN THE SURVEY

# University of Stellenbosch Business School

***Organisational management culture scale***

This questionnaire has 77 statements that assess the underlying management values and culture that shape the worklife in an organisation.

You are requested to evaluate each statement and decide to what extent it corresponds to the true, customary ways of doing things in the organisation. For the purpose of this survey, avoid to be guided by the official, executive "talk" about values and ideals for the organisation, especially those that have no real impact on the daily management and relationships in the organisation.

Please rate each statement on the scale of 1 to 7 where 1 = you Strongly Disagree and 7 = you Strongly Agree that the statement accurately reflects the situation in your organisation. Be as objective and honest as possible. There are no right or wrong answers, the research relies on your objectively critical view.

This survey should take you 15 to 20 minutes to complete. Participation in the survey is voluntary, but we kindly rely on your willingness to assist us.

Your response is totally anonymous and the data will only be used for research purposes. Under no circumstances will your personal response be disclosed to your organisation, nor will your organisation's data be disclosed to any third party.

**Please indicate which category best describes your position in the organisation**

| | |
|---|---|
| Senior manager (Functional department manager or higher) | ☐ |
| Middle manager (Below functional department manager level) | ☐ |
| Functional specialist (technical, financial, legal, IT, marketing, etc) | ☐ |
| Supervisory level | ☐ |
| Other | ☐ |

| | **In respect of each of the following statements, indicate to what extent you agree that it is an accurate reflection of how things are done in your organisation** | Strongly disagree | Fairly disagree | Slightly disagree | Unde-cided | Slightly agree | Fairly agree | Strongly agree |
|---|---|---|---|---|---|---|---|---|
| 1 | The organisation makes sure that there are adequate opportunities for on-the-job-training | | | | | | | |
| 2 | Employees have to rely on working out their own "informal" systems and processes to cope with their work | | | | | | | |
| 3 | The organisation readily delegates decision-making authority to persons that are put in control of tasks | | | | | | | |
| 4 | The organisation ensures that its training activities meet the skills needs of the organisation | | | | | | | |
| 5 | Management listens to the inputs of employees when developing its policies | | | | | | | |
| 6 | The personal agendas of senior managers often impact on organisational decisions | | | | | | | |
| 7 | Employees in different departments feel comfortable calling each other when the need arises | | | | | | | |
| 8 | Managers constructively assist subordinates with finding ways to achieve their objectives | | | | | | | |
| 9 | The organisation is likely to standardise work processes and systems found to work effectively | | | | | | | |
| 10 | Senior management has a "hands on" understanding of what is going on at the operational levels | | | | | | | |
| 11 | The organisation is trying to find new market opportunities all the time | | | | | | | |
| 12 | Different departments in the organisation often work together toward the achievement of the organisation's goals | | | | | | | |
| 13 | In this organisation employees have the freedom to be creative in their work | | | | | | | |
| 14 | The organisation is often more concerned with getting someone to blame than with finding the genuine causes of failure | | | | | | | |
| 15 | Managers provide little support to employees in dealing with difficult job problems | | | | | | | |
| 16 | There is a strong link between employees' performance and how they are rewarded | | | | | | | |
| 17 | Employees across the organisation share a commitment to the goals that are important for the organisation's success | | | | | | | |
| 18 | The organisation often fails to recognise valuable systems and processes developed by employees on the job | | | | | | | |
| 19 | The organisation is only interested in its employees for the work they do | | | | | | | |
| 20 | The organisation clearly understands what it needs to do to be successful | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 21 | The whole organisation is aligned towards explicit organisation-wide goals | | | | | | | |
| 22 | There is a sense of trust between employees in the organisation | | | | | | | |
| 23 | Across the organisation, there is a strong emphasis on giving the customer the best quality and service | | | | | | | |
| 24 | The organisation pays little attention to who its competitors are | | | | | | | |
| 25 | Employees often waste valuable time by having to reinvent the wheel in solving work problems | | | | | | | |
| 26 | It is often hard to follow who is responsible for what results in the organisation | | | | | | | |
| 27 | Employees in the organisation lack the drive needed to achieve organisational objectives | | | | | | | |
| 28 | The organisation behaves towards its employees as if they are valuable assets of the organisation | | | | | | | |
| 29 | The organisation holds fast to its established management practices regardless of changes in circumstances | | | | | | | |
| 30 | The organisation believes in collecting the relevant facts in order to solve problems | | | | | | | |
| 31 | The organisation is managed in innovative ways by its managers | | | | | | | |
| 32 | The organisation takes its customers seriously | | | | | | | |
| 33 | The training provided by the organisation barely contributes to the improvement of employee skills | | | | | | | |
| 34 | Before taking important decisions, management consults widely within the organisation | | | | | | | |
| 35 | The organisation has the ability to pull teams together to accomplish tasks | | | | | | | |
| 36 | Employeese feel as though they are being watched to see that they obey all the rules | | | | | | | |
| 37 | It is often hard to see how certain departmental goals contribute to the organisation's goals | | | | | | | |
| 38 | The organisation believes that persons doing the work are best equipped to make their own operational decisions | | | | | | | |
| 39 | The organisation pays little attention to learning about changes in the market place | | | | | | | |
| 40 | The organisation believes in providing information and feedback to its employees | | | | | | | |
| 41 | The organisation's business targets focus more on our existing capabilities than on opportunities in the market place | | | | | | | |
| 42 | Employees often find out at a late stage about changes that affect their jobs | | | | | | | |
| 43 | People hold onto information as a source of personal advantage | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 44 | The organisation places emphasis on finding the true reasons when mistakes had been made | | | | | | | |
| 45 | The organisation makes an effort to study what other similar organisations do to improve ways of work | | | | | | | |
| 46 | Only positions with a senior status in the hierarchy, carry sufficient authority to get work done | | | | | | | |
| 47 | There are strong personal bonds between the organisation and its employees | | | | | | | |
| 48 | There is a general tendency to drag feet with decision-making in the organisation | | | | | | | |
| 49 | Ongoing personal development of employees is encouraged in the organisation | | | | | | | |
| 50 | The organisation truly cares for its employees | | | | | | | |
| 51 | The organisation sets explicit standards of performance for its employees | | | | | | | |
| 52 | The organisation has shown that it can implement major in-house changes effectively | | | | | | | |
| 53 | The organisation encourages employees to improve formal work practices all the time | | | | | | | |
| 54 | Employees have to double check all decisions with their managers | | | | | | | |
| 55 | The organisation makes sure that employees have easy access to the information needed to perform their work | | | | | | | |
| 56 | There is an atmosphere of action and urgency in the organisation | | | | | | | |
| 57 | Jobs often take longer because of the time taken by referring decisions to higher management levels | | | | | | | |
| 58 | The organisation approaches the taking of risks as necessary in order to be effective | | | | | | | |
| 59 | The organisation pays little attention to the general working conditions of its employees | | | | | | | |
| 60 | The organisation monitors progress towards its annual objectives right from the start of the annual cycle | | | | | | | |
| 61 | In this organisation training of staff is a low priority | | | | | | | |
| 62 | Staff members feel free to put forward their ideas and differences of opinion | | | | | | | |
| 63 | Changes are often introduced by management without consulting with employees | | | | | | | |
| 64 | Authority to make decisions is concentrated in the hands of senior managers or committees | | | | | | | |
| 65 | Senior management is too cautious in taking business decisions | | | | | | | |
| 66 | People across the organisation are serious about addressing customer needs | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 67 | Only those tasks that are given to a single department get done effectively | | | | | | | |
| 68 | People that are given important tasks can rely on support from senior managers in the organisation | | | | | | | |
| 69 | The organisation largely ignores the need for managers to have people leadership skills | | | | | | | |
| 70 | Employees will rather try to hide their mistakes than asking for help from their managers | | | | | | | |
| 71 | Showing loyalty to the right managers, is an important technique for getting things done in the organisation | | | | | | | |
| 72 | Employees are reluctant to bring bad news to the attention of management | | | | | | | |
| 73 | Employees are free to make appropriate decisions in their work | | | | | | | |
| 74 | It is the rule to involve operational staff in the design of work processes and systems that affect them | | | | | | | |
| 75 | Rivalry between departments often seems to take priority over pursuing the organisation's results | | | | | | | |
| 76 | In our organisation, people are suspicious of sharing information with colleagues | | | | | | | |
| 77 | There are several side-issues in the organisation that do not focus on the organisation's core mission | | | | | | | |

Thank you for your participation! It is highly appreciated.

# APPENDIX L:

# FINAL PROJECT MANAGEMENT EFFECTIVENESS QUESTIONNAIRE SET USED IN THE SURVEY

# University of Stellenbosch Business School

*Project Management Effectiveness Instrument A*

## Senior Manager

This questionnaire has 16 statements that assesses whether, from a strategic point of view, project management is delivering and functioning in accordance with senior management expectations.

Your assessment will be used alongside two accompanying questionnaires, addressing project managers' and project team members' perceptions of project management about domains of their concern, to form a comprehensive picture of the effectiveness of project management in your organisation.

Please rate each statement on the scale of 1 to 7 where 1 = you Strongly Disagree and 7 = you Strongly Agree that the statement accurately reflects the situation in your organisation. Be as objective as possible. The research relies on a critical assesment of your organisation's performance in project management.

This survey should take you less than 7 minutes to complete. Participation in the survey is voluntary, but we kindly rely on your willingness to assist us.

Your response is totally anonymous and the data will only be used for research purposes. Under no circumstances will your personal response be disclosed to your organisation, nor will your organisation's data be disclosed to any third party.

**Please also complete the classification data page attached to this questionnaire**

| | **With regard to how project management is practiced, and projects generally perform across your organisation, please answer to what extent you agree that . . .** | Strongly disagree | Fairly disagree | Slightly disagree | Unde-cided | Slightly agree | Fairly agree | Strongly agree |
|---|---|---|---|---|---|---|---|---|
| 1 | Through its ability in project management, this organisation can develop new products or systems faster | | | | | | | |
| 2 | Project management gives this organisation greater efficiency in using functional specialists on multiple tasks concurrently | | | | | | | |
| 3 | Project management improves the ability of this organisation to respond to customer or end user needs in developing new products | | | | | | | |
| 4 | Project management improves the organisation's capability to carry out major non-routine, multi-disciplinary tasks | | | | | | | |
| 5 | Project management effectively frees top management from the daily burden of coordinating multi-departmental projects | | | | | | | |
| 6 | Project management improves our ability to deal with the interests of stakeholders in new initiatives by the organisation | | | | | | | |
| 7 | Project management is effective in performing against the time deadlines set for the organisation's projects | | | | | | | |
| 8 | Project management is effective in performing against the cost budgets set for the organisation's projects | | | | | | | |
| 9 | Project management succeeds in meeting the laid down quality standards of the organisation's projects | | | | | | | |
| 10 | Project management succeeds in meeting the laid down functional performance criteria of the organisation's projects | | | | | | | |
| 11 | Project management succeeds in achieving customer satisfaction in respect of the organisation's projects | | | | | | | |
| 12 | Project management is smoothly integrated into the normal flow of organisational activity | | | | | | | |
| 13 | Staff from different departments generally feel positive about getting involved in projects | | | | | | | |
| 14 | Good performance on project work is recognised in the performance appraisals of functional department staff | | | | | | | |
| 15 | There are adequate career prospects for project managers in this organisation | | | | | | | |
| 16 | There is a clear distinction between the project roles of functional and project managers in this organisation | | | | | | | |

Thank you for your participation! It is highly appreciated.

**Organisation Classification Information - Project management Culture Research** **U22**

1. Number of employees working for the organisation:
   - Below 200 employees ☐
   - Between 200 and 500 employees ☐
   - Between 500 and 1 000 employees ☐
   - More than 1 000 employees ☐

2. For how long have your organisation been using project management to manage its projects?
   - Less than 5 years ☐
   - Between 5 and 10 years ☐
   - Between 10 and 15 years ☐
   - More than 15 years ☐

3. What is the average money value of the typical project run by your organisation?
   - Below R100 000 ☐
   - Between R100 000 and R 1 million ☐
   - Between R1 million and R 10 million ☐
   - More than R 10 million ☐

4. Project management in your organisation is typically used for (select the most appropriate):
   - Doing in-house projects ☐
   - Doing projects for external clients ☐
   - Doing both in-house and external client projects ☐

5. What portion of your total work output is generated by project management?
   - Less than 25 % ☐
   - Between 25 and 50 % ☐
   - Between 50 and 75 % ☐
   - More than 75 % ☐

6. Select the organisational arrangement that best describes how you manage your major projects:
   - Use dedicated project managers belonging to a separate project unit ☐
   - Use dedicated project managers, but reporting to functional depts ☐
   - Use part-time project managers also having functional responsibilities ☐
   - Other arrangement ☐

# University of Stellenbosch Business School

***Project Management Effectiveness Instrument B***

This questionnaire has 48 statements probing whether, from a project manager's perspective, project management is functioning in accordance with expectations in the organisation.

Your assessment will be used alongside two accompanying questionnaires, addressing project team members' and top management's perceptions of project management, to form a comprehensive picture of the effectiveness of project management in your organisation.

Please rate each statement on the scale of 1 to 7 where 1 = you Strongly Disagree and 7 = you Strongly Agree that the statement accurately reflects the situation in your organisation. Be as objective and honest as possible. The research relies on a critical assesment of your organisation's performance in project management.

This survey should take you less than 12 minutes to complete. Participation in the survey is voluntary, but we kindly rely on your willingness to assist us.

Your response is totally anonymous and the data will only be used for research purposes. Under no circumstances will your personal response be disclosed to your organisation, nor will your organisation's data be disclosed to any third party.

| | **With regard to how project management is practiced, and projects generally perform across your organisation, please answer to what extent you agree that . . .** | 1 Strongly disagree | 2 Fairly disagree | 3 Slightly disagree | 4 Unde-cided | 5 Slightly agree | 6 Fairly agree | 7 Strongly agree |
|---|---|---|---|---|---|---|---|---|
| 1 | There is a supportive atmosphere towards projects in this organisation | | | | | | | |
| 2 | Top management shows the necessary understanding of what it takes to make project management work | | | | | | | |
| 3 | The organisation provides effective training for developing project management skills | | | | | | | |
| 4 | Project managers are given the authority they need to have effective control over their project responsibilities | | | | | | | |
| 5 | Top management is prepared to give the necessary support when projects experience difficulty | | | | | | | |
| 6 | Project managers can rely on the resources of the organisation to meet their project commitments | | | | | | | |
| 7 | Interdepartmental rivalry is found to have little impact on people cooperating towards the success of projects | | | | | | | |
| 8 | Top management makes sure that the rest of the organisation is well aware of the importance of projects' goals for the organisation | | | | | | | |
| 9 | In the organisation, proper upfront homework to evaluate the feasibility of projects before they are started, is the rule | | | | | | | |
| 10 | The organisation encourages the collection of factual information to support project planning and estimation | | | | | | | |
| 11 | The targets and deadlines set for projects in the organisation, are realistically achievable | | | | | | | |
| 12 | The organisation succeeds in running proper reviews of mistakes and successes after project completion | | | | | | | |
| 13 | The relative priorities of projects are kept stable and are not regularly changed around by top management | | | | | | | |
| 14 | The availability of resources are checked before setting project priorities and targets | | | | | | | |
| 15 | The organisation makes sure that there is customer support for a project before giving the go-ahead | | | | | | | |
| 16 | The organisation makes use of a standardised project management approach for managing projects across the organisation | | | | | | | |
| 17 | The organisation adequately provides the information project participants need to manage their project assignments | | | | | | | |
| 18 | The organisation has the ability to do project estimation to a sufficient degree of accuracy | | | | | | | |
| 19 | The organisation's project information systems provide project information that is timeous and accurate | | | | | | | |
| 20 | The methods and procedures used by the organisation to manage projects are appropriate for this organisation's projects | | | | | | | |
| 21 | The scope of each project is clearly defined at start-up | | | | | | | |
| 22 | Projects readily get momentum and seldom get bogged down by start-up problems | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 23 | Generally, project participants understand how the project management systems in the organisation work | | | | | | | |
| 24 | There is an ongoing process of monitoring and controlling project progress | | | | | | | |
| 25 | In this organisation, spending effort upfront to put focus on the potential risks of projects, is consistently practiced | | | | | | | |
| 26 | Project risks are monitored and managed on an ongoing basis | | | | | | | |
| 27 | Project scope changes can only be made by following controlled procedures | | | | | | | |
| 28 | Staff participating in projects are competent in their fields of expertise | | | | | | | |
| 29 | The projects executed by this organisation can rely on a competent network of suppliers and subcontractors | | | | | | | |
| 30 | People that are put in control of project tasks have adequate skills in project management | | | | | | | |
| 31 | Generally, staff members assigned to project teams have the maturity to run their project tasks independently | | | | | | | |
| 32 | There is seldom a need for rework on project tasks delivered by project team members | | | | | | | |
| 33 | Staff from different departments are comfortable with working together in project teams | | | | | | | |
| 34 | Regular formal discussions are held with a project's customer during execution of the project | | | | | | | |
| 35 | Each project has an explicit customer, or end-user, represented in the project team | | | | | | | |
| 36 | Project teams build good relationships with their respective project customers | | | | | | | |
| 37 | Managing the customer interface is practiced as an important concern of the project management process | | | | | | | |
| 38 | Project managers have sufficient authority to harness the resources they need to accomplish project objectives | | | | | | | |
| 39 | Through its ability in project management, this organisation can develop new products or systems faster | | | | | | | |
| 40 | Project management gives this organisation greater efficiency in using functional specialists on multiple tasks concurrently | | | | | | | |
| 41 | Project management improves the ability of this organisation to respond to customer or end user needs in developing new products | | | | | | | |
| 42 | Project management is effective in performing against the time deadlines set for the organisation's projects | | | | | | | |
| 43 | Project management is effective in performing against the cost budgets set for the organisation's projects | | | | | | | |
| 44 | Project management succeeds in meeting the laid down quality standards of the organisation's projects | | | | | | | |
| 45 | Project management succeeds in meeting the laid down functional performance criteria of the organisation's projects | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 46 | Project management succeeds in achieving customer satisfaction in respect of the organisation's projects | | | | | | | |
| 47 | There are adequate career prospects for project managers in this organisation | | | | | | | |
| 48 | There is a clear distinction between the project roles of functional and project managers in this organisation | | | | | | | |

Thank you for your participation! It is highly appreciated.

# University of Stellenbosch Business School

*Project Management Effectiveness Instrument C*

## Project Team Members

This questionnaire has 18 statements probing whether, from a project team member perspective, project management is functioning well in the organisation.

Your assessment will be used alongside two accompanying questionnaires, addressing project managers' and top management's perceptions of project management, to form a comprehensive picture of the effectiveness of project management in your organisation.

Please rate each statement on the scale of 1 to 7 where 1 = you Strongly Disagree and 7 = you Strongly Agree that the statement accurately reflects the situation in your organisation. Be as objective and honest as possible. The research relies on a critical assesment of your organisation's performance in project management.

This survey should take you less than 7 minutes to complete. Participation in the survey is voluntary, but we kindly rely on your willingness to assist us.

Your response is totally anonymous and the data will only be used for research purposes. Under no circumstances will your personal response be disclosed to your organisation, nor will your organisation's data be disclosed to any third party.

| | **With regard to how project management is practiced, and projects generally perform across your organisation, please answer to what extent you agree that . . .** | Strongly disagree | Fairly disagree | Slightly disagree | Unde-cided | Slightly agree | Fairly agree | Strongly agree |
|---|---|---|---|---|---|---|---|---|
| 1 | Project managers keep team members to their project task deadlines | | | | | | | |
| 2 | The organisation puts competent project managers in charge of projects | | | | | | | |
| 3 | In this organisation, project managers are appropriately skilled in people skills such as leading people and teams | | | | | | | |
| 4 | Decision-making in projects is smooth and decisive | | | | | | | |
| 5 | Project goals and targets are clearly communicated to project participants at project startup | | | | | | | |
| 6 | Project managers provide inspiration to team members to meet their project commitments | | | | | | | |
| 7 | The organisation holds their project managers accountable for meeting their project objectives | | | | | | | |
| 8 | Project team members know clearly what their responsibilities in a project are | | | | | | | |
| 9 | Project team members participate in setting objectives for their project tasks | | | | | | | |
| 10 | Project team members feel committed to the overall goals of the projects they participate in | | | | | | | |
| 11 | Project participants freely communicate with each other on project matters | | | | | | | |
| 12 | There is an adequate project communication plan in place for each project | | | | | | | |
| 13 | The channels for reporting project problems are clear to all project participants | | | | | | | |
| 14 | Project progress information is regularly distributed to all project participants | | | | | | | |
| 15 | Project participants feel comfortable with reporting potential problems in their tasks immediately | | | | | | | |
| 16 | Project management is smoothly integrated into the normal flow of organisational activity | | | | | | | |
| 17 | Staff from different departments generally feel positive about getting involved in projects | | | | | | | |
| 18 | Good performance on project work is recognised in the performance appraisals of functional department staff | | | | | | | |

Thank you for your participation! It is highly appreciated.

# APPENDIX M:

# TEMPLATE LETTERS OF INVITATION USED IN THE FINAL SURVEY

## Letter to establish contact with an organisation

Dear

We want to approach (organisation name) to participate in this research survey. This is part of a doctoral study at the **University of Stellenbosch Business School**, and we are researching what profile of organizational culture creates an enabling environment for effective project management in an organization.

We aim our study at organizations that are running projects on a cross-functional or matrix basis; thus organizations where specialists from different functional disciplines are drawn into project teams on an ad hoc basis. Under this scenario, team members are faced with reporting to both vertical line authority and horizontal project authority whilst participating in projects.

Currently we target organizations nationally to participate in a survey to test our hypothesis that culture styles substantially impact on project management effectiveness. Participation in the survey is simple – it involves self-administered questionnaires to be completed by between 12 and 30 people in an organization (depending on organization size). All survey items are attitude / perception based - no confidential company data is required. The questionnaires will take up minimal time – one third will take 5 minutes, one third 10 minutes, and the rest 15 minutes to complete.

Each participating organization will get a dedicated report showing its culture, as measured on a 12 dimensional scale, and also how its project management processes measure on an effectiveness scale. The report will compare these measurements against the survey average, and also map these against the best practicing project management organizations.

Please, if you want to give this consideration, put me in contact with a senior person closely associated with the project management function in (organisation name), with whom I can further discuss possible participation. Your response will not commit the organization in any way to take part.

Please do not hesitate to contact me at (021) 913 3508 (Cell: 084 5700 720) or Prof Chris Brown at (021) 918 4230 (cjb2@belpark.sun.ac.za), should you need any further clarification.

Kind regards

John Morrison

### Letter to invite organisation to participate after contact has been established

Dear

## The Project Management Supportive Culture – A University of Stellenbosch Business School Research Project

Thanks for allowing me to send you this further information and invitation to participate. This letter explains the research and what participation will entail. I would be glad if you could give this your serious consideration.

The research aims to find the impact of organisational culture on the ability of organisations to be successful with project management. Many organisations, especially those that have to integrate line and project functions (a matrix arrangement), do not achieve the desired level of organisational competency in project management. For several years now researchers have speculated about the role of organisational culture, vaguely suggesting the notion of a supportive culture for project management. Our research attempts to demonstrate the existence of such a supportive culture, and to define it concretely as a set of dimensions, showing how each dimension supports or resists project management.

The value of this research, once published, lies in the fact that organisations will get insight into the cultures and management philosophies of best practice project management organisations. By offering industry this deeper understanding, as well as a framework for comparison, we trust that new and vital avenues for improving project management may emerge for many South African organisations.

We will approach your participation not as simply to support our aims. On completion of the research, each participating organisation will get a dedicated confidential company report. The report will, besides introducing the key overall research findings, present a detailed analysis of the culture and project management effectiveness in your organisation. This analysis will be mapped against industry averages and best practicing organisations. The report can be of tremendous value in your own ongoing quest for project management excellence. A preliminary example of this report is available on request.

Participating in the research is straightforward; we simply need: (a) the necessary endorsement by the organisation; (b) access to; and (c) e-mail contact information in respect of nominees to complete questionnaires as follows (**an illustration at the end of this letter, graphically explains the approach**):

A. One person at <u>senior management</u> level, closely involved with projects across the organisation, who could give a critical <u>organisational perspective of the status of project management</u> (16 item scale - ± 5 min)

B. Up to 15* regular <u>project managers</u> to complete the <u>project manager questionnaire</u> (48 item scale - ± 10 min)

C. Up to 15* regular <u>project team members</u> to complete the <u>project team questionnaire</u> (18 item scale - ± 5 min)

D. Up to 15* people occupying <u>middle management</u>, <u>functional specialist</u>, and <u>supervisory</u> positions across the organisation to complete the <u>organisational culture questionnaire</u> (77 item scale - ± 15 min)

** The specific number depends on the size of the organisation and what can be regarded as representative of the particular category in your organisation. In certain organisations, fewer*

*people will be adequate. We do not want to be too onerous and will be flexible to accept what is reasonable for you.*

The survey will be delivered electronically by way of e-mail. Once we have the necessary contact detail, all correspondence will take place directly with nominees, minimising the need to collate the process from within your organisation. The questionnaires have been made as short as possible; completion and submission also take place electronically. The length and time to complete each scale are indicated above.

We hope that you will seriously consider this request to participate. We are convinced that you will find this a rewarding exercise for yourselves; at the same time you will enable us to make a vital contribution to the theoretical field of project management.Your participation will be sincerely appreciated.

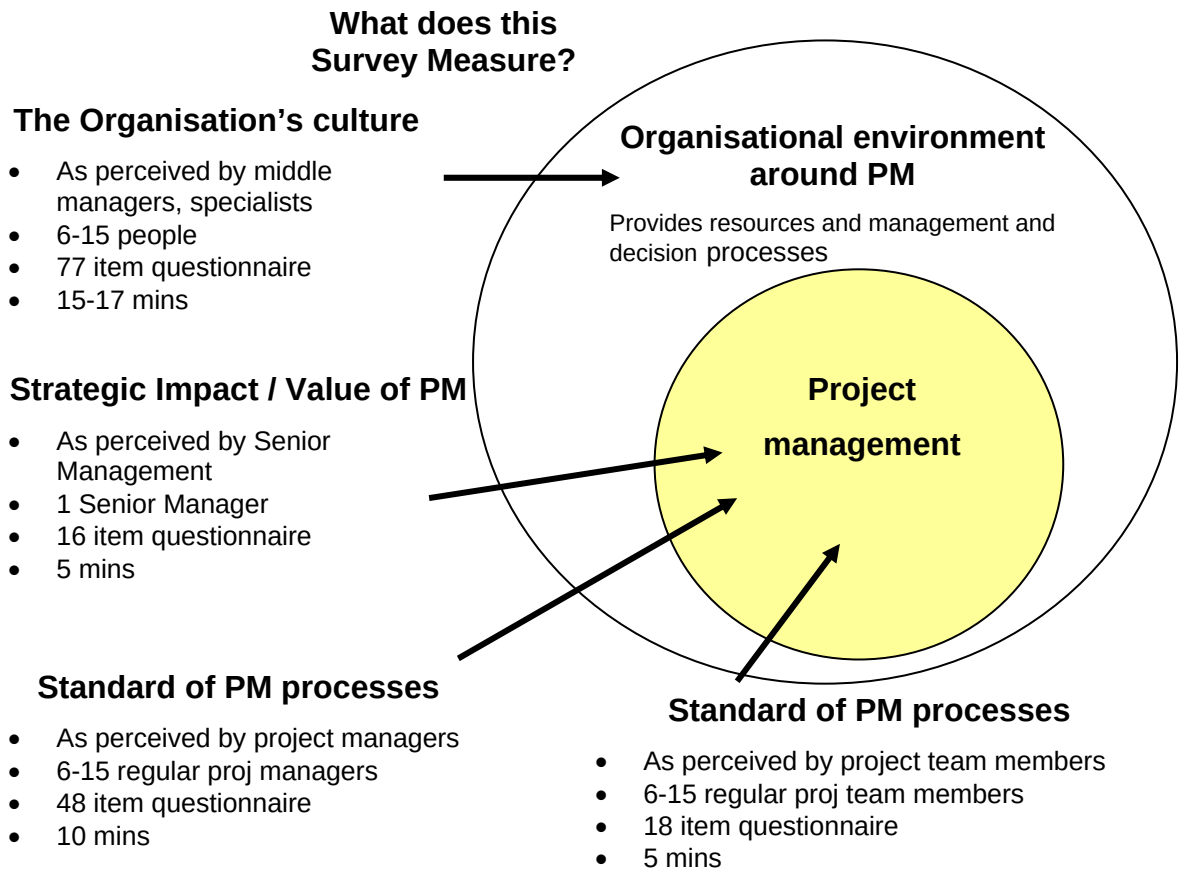
Our kindest regards.

**John Morrison**

jm@sun.ac.za

084 570 0720 / 021 913-3508

**Note: This research is being done as part of a PhD study under the supervision of Prof Chris Brown at the Business School of the University of Stellenbosch. Should you have any enquiry about the research, you are most welcome to contact Prof. Brown at 012 918 4230 (e-mail: cjb2@belpark.sun.ac.za).**



## Letter to invite nominee to complete the culture questionnaire

«email»
«FrmNo»

Dear «Fname»

**«OrgName»** has agreed, in collaboration with «OrgSupport», to participate in a research survey of the University of Stellenbosch Business School to study how the ***culture of an organisation impacts on project management***. You have been nominated by your organisation as part of a group to complete the attached questionnaire to assess the cultural profile of **«OrgName»**. This culture assessment functions in combination with other instruments distributed to measure the effectiveness project management in «OrgName».

Besides assisting our research, for which we will be greately thankful, it is an opportunity for you to give frank feedback on a range of key practices and issues in the organisation which are believed to influence project management. A comprehensive survey report will be given to your organisation, covering both culture and project management. This will allow executive management to view your organisation's strengths and weaknesses in comparison with industry averages and best practices of project management practicing organisations.

The questionnaire has been designed to make your participation as easy as possible. All actions and responses to questions are done by simply clicking buttons or options. At completion the questionnaire data is e-mailed also by clicking a button. The total exercise should take no more than 15 minutes of your time. ***See box below for instruction details***.

Your organisation's participation and findings are strictly confidential. Similarly, the anonymity of your personal response is protected. The questionnaire design allows you to respond honestly and critically. Your completed response is directly e-mailed to us. Before it is sent, your visible response is electronically erased, and only a file with encrypted data is sent via e-mail to prevent anyone from reading the response even if the e-mail is intercepted. All processing is done at the Business School and only aggregate results are reported back to your organisation.

Please note that all questions call for perception-based responses (attitude scale), no confidential figures, data, or descriptive comments are required.

Your participation is voluntary, but we will highly appreciate your cooperation. We trust that your organisation will greatly benefit from this exercise.

For any enquiry, do not hesitate to contact me (details below). Alternatively, contact Prof Chris Brown, the research supervisor, at (021) 918 4230, or at cjb2@belpark.sun.ac.za

Best regards.

**John Morrison**

Tel: (W) 021 913 3508 (Cell) 084 570 0720

jm@sun.ac.za

## Letter to invite nominee to complete the senior manager assessment of project management effectiveness

«email»

«FrmNo»

Dear «Fname»

Thank you for agreeing to participate in this research, which was kindly arranged by «OrgSupport». You are requested to complete the attached questionnaire aimed at giving a senior management evaluation of how well project management functions in **«OrgName»**.

The questionnaire has been designed to make your participation as easy as possible, and requires only clicking of buttons and options. Besides broad classification information, no company figures are required. At completion the questionnaire data is e-mailed also by clicking a button. The total exercise should take no more than 7 minutes of your time. *See box below for instruction details*

This broader survey targets a national sample of project management practicing organisations. In each organisation the survey collects data through the following four scales:

- Scale A : similar as the one you are requested to complete
- Scales B / C: the views of project managers and project team members, respectively, on the functioning of project management in your organisation.
- Scale D: Perceptions about the **culture of the larger organisation** within which project management functions, and from where it draws support and resources.

On completion of the survey, a comprehensive report will be prepared for your organisation, covering your organisation's culture and project management effectiveness and map these against the overall survey findings. This will offer you the opportunity to view your strengths, weaknesses, and other key concerns in relation to industry averages and best practices of project management organisations.

For the survey to be meaningful, an objective, candid response is requested; one that gives the true level of satisfaction with the functioning of project management in «OrgName».

Your organisation's participation and findings are strictly confidential. Similarly, the anonymity of your personal response is ensured. The questionnaire design allows you to respond honestly and critically. All completed questionnaires are directly e-mailed to us. Before it is sent, your visible response is electronically erased. Only an encrypted data file is e-mailed to prevent anyone from reading the response, even if the e-mail is intercepted. All processing is done at the Business School and only aggregate results are reported back to your organisation.

Participation is voluntary, but we will highly appreciate your cooperation. We trust that your organisation will greatly benefit from this exercise.

For any enquiry, do not hesitate to contact me (details below). Alternatively, contact Prof Chris Brown, the research supervisor, at (021) 918 4230, or at cjb2@belpark.sun.ac.za

Best regards.

**John Morrison**

Tel: (W) 021 913 3508 (Cell) 084 570 0720

jm@sun.ac.za

## Letter to invite nominee to complete the project manager assessment of project management effectiveness

«email»

«FrmNo»

Dear «Fname»

**«OrgName»** has agreed, through «OrgSupport», to participate in a research survey of the University of Stellenbosch Business School to study how the ***culture of an organisation impacts on project management***. You have been nominated by your organisation, as part of a group, to complete the attached questionnaire that measures how project managers perceive the functioning of project management in **«OrgName»**. This form functions in combination with other instruments distributed in the organisation to measure the organisation's culture, and other perspectives of project management, respectively.

The questionnaire has been designed to make your participation as easy as possible. All actions and responses to questions are done by simply clicking buttons and options. No confidential figures or comments are required. At completion the questionnaire data is e-mailed also by clicking a button. The total exercise should take no more than 10 minutes of your time. *See box below for instruction details.*

Besides assisting our research, for which we will be greatly thankful, this is an opportunity for you to give frank feedback on a range of key project related practices and issues in the organisation. A comprehensive survey report will be given to your organisation, covering both culture and project management. This will allow executive management to view your organisation's strengths and weaknesses in comparison with industry averages and best practices of project management practicing organisations.

Your organisation's participation and findings are strictly confidential. Similarly, the anonymity of your personal response is protected. Special precautions in the questionnaire design allow you to respond honestly and critically. Your completed response is directly e-mailed to us. Before it is sent, your visible response is electronically erased, and only a file with encrypted data is sent via e-mail to prevent anyone from reading the response even if the e-mail is intercepted. All processing is done at the Business School and only aggregate results are reported back to your organisation.

Your participation is voluntary, but we will highly appreciate your cooperation. We trust that your organisation will greatly benefit from this exercise.

For any enquiry, do not hesitate to contact me (details below). Alternatively, contact Prof Chris Brown, the research supervisor, at (021) 918 4230, or at cjb2@belpark.sun.ac.za

Best regards.

**John Morrison**

Tel: (W) 021 913 3508 (Cell) 084 570 0720

jm@sun.ac.za

## Letter to invite nominee to complete the project team member assessment of project management effectiveness

«email»

«FrmNo»

Dear «Fname»

**«OrgName»**, as kindly arranged by «OrgSupport», has agreed to participate in a research survey of the University of Stellenbosch Business School to assess how the ***culture of an organisation impacts on project management***. You have been nominated by your organisation as part of a group to complete the attached questionnaire that measures how project team members perceive the functioning of project management in **«OrgName»**. This functions alongside other instruments distributed in the organisation to measure the organisation's culture, and more perspectives of project management.

Besides assisting our research, for which we will be greatly thankful, this is an opportunity for you to give frank feedback on certain key project related practices and issues in the organisation. A comprehensive survey report will be given to your organisation, covering both culture and project management. This will allow executive management to view your organisation's strengths and weaknesses in comparison with industry averages and best practices of project management practicing organisations.

The questionnaire has been designed to make your participation as easy as possible. All actions and responses to questions are done by simply clicking buttons and options. There are no tricky comments or figures required. At completion the questionnaire data is e-mailed also by clicking a button. The total exercise should take no more than 5 minutes of your time. *See box below for instruction details.*

Your organisation's participation and findings are strictly confidential. Similarly, the anonymity of your personal response is protected. Special precautions in the questionnaire design allow you to respond honestly and critically. Your completed response is directly e-mailed to us. Before it is sent, your visible response is electronically erased, and only a file with encrypted data is sent via e-mail to prevent anyone from reading the response even if the e-mail is intercepted. All processing is done at the Business School and only aggregate results are reported back to your organisation.

Your participation is voluntary, but we will highly appreciate your cooperation. We trust that your organisation will greatly benefit from this exercise.

For any enquiry, do not hesitate to contact me (details below). Alternatively, contact Prof Chris Brown, the research supervisor, at (021) 918 4230, or at cjb2@belpark.sun.ac.za

Best regards.

**John Morrison**

Tel: (W) 021 913 3508 (Cell) 084 570 0720

jm@sun.ac.za

# APPENDIX N:

# ITEM RELIABILITY COMPUTATIONS FOR THE ORGANIZATIONAL CULTURE QUESTIONNAIRE IN THE FINAL SURVEY

## Overall instrument

Summary for scale: Mean=351.116 Std.Dv.=68.8697 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .973864 Standardized alpha: .976424
Average inter-item corr.: .788480

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Dir | 328.6266 | 3943.255 | 62.79535 | 0.920628 | 0.970665 |
| Ext | 314.8669 | 3712.996 | 60.93436 | 0.853266 | 0.972252 |
| Rat | 329.2283 | 4060.032 | 63.71838 | 0.881474 | 0.972241 |
| Integrd | 325.7557 | 4105.706 | 64.07578 | 0.728750 | 0.974595 |
| Inform | 314.6121 | 3725.424 | 61.03625 | 0.880287 | 0.971239 |
| Delegate | 323.6422 | 3909.546 | 62.52636 | 0.825222 | 0.972322 |
| Support | 319.5561 | 3736.372 | 61.12587 | 0.926184 | 0.969824 |
| Flexible | 320.5029 | 3818.936 | 61.79754 | 0.888437 | 0.970785 |
| People | 325.2304 | 3810.651 | 61.73047 | 0.866732 | 0.971352 |
| Competent | 326.2118 | 4028.197 | 63.46807 | 0.836208 | 0.972551 |
| Systems | 319.6339 | 3784.926 | 61.52176 | 0.908173 | 0.970281 |
| Driven | 314.4052 | 3650.140 | 60.41639 | 0.924841 | 0.970150 |

## 1. Philosophy about people

Summary for scale: Mean=25.8852 Std.Dv.=6.87767 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .908475 Standardized alpha: .907984
Average inter-item corr.: .646342

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| ImportEmp (People) | 21.70470 | 29.15402 | 5.399446 | 0.885064 | 0.870043 |
| Bonds (People) | 21.91591 | 33.42607 | 5.781528 | 0.707505 | 0.897561 |
| LeadSkill (People) | 21.98676 | 33.70314 | 5.805441 | 0.616037 | 0.911126 |
| Cares (People) | 21.26700 | 31.61826 | 5.623012 | 0.846252 | 0.878094 |
| OnlyWork (People) | 21.77197 | 31.13188 | 5.579595 | 0.794567 | 0.884808 |
| WorkCon (People) | 20.77960 | 34.74673 | 5.894636 | 0.640159 | 0.906421 |

## 2. Performance management philosophy

Summary for scale: Mean=36.7105 Std.Dv.=7.91286 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .922453 Standardized alpha: .923394
Average inter-item corr.: .616112

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| ExplStds (Driven) | 31.81766 | 47.45667 | 6.888880 | 0.673793 | 0.917582 |
| Action (Driven) | 31.83263 | 44.57219 | 6.676240 | 0.820703 | 0.905465 |
| PerfRwrd (Driven) | 32.80144 | 49.09551 | 7.006819 | 0.571417 | 0.925547 |
| CnstrAss (Driven) | 31.63305 | 47.92441 | 6.922746 | 0.782292 | 0.909901 |
| RespResult (Driven) | 32.56440 | 48.57918 | 6.969877 | 0.652545 | 0.918878 |
| Progress (Driven) | 31.27747 | 44.84951 | 6.696978 | 0.867924 | 0.901806 |
| NoDrive (Driven) | 32.04441 | 45.39871 | 6.737856 | 0.859277 | 0.902835 |
| DragFeet (Driven) | 33.00243 | 46.50808 | 6.819684 | 0.710422 | 0.914805 |

## 3. Locus of decision-making

Summary for scale: Mean=27.4735 Std.Dv.=6.23646 Valid N:29 (data 2005-08-17.st
Cronbach alpha: .839115 Standardized alpha: .847048
Average inter-item corr.: .451844

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| FreeDecisn (Delegate) | 22.84948 | 28.68961 | 5.356268 | 0.674922 | 0.806724 |
| OpsDecisn (Delegate) | 23.21012 | 27.24373 | 5.219553 | 0.741963 | 0.794657 |
| DelDecisn (Delegate) | 22.91568 | 27.33001 | 5.227811 | 0.504242 | 0.836888 |
| DblCheck (Delegate) | 23.55976 | 29.41965 | 5.423988 | 0.505030 | 0.830169 |
| TimeDecisn (Delegate) | 24.05305 | 27.45118 | 5.239387 | 0.619771 | 0.812599 |
| AuthDecisn (Delegate) | 24.67998 | 30.02259 | 5.479288 | 0.595881 | 0.818559 |
| AuthWork (Delegate) | 23.57295 | 28.14798 | 5.305467 | 0.573510 | 0.820078 |

## 4. People management philosophy

Summary for scale: Mean=31.5595 Std.Dv.=7.13605 Valid N:29 (data 2005-08-17.st
Cronbach alpha: .912619 Standardized alpha: .917670
Average inter-item corr.: .622517

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| EmpInput (Support) | 27.14927 | 33.95155 | 5.826796 | 0.819665 | 0.889926 |
| ConsWide (Support) | 27.49701 | 35.49780 | 5.958003 | 0.836897 | 0.888483 |
| HandsOn (Support) | 27.03621 | 34.62652 | 5.884430 | 0.706543 | 0.905272 |
| SMSupport (Support) | 26.08687 | 39.65683 | 6.297367 | 0.779460 | 0.899909 |
| HideMist (Support) | 26.92294 | 37.08942 | 6.090108 | 0.755029 | 0.897559 |
| ProblSupp (Support) | 26.59169 | 37.43895 | 6.118737 | 0.660499 | 0.907390 |
| WithoutCons (Support) | 28.07313 | 38.28166 | 6.187217 | 0.661752 | 0.906854 |

## 5. Cross-functional integration philosophy

Summary for scale: Mean=25.3599 Std.Dv.=4.90931 Valid N:29 (data 2005-08-17.sta
Cronbach alpha: .880764 Standardized alpha: .879658
Average inter-item corr.: .606145

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| DifDepCall (Integrd) | 19.62290 | 17.48922 | 4.182012 | 0.590051 | 0.882170 |
| WorkTogeth (Integrd) | 20.03676 | 14.79156 | 3.845980 | 0.745000 | 0.847863 |
| Teamwork (Integrd) | 20.12639 | 14.31046 | 3.782917 | 0.777590 | 0.839680 |
| DeptRival (Integrd) | 20.84770 | 14.44024 | 3.800032 | 0.761716 | 0.843788 |
| SinglDept (Integrd) | 20.80601 | 15.65301 | 3.956388 | 0.706962 | 0.857057 |

## 6. Competitiveness philosophy

Summary for scale: Mean=31.5595 Std.Dv.=7.13605 Valid N:29 (data 2005-08-17.st
Cronbach alpha: .912619 Standardized alpha: .917670
Average inter-item corr.: .622517

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| EmpInput (Support) | 27.14927 | 33.95155 | 5.826796 | 0.819665 | 0.889926 |
| ConsWide (Support) | 27.49701 | 35.49780 | 5.958003 | 0.836897 | 0.888483 |
| HandsOn (Support) | 27.03621 | 34.62652 | 5.884430 | 0.706543 | 0.905272 |
| SMSupport (Support) | 26.08687 | 39.65683 | 6.297367 | 0.779460 | 0.899909 |
| HideMist (Support) | 26.92294 | 37.08942 | 6.090108 | 0.755029 | 0.897559 |
| ProblSupp (Support) | 26.59169 | 37.43895 | 6.118737 | 0.660499 | 0.907390 |
| WithoutCons (Support) | 28.07313 | 38.28166 | 6.187217 | 0.661752 | 0.906854 |

## 7. Organizational direction

Summary for scale: Mean=22.4890 Std.Dv.=5.35623 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .900676 Standardized alpha: .904791
Average inter-item corr.: .660672

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| UndStand (Dir) | 17.31081 | 16.16840 | 4.020995 | 0.795640 | 0.872255 |
| ExplGoal (Dir) | 18.00920 | 17.93439 | 4.234901 | 0.795549 | 0.869604 |
| ShareGoal (Dir) | 17.75203 | 19.53928 | 4.420326 | 0.789014 | 0.876176 |
| DeptGoal (Dir) | 18.35614 | 19.87807 | 4.458483 | 0.668955 | 0.896173 |
| CoreMiss (Dir) | 18.52788 | 17.32072 | 4.161818 | 0.761486 | 0.877732 |

## 8. Communication philosophy

Summary for scale: Mean=36.5036 Std.Dv.=7.56514 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .928146 Standardized alpha: .928558
Average inter-item corr.: .632268

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Trust (Inform) | 32.15491 | 42.13165 | 6.490890 | 0.792777 | 0.915656 |
| InfoFeed (Inform) | 31.30968 | 42.33081 | 6.506214 | 0.817831 | 0.913947 |
| FreeIdeas (Inform) | 31.94655 | 41.69726 | 6.457342 | 0.825424 | 0.913099 |
| InfoAccess (Inform) | 31.09436 | 42.69854 | 6.534412 | 0.772556 | 0.917271 |
| BadNews (Inform) | 32.14694 | 43.64497 | 6.606434 | 0.725939 | 0.920772 |
| HoldInfo (Inform) | 32.67457 | 45.84073 | 6.770578 | 0.612788 | 0.928498 |
| FindLate (Inform) | 32.30514 | 42.02216 | 6.482450 | 0.690145 | 0.924828 |
| NotShare (Inform) | 31.89283 | 41.56268 | 6.446912 | 0.804584 | 0.914663 |

## 9. Personal competency philosophy

Summary for scale: Mean=24.9039 Std.Dv.=5.04961 Valid N:29 (data 2005-08-17.st
Cronbach alpha: .876736 Standardized alpha: .882202
Average inter-item corr.: .608621

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| TrainPrty (Competent) | 19.79556 | 17.00107 | 4.123235 | 0.718571 | 0.849344 |
| SkillExp (Competent) | 19.94582 | 13.36141 | 3.655326 | 0.783079 | 0.838830 |
| AdqLearn (Competent) | 19.81908 | 16.99635 | 4.122663 | 0.760999 | 0.841770 |
| PersDev (Competent) | 20.00165 | 17.94676 | 4.236362 | 0.615421 | 0.871100 |
| AddSkills (Competent) | 20.05335 | 15.90379 | 3.987955 | 0.718376 | 0.847758 |

## 10. Process and systems support philosophy

Summary for scale: Mean=31.4817 Std.Dv.=6.82654 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .880700 Standardized alpha: .887130
Average inter-item corr.: .548865

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| StdWork (Systems) | 26.17803 | 31.63844 | 5.624806 | 0.861126 | 0.838521 |
| ImprWork (Systems) | 26.38125 | 32.90636 | 5.736406 | 0.849879 | 0.842965 |
| PartSyst (Systems) | 26.78902 | 36.54011 | 6.044842 | 0.523789 | 0.879930 |
| ExtLearn (Systems) | 27.11828 | 33.35371 | 5.775267 | 0.553521 | 0.881876 |
| OwnSyst (Systems) | 27.21078 | 34.61859 | 5.883757 | 0.573774 | 0.875405 |
| FailSyst (Systems) | 27.50629 | 34.11429 | 5.840744 | 0.746753 | 0.855145 |
| Reinvent (Systems) | 27.70681 | 32.83109 | 5.729842 | 0.642112 | 0.867540 |

## 11. Flexibility philosophy

Summary for scale: Mean=30.6127 Std.Dv.=6.65280 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .852253 Standardized alpha: .853064
Average inter-item corr.: .485298

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| Creative (Flexible) | 25.81182 | 33.66397 | 5.802066 | 0.519176 | 0.844926 |
| RiskTake (Flexible) | 26.26237 | 34.10562 | 5.840002 | 0.523360 | 0.844002 |
| InnovMan (Flexible) | 26.43237 | 29.03803 | 5.388695 | 0.802933 | 0.801275 |
| RuleObey (Flexible) | 26.16467 | 33.32849 | 5.773083 | 0.469251 | 0.854200 |
| Cautious (Flexible) | 26.45555 | 31.74010 | 5.633835 | 0.671932 | 0.823357 |
| EffChange (Flexible) | 25.80973 | 29.27812 | 5.410926 | 0.714829 | 0.815678 |
| EstabPract (Flexible) | 26.73990 | 34.02992 | 5.833517 | 0.625850 | 0.832251 |

## 12. Decision-making rationale

Summary for scale: Mean=21.8873 Std.Dv.=4.52685 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .788729 Standardized alpha: .801314
Average inter-item corr.: .457033

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| TrueFact (Rat) | 17.23477 | 13.04714 | 3.612083 | 0.654112 | 0.721736 |
| FactSolve (Rat) | 16.51978 | 13.98093 | 3.739108 | 0.705654 | 0.720314 |
| PersAgenda (Rat) | 18.53125 | 13.0837 | 3.61714 | 0.571838 | 0.747299 |
| Loyal (Rat) | 18.05869 | 14.58788 | 3.819408 | 0.39197 | 0.804363 |
| Blame (Rat) | 17.20473 | 11.95877 | 3.458145 | 0.584132 | 0.747502 |

# APPENDIX O:

# RELIABILITY COMPUTATIONS FOR THE PROJECT MANAGEMENT EFFECTIVENESS QUESTIONNAIRES USED IN THE FINAL SURVEY

## Overall project management effectiveness measurement

Summary for scale: Mean=333.858 Std.Dv.=46.0600 Valid N:29 (data 2005-08-17.sta)
Cronbach alpha: .915104 Standardized alpha: .917594
Average inter-item corr.: .530692

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| StratBen | 302.7663 | 1659.236 | 40.73373 | 0.636729 | 0.910154 |
| OpTargets | 307.8520 | 1734.781 | 41.65071 | 0.804496 | 0.902939 |
| Integrated | 311.1343 | 1800.311 | 42.43007 | 0.608861 | 0.910685 |
| Support | 296.4027 | 1535.834 | 39.18971 | 0.820386 | 0.899224 |
| Realism | 303.0592 | 1610.745 | 40.13408 | 0.810004 | 0.899690 |
| Systems | 311.2327 | 1592.079 | 39.90086 | 0.843267 | 0.897716 |
| Discipline | 301.6922 | 1599.213 | 39.99016 | 0.737815 | 0.904234 |
| Resources | 303.4020 | 1731.789 | 41.61477 | 0.790290 | 0.903225 |
| Customer | 312.2575 | 1842.742 | 42.92717 | 0.632962 | 0.911113 |
| Communication | 308.8693 | 1928.205 | 43.91133 | 0.290999 | 0.922196 |
| Leadership | 279.9145 | 1744.673 | 41.76928 | 0.519856 | 0.915755 |

## 1. Project management outcomes

Summary for scale: Mean=26.0063 Std.Dv.=4.46925 Valid N:29 (Spreadsheet1)
Cronbach alpha: .932857 Standardized alpha: .936114
Average inter-item corr.: .756860

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 7-TimeObjec (OpTargets) | 21.01777 | 11.32247 | 3.364888 | 0.863677 | 0.911414 |
| 8-CostObjec (OpTargets) | 20.99446 | 11.59546 | 3.405211 | 0.862767 | 0.910354 |
| 9-QualObjec (OpTargets) | 20.63666 | 13.31005 | 3.648294 | 0.845596 | 0.915736 |
| 10-PerfObjec (OpTargets) | 20.75332 | 13.36386 | 3.655661 | 0.747980 | 0.930705 |
| 11-CustSatisf (OpTargets) | 20.62291 | 13.15734 | 3.627305 | 0.830190 | 0.917199 |

## 2. Meeting strategic organizational goals

Summary for scale: Mean=31.0920 Std.Dv.=6.76700 Valid N:29 (Spreadsheet1)
Cronbach alpha: .879538 Standardized alpha: .906313
Average inter-item corr.: .629939

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 1-Speedtask (StratBen) | 26.21158 | 35.26522 | 5.938452 | 0.658260 | 0.867874 |
| 2-MultiTask (StratBen) | 26.05004 | 33.27942 | 5.768831 | 0.794611 | 0.849368 |
| 3-CustSatis (StratBen) | 25.70973 | 34.66500 | 5.887699 | 0.818912 | 0.853786 |
| 4-NonRoutin (StratBen) | 25.29314 | 28.10706 | 5.301609 | 0.823051 | 0.833815 |
| 5-Coordinat (StratBen) | 25.99429 | 28.40900 | 5.330009 | 0.721290 | 0.855530 |
| 6-Stakehold (StratBen) | 26.20119 | 28.93423 | 5.379055 | 0.581364 | 0.892382 |

## 3. Rational decision-making

Summary for scale: Mean=30.7991 Std.Dv.=6.25810 Valid N:29 (Spreadsheet1)
Cronbach alpha: .847432 Standardized alpha: .853933
Average inter-item corr.: .467803

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 25-Homewrk (Realism) | 26.34056 | 27.94333 | 5.286145 | 0.618030 | 0.824435 |
| 26-ObtFacts (Realism) | 25.60542 | 29.89543 | 5.467671 | 0.531153 | 0.836807 |
| 27-Realistic (Realism) | 26.30772 | 28.90616 | 5.376445 | 0.609788 | 0.825842 |
| 28-PostRev (Realism) | 27.65887 | 27.51405 | 5.245384 | 0.566770 | 0.834425 |
| 29-StablePrior (Realism) | 25.99080 | 27.39959 | 5.234461 | 0.739437 | 0.806674 |
| 30-ResourceA (Realism) | 26.92176 | 28.85748 | 5.371916 | 0.500147 | 0.843851 |
| 31-CustSuprt (Realism) | 25.96946 | 28.89730 | 5.375621 | 0.736422 | 0.811847 |

## 4. Effective tools and systems

Summary for scale: Mean=22.6255 Std.Dv.=6.31772 Valid N:29 (Spreadsheet1)
Cronbach alpha: .897698 Standardized alpha: .898243
Average inter-item corr.: .650872

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 32-PMSystem (Systems) | 17.96921 | 22.93707 | 4.789266 | 0.770347 | 0.873012 |
| 33-AdmInfo (Systems) | 17.76560 | 28.04376 | 5.295636 | 0.695167 | 0.887964 |
| 34-EstAcc'y (Systems) | 17.95140 | 28.19880 | 5.310255 | 0.641616 | 0.896952 |
| 35-InfoAcc'y (Systems) | 18.73785 | 22.21596 | 4.713381 | 0.893438 | 0.839856 |
| 36-SystemEff (Systems) | 18.07808 | 25.07758 | 5.007751 | 0.769294 | 0.870340 |

## 5. Application of methodology

Summary for scale: Mean=32.1661 Std.Dv.=6.94336 Valid N:29 (Spreadsheet1
Cronbach alpha: .861609 Standardized alpha: .856838
Average inter-item corr.: .478436

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 37-EffScope (Discipline) | 27.07011 | 41.21467 | 6.419865 | 0.308146 | 0.878499 |
| 38-PStartup (Discipline) | 28.03662 | 34.23273 | 5.850874 | 0.674166 | 0.835833 |
| 39-Understand (Discipline) | 27.96502 | 34.00609 | 5.831474 | 0.706815 | 0.831288 |
| 40-PControl (Discipline) | 26.98719 | 34.41319 | 5.866276 | 0.694117 | 0.833321 |
| 41-RiskIdent (Discipline) | 28.07184 | 34.20523 | 5.848524 | 0.656322 | 0.838374 |
| 42-RiskMan (Discipline) | 27.49261 | 33.73243 | 5.807962 | 0.682412 | 0.834510 |
| 43-ScopeCtrl (Discipline) | 27.37315 | 33.10626 | 5.753804 | 0.675506 | 0.835706 |

## 6. Effective project leadership

Summary for scale: Mean=53.9437 Std.Dv.=6.23674 Valid N:29 (data 2005-08
Cronbach alpha: .809792 Standardized alpha: .813021
Average inter-item corr.: .297022

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 54-AuthRes (Leadership) | 49.43373 | 29.92817 | 5.470665 | 0.383194 | 0.813042 |
| 55-Deadlines (Leadership) | 48.58851 | 34.64914 | 5.886352 | 0.305412 | 0.808203 |
| 56-PMSelect (Leadership) | 49.21557 | 32.12870 | 5.668218 | 0.476450 | 0.794389 |
| 57-PMSkills (Leadership) | 49.50065 | 29.90045 | 5.468130 | 0.586769 | 0.782207 |
| 58-Decisionm (Leadership) | 49.46448 | 29.60532 | 5.441077 | 0.684960 | 0.772869 |
| 59-GoalDefin (Leadership) | 48.94266 | 33.22647 | 5.764240 | 0.348752 | 0.805844 |
| 60-Inspiration (Leadership) | 49.25464 | 30.51701 | 5.524220 | 0.612745 | 0.780898 |
| 61-Accountab (Leadership) | 48.48989 | 32.92478 | 5.738012 | 0.491714 | 0.794578 |
| 62-TMroles (Leadership) | 48.88050 | 34.44736 | 5.869187 | 0.235425 | 0.815279 |
| 63-Participate (Leadership) | 49.01609 | 31.41496 | 5.604905 | 0.467095 | 0.795113 |
| 64-Commitm (Leadership) | 48.65071 | 29.16664 | 5.400615 | 0.681229 | 0.772005 |

## 7. Effective project communication

Summary for scale: Mean=24.9890 Std.Dv.=4.12945 Valid N:29 (data 200
Cronbach alpha: .849522 Standardized alpha: .852443
Average inter-item corr.: .548236

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 65-FreeCom (Communication) | 19.41972 | 10.22779 | 3.198092 | 0.735473 | 0.797310 |
| 66-ComPlan (Communication) | 20.21246 | 10.87062 | 3.297062 | 0.661582 | 0.818021 |
| 67-RChannel (Communication) | 19.90439 | 11.76053 | 3.429363 | 0.679646 | 0.817791 |
| 68-ProgInfo (Communication) | 20.48549 | 10.74106 | 3.277355 | 0.637456 | 0.825207 |
| 69-ProblRep (Communication) | 19.93392 | 11.06785 | 3.326838 | 0.603578 | 0.833895 |

## 8. Adequacy of resources

Summary for scale: Mean=30.4562 Std.Dv.=4.58426 Valid N:29 (Spreadsheet1
Cronbach alpha: .793216 Standardized alpha: .802330
Average inter-item corr.: .415855

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 44-StaffComp (Resources) | 24.93506 | 15.74404 | 3.967876 | 0.429715 | 0.787333 |
| 45-SpplierEff (Resources) | 25.47274 | 14.14616 | 3.761138 | 0.531106 | 0.766496 |
| 46-PMskills (Resources) | 25.72635 | 13.61231 | 3.689486 | 0.641293 | 0.737247 |
| 47-Independ (Resources) | 25.30821 | 16.11102 | 4.013854 | 0.616260 | 0.758310 |
| 48-NoRework (Resources) | 25.63218 | 13.91930 | 3.730857 | 0.624324 | 0.742038 |
| 49-TeamCoop (Resources) | 25.20665 | 14.50842 | 3.808992 | 0.496748 | 0.774864 |

## 9. Customer integrated in the process

Summary for scale: Mean=21.6007 Std.Dv.=3.61459 Valid N:29 (Spreadsheet1)
Cronbach alpha: .779910 Standardized alpha: .793516
Average inter-item corr.: .496175

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 50-Discussion (Customer) | 16.20156 | 6.769872 | 2.601898 | 0.572961 | 0.743389 |
| 51-CustRepr (Customer) | 16.45033 | 6.424679 | 2.534695 | 0.670313 | 0.680487 |
| 52-CRelation (Customer) | 15.98194 | 9.995913 | 3.161631 | 0.495422 | 0.784865 |
| 53-CIntegrate (Customer) | 16.16839 | 7.275054 | 2.697231 | 0.692091 | 0.671660 |

## 10. Supportive organization

Summary for scale: Mean=37.4556 Std.Dv.=7.29799 Valid N:29 (Spreadsheet1)
Cronbach alpha: .839725 Standardized alpha: .839514
Average inter-item corr.: .415926

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 17-PosClimate (Support) | 32.00624 | 43.55657 | 6.599740 | 0.475123 | 0.832074 |
| 18-TopMUnd (Support) | 32.58834 | 37.83621 | 6.151114 | 0.675732 | 0.806445 |
| 19-TrainProv (Support) | 33.00550 | 43.96035 | 6.630260 | 0.300501 | 0.855877 |
| 20-PMAuthor (Support) | 32.76166 | 39.93917 | 6.319744 | 0.565365 | 0.821595 |
| 21-TopMSup (Support) | 32.44786 | 43.64322 | 6.606301 | 0.374112 | 0.844175 |
| 22-RelyOrg (Support) | 32.83440 | 36.38979 | 6.032395 | 0.819947 | 0.786822 |
| 23-DConflict (Support) | 33.30041 | 39.62494 | 6.294834 | 0.682778 | 0.807755 |
| 24-OrgShare (Support) | 33.24466 | 37.23440 | 6.102000 | 0.715546 | 0.800736 |

## 11. Integration into organization

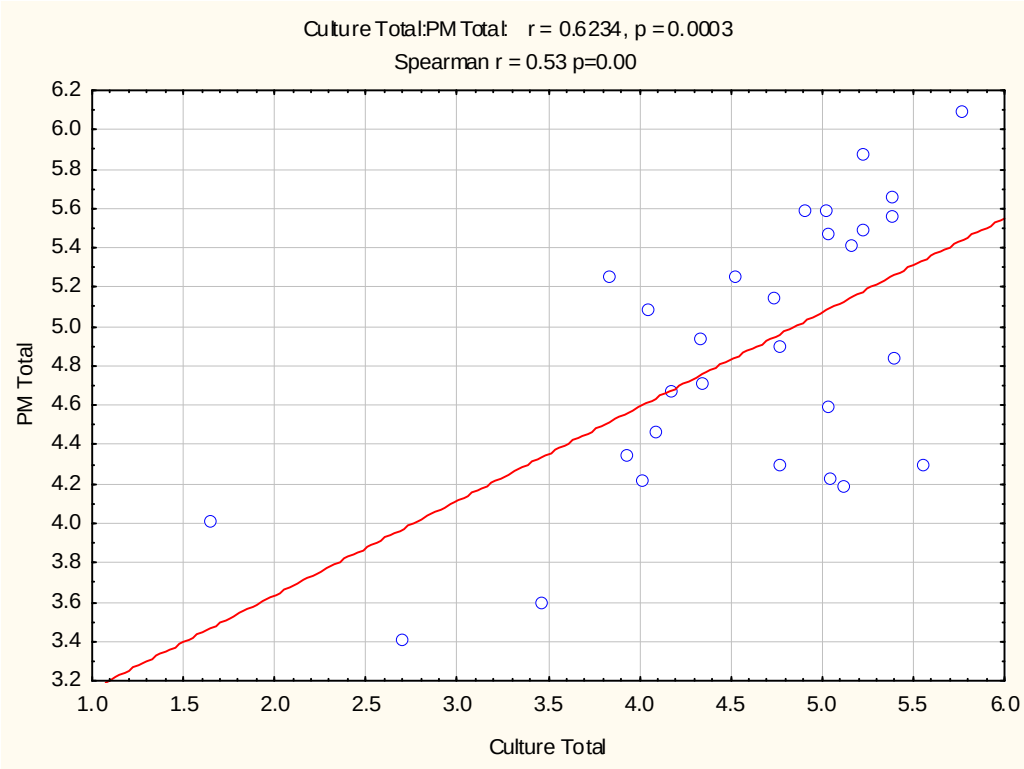
Summary for scale: Mean=22.7240 Std.Dv.=4.50071 Valid N:29 (Spreadsheet1
Cronbach alpha: .825193 Standardized alpha: .833312
Average inter-item corr.: .504973

| variable | Mean if deleted | Var. if deleted | StDv. if deleted | Itm-Totl Correl. | Alpha if deleted |
|---|---|---|---|---|---|
| 12-Integrated (Integrated) | 17.96505 | 14.03903 | 3.746870 | 0.647925 | 0.787891 |
| 13-PosAtude (Integrated) | 17.82541 | 13.47900 | 3.671376 | 0.669520 | 0.779465 |
| 14-Recognise (Integrated) | 18.12172 | 14.17122 | 3.764468 | 0.562523 | 0.806662 |
| 15-CareerPros (Integrated) | 18.48927 | 11.96171 | 3.458571 | 0.621396 | 0.794353 |
| 16-RoleDist (Integrated) | 18.49441 | 11.66927 | 3.416031 | 0.653993 | 0.783595 |

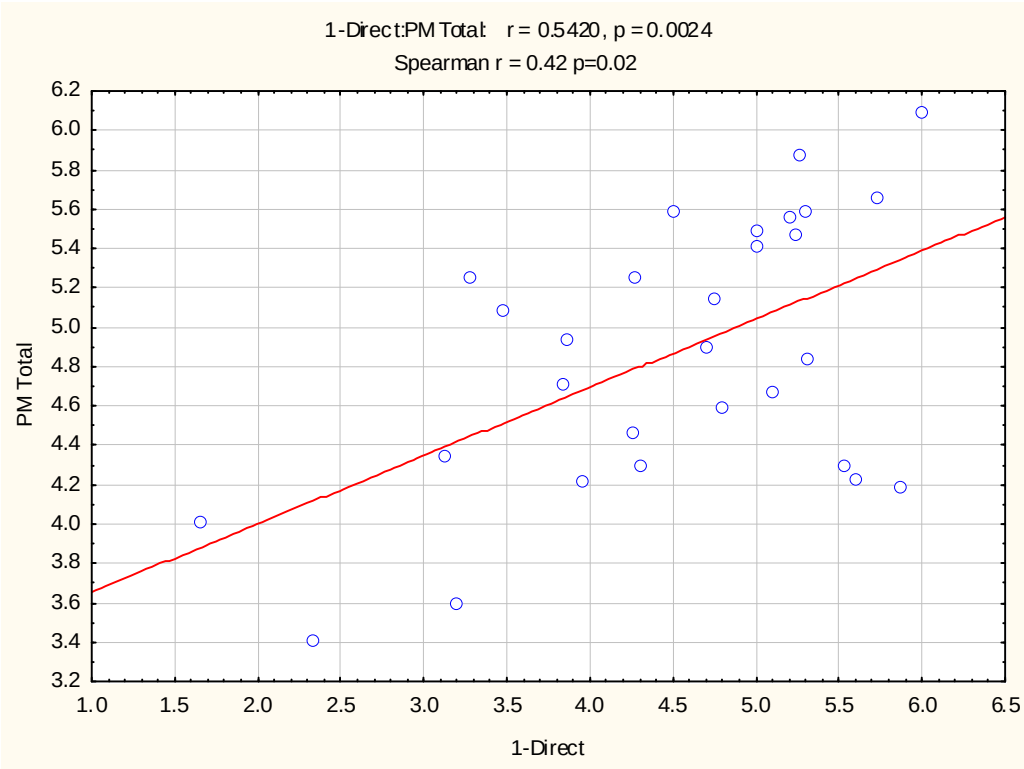
# APPENDIX P:

# RESULTS OF CORRELATION TESTS PERFFORMED TO TEST RESEARCH HYPOTHESES

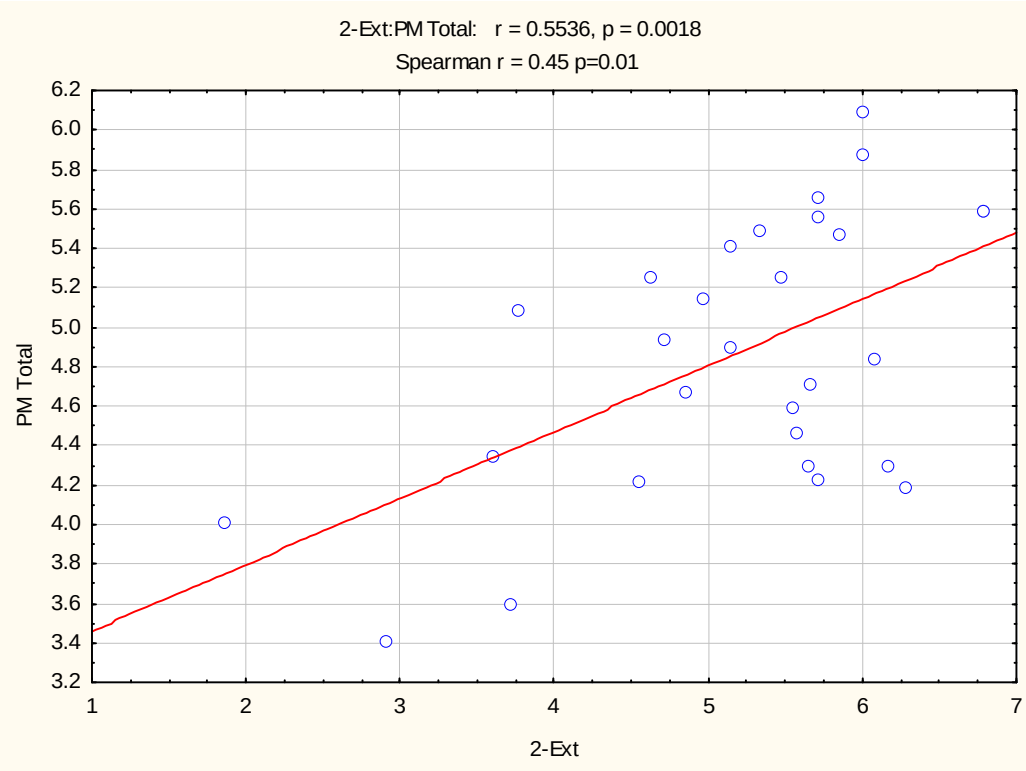
## Total culture score versus total project management effectiveness score



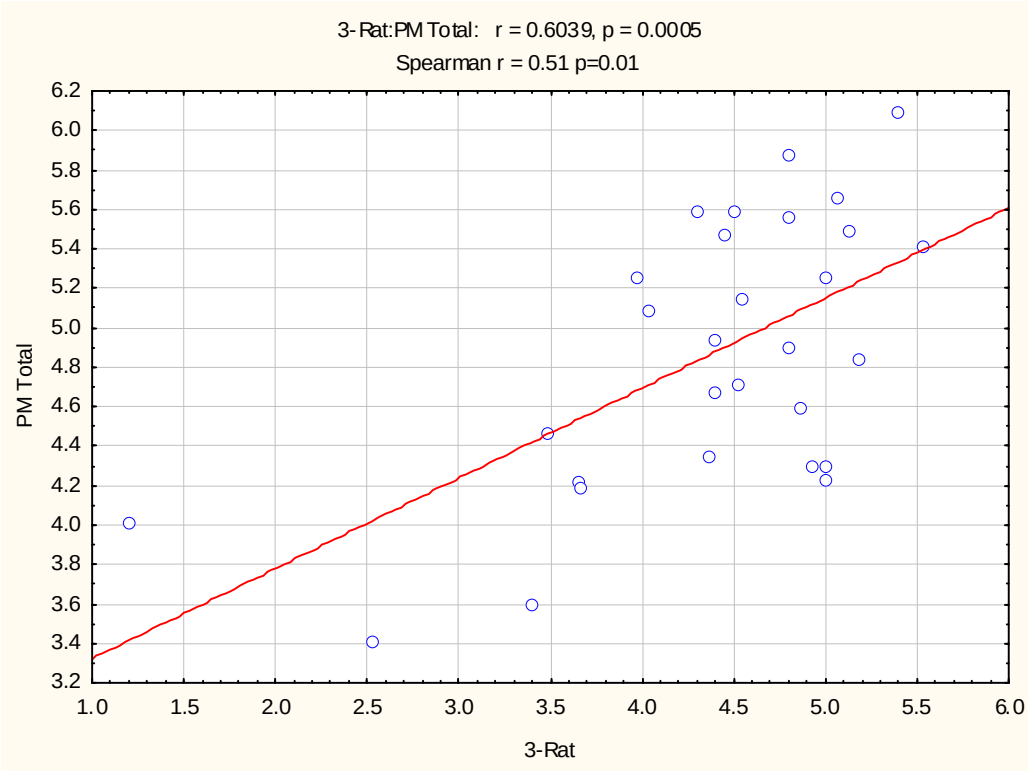

## Organization direction score versus total project management effectiveness score



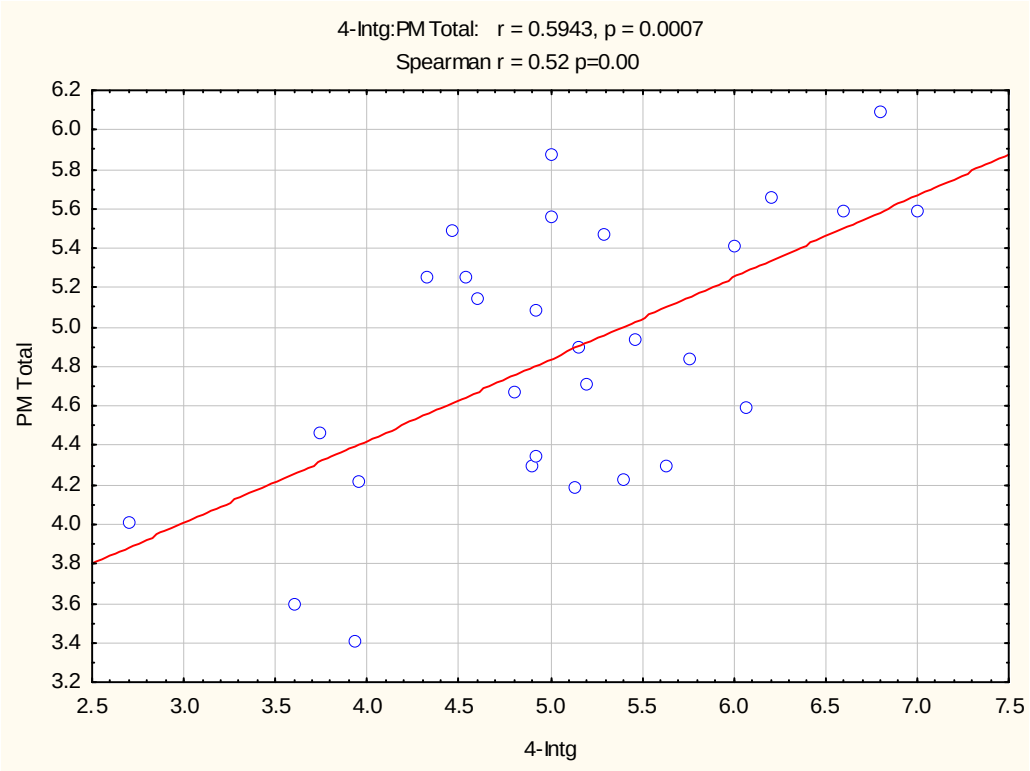
## Competitiveness orientation score versus total project management effectiveness score



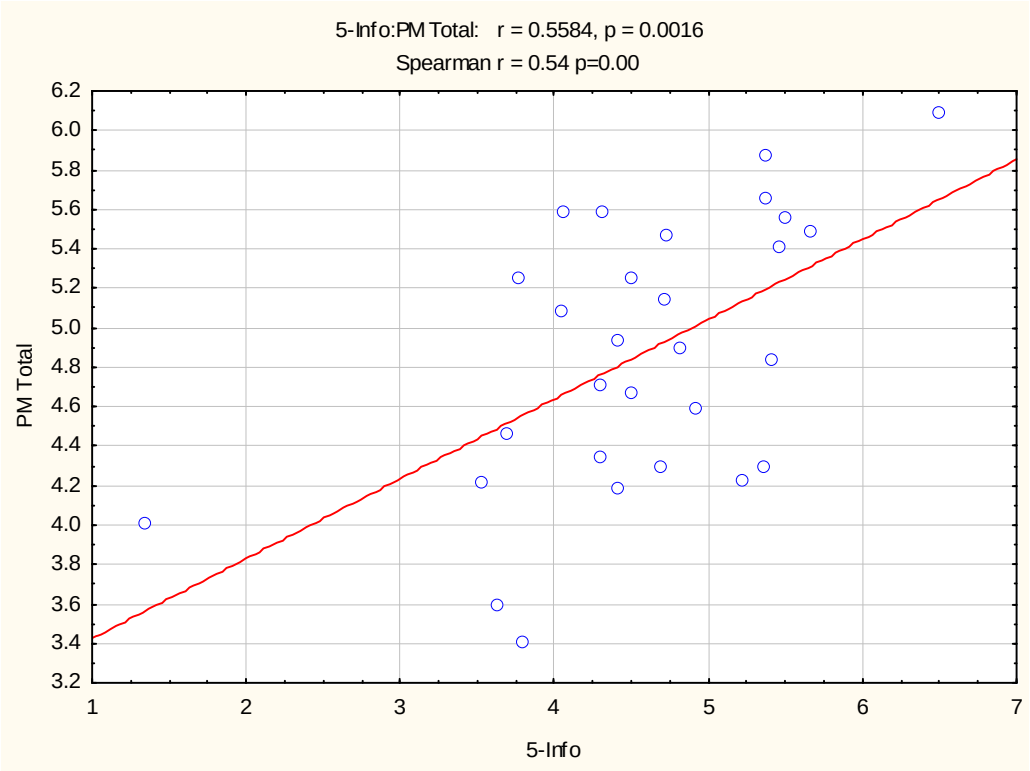

## Decision-making rationale score versus total project management effectiveness score



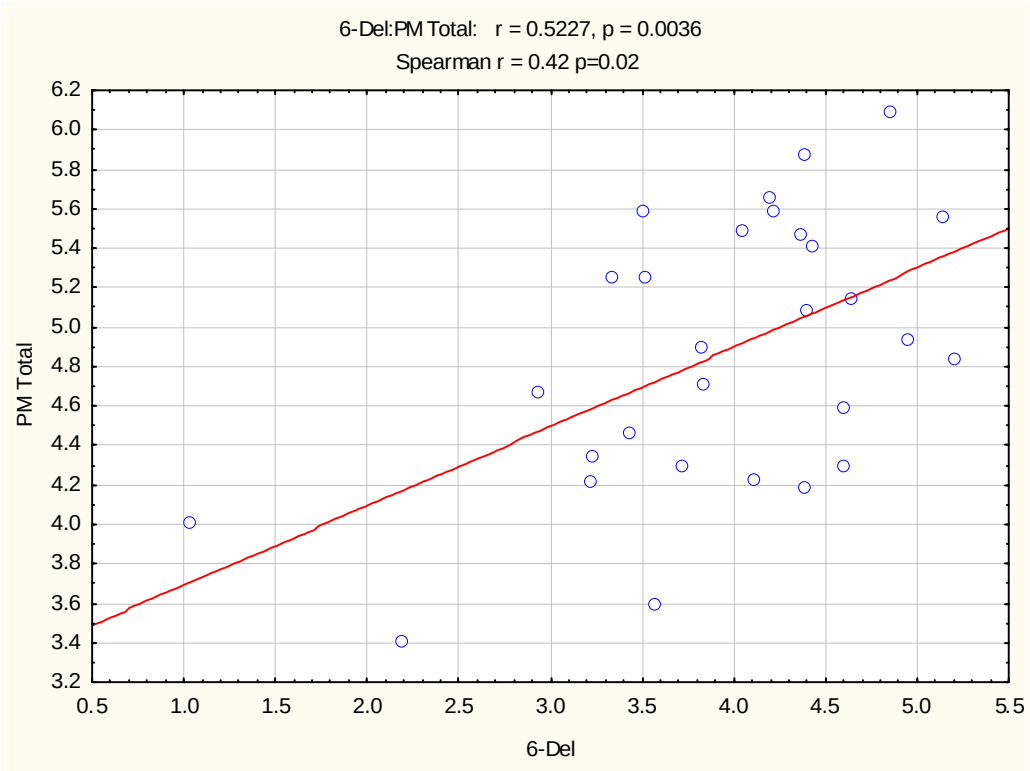
## Cross-functional integration score versus total project management effectiveness score



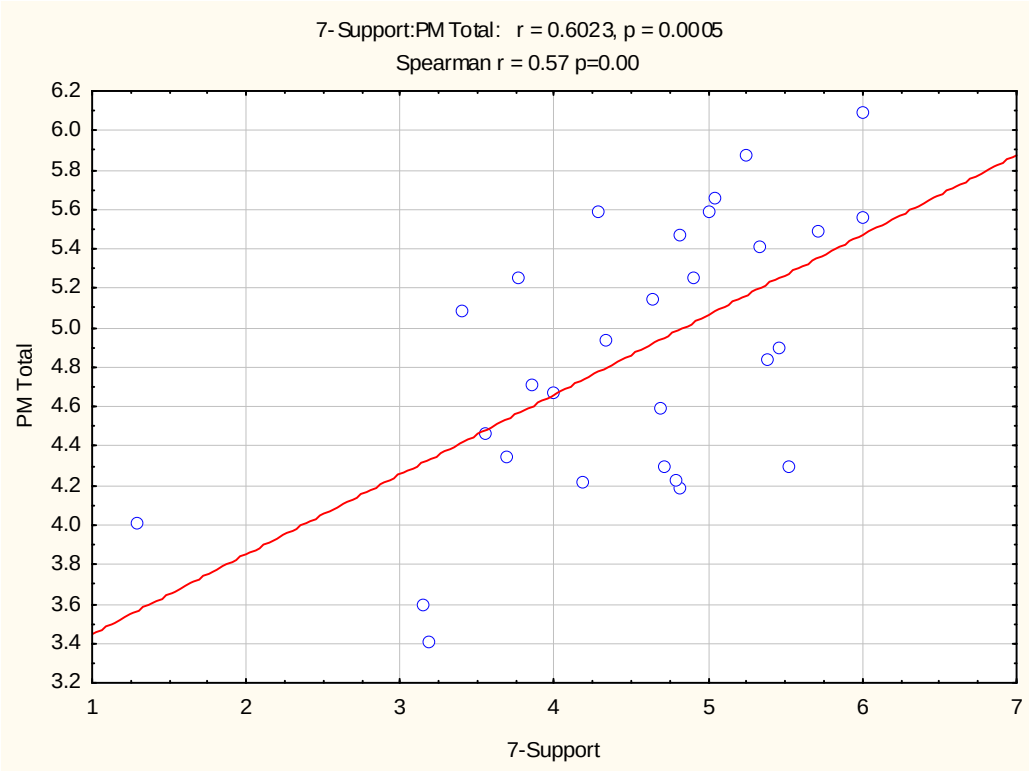

## Communication philosophy score versus total project management effectiveness score



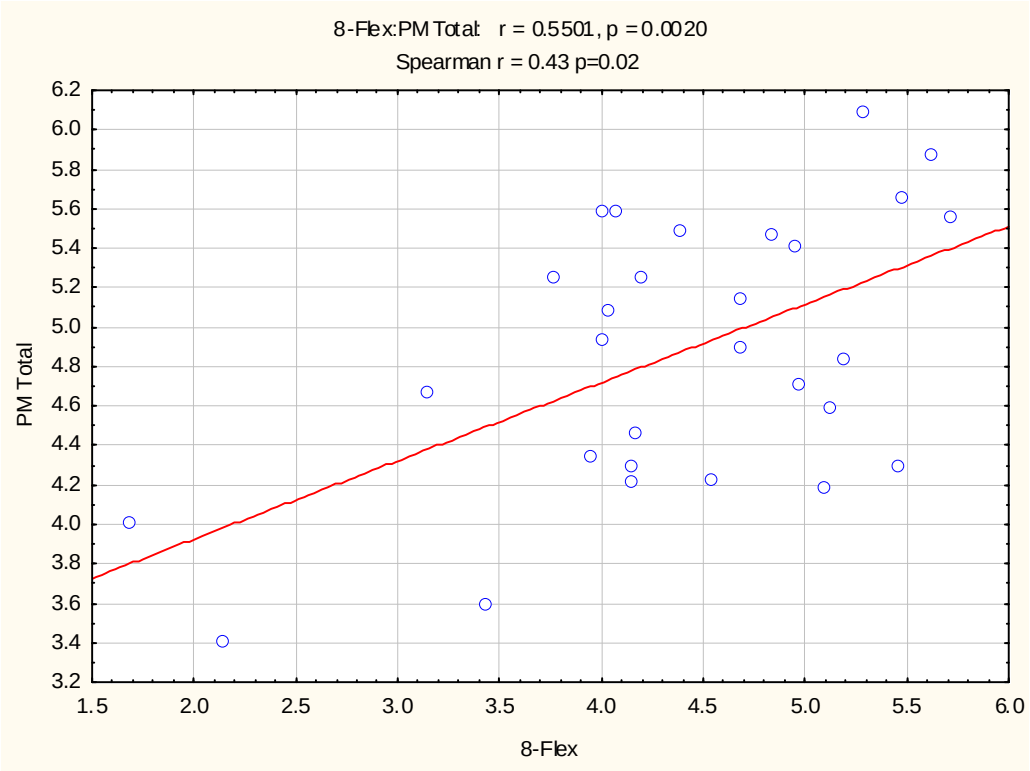
## Locus of decision-making score versus total project management effectiveness score



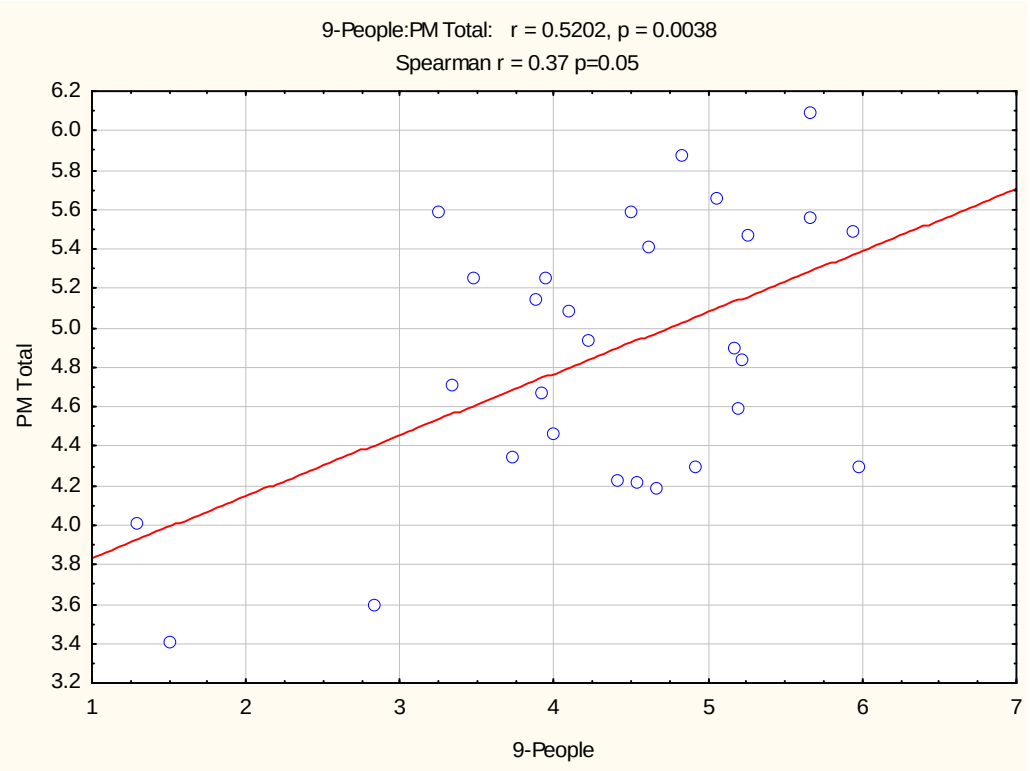

## People management orientation score versus total project management effectiveness score



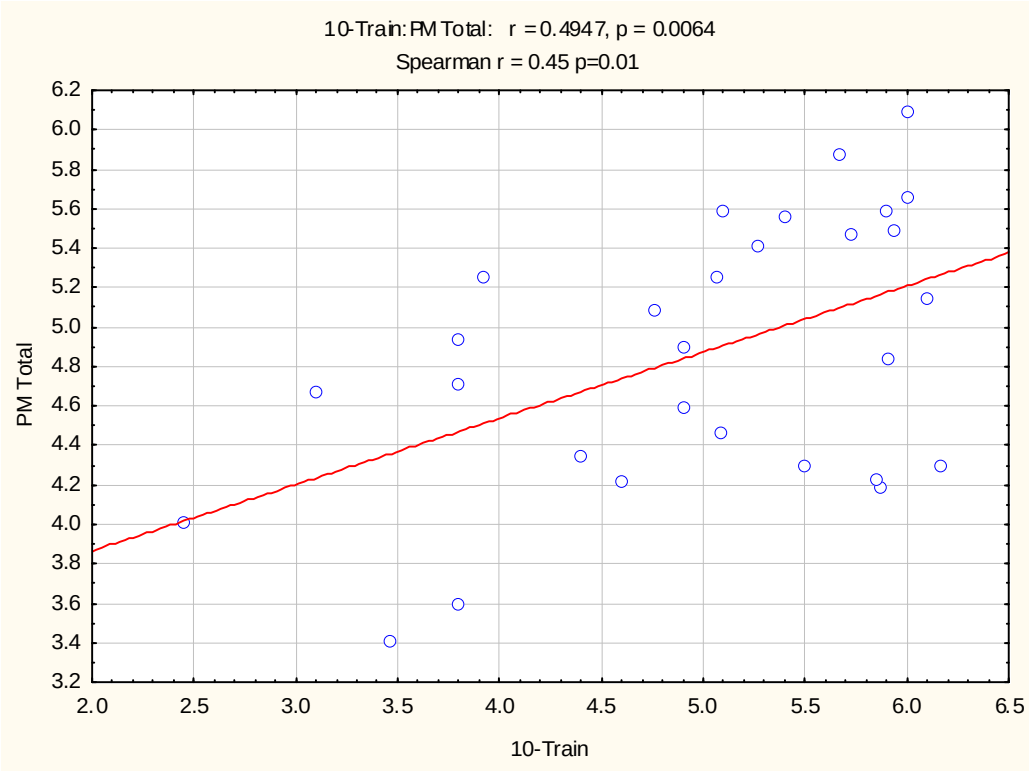
## Flexibility orientation score versus total project management effectiveness score



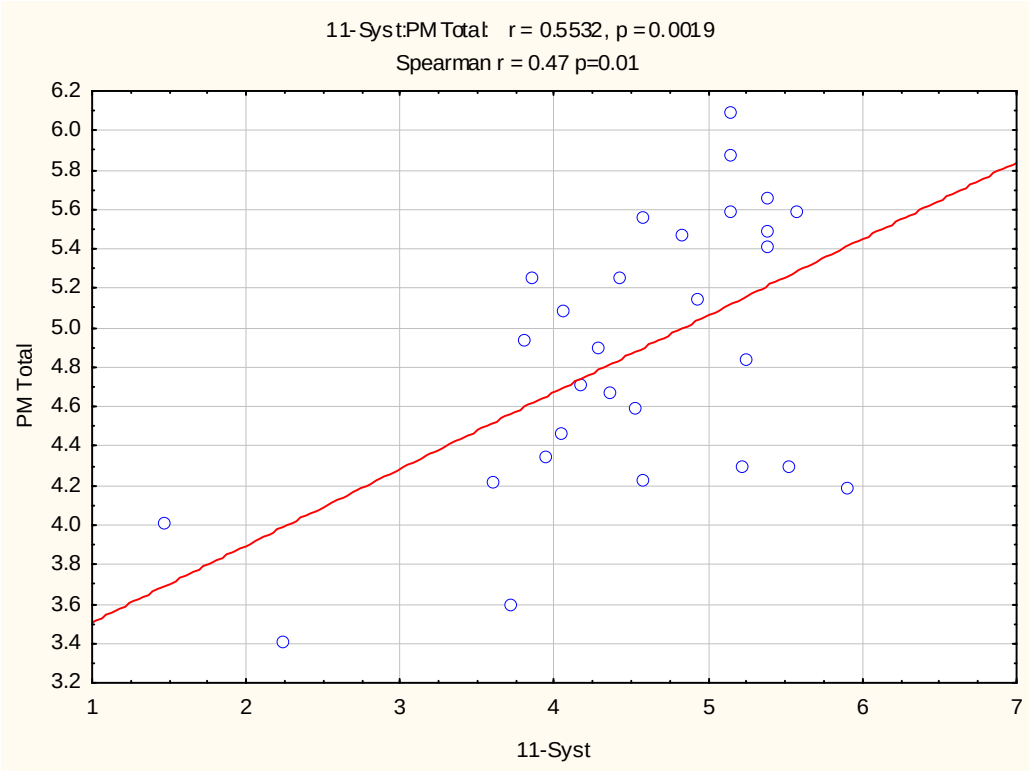

## Philosophy about people score versus total project management effectiveness score



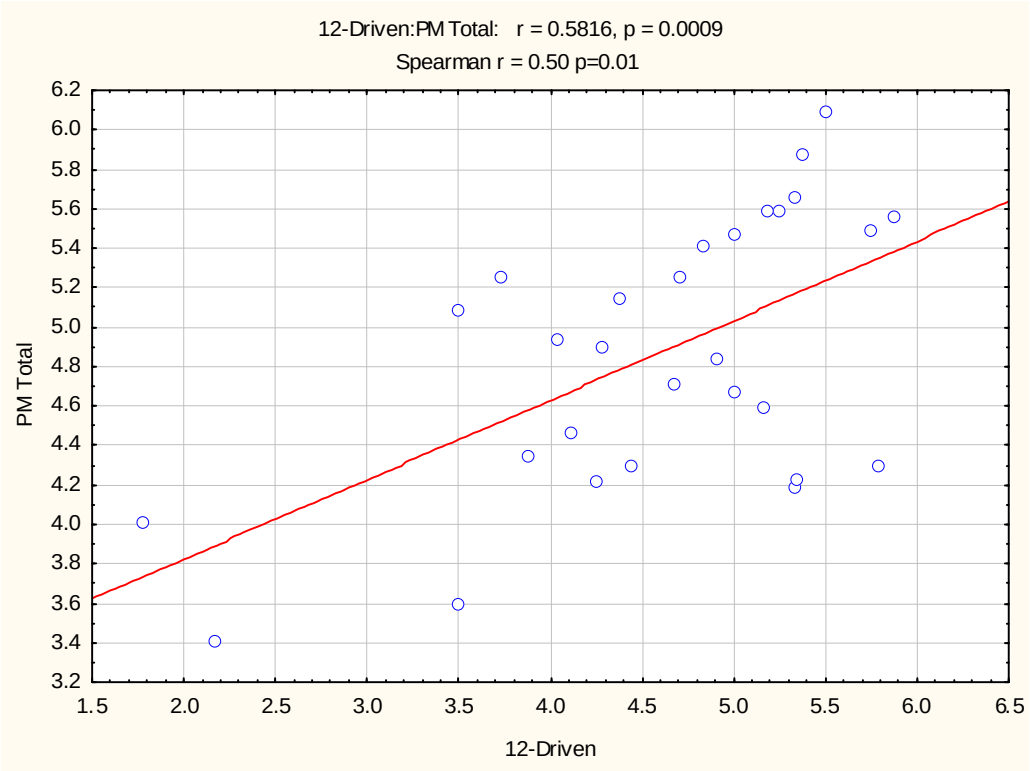
## Personal competency orientation score versus total project management effectiveness score




## Process and systems support score versus total project management effectiveness score



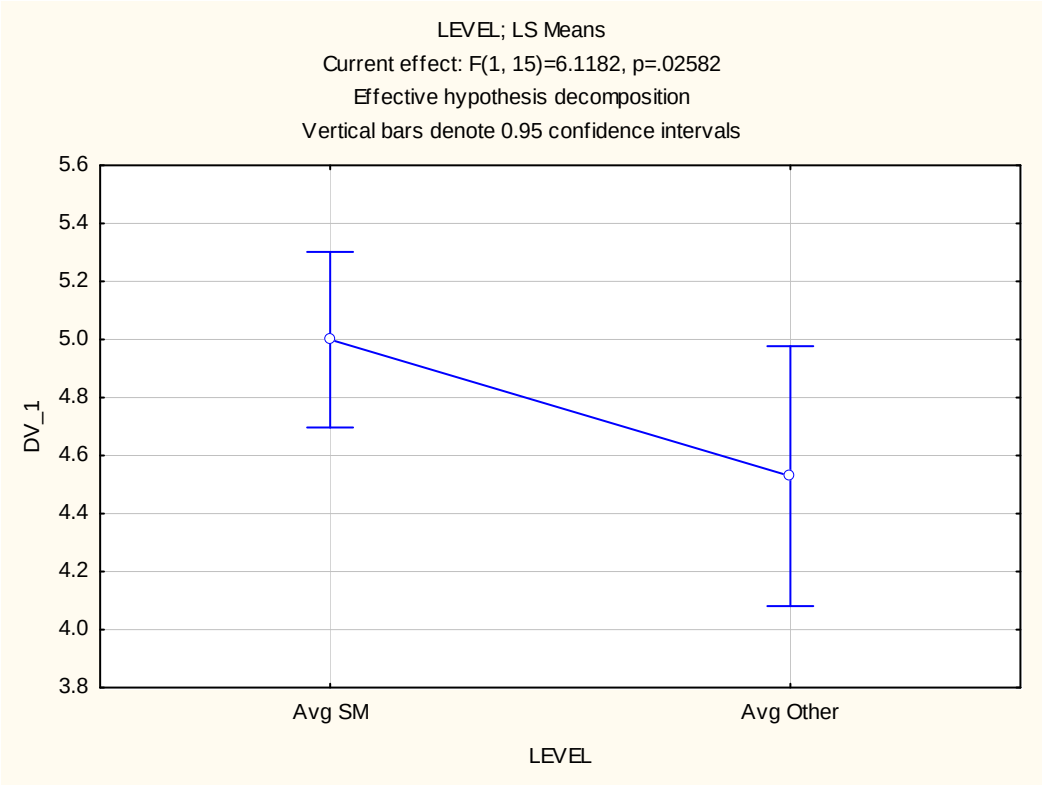
**Performance management orientation score versus total project management effectiveness score**



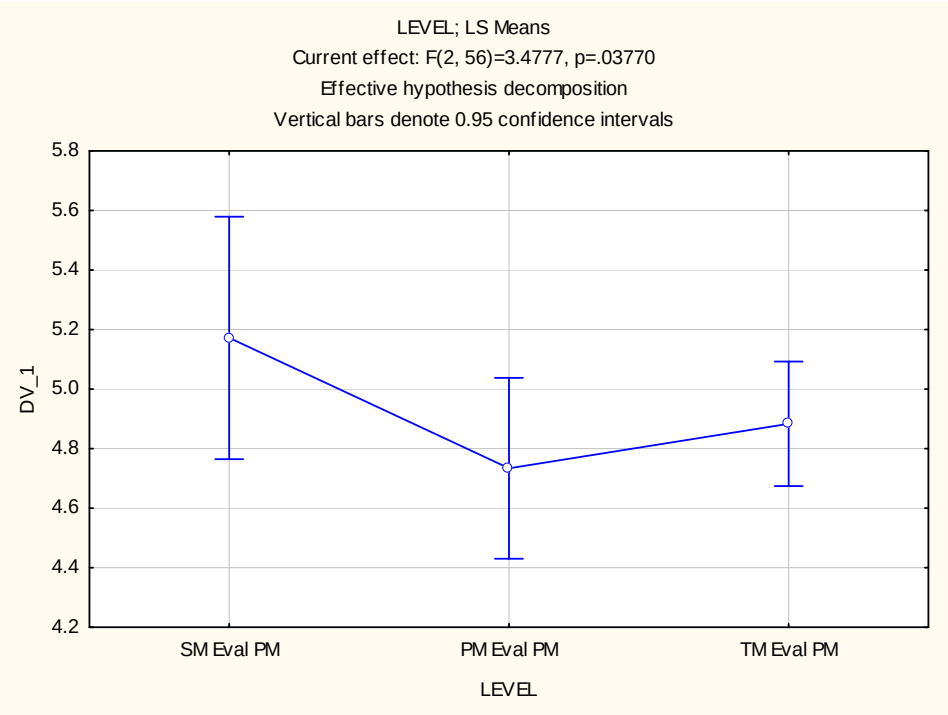
# APPENDIX Q:

# COMPARISON BETWEEN THE RESPONSES OF SENIOR MANAGEMENT AND LOWER LEVELS

**Culture questionnaire – senior management effect**



**Project management effectiveness questionnaires – senior management effect**




Bonferroni test; variable DV_1 (Spreadsheet166)
Probabilities for Post Hoc Tests
Error: Within MS = .41328, df = 56.000

| Cell No. | LEVEL | {1} 5.1721 | {2} 4.7341 | {3} 4.8834 |
|---|---|---|---|---|
| 1 | SM Eval PM | | 0.036261 | 0.278662 |
| 2 | PM Eval PM | 0.036261 | | 1.000000 |
| 3 | TM Eval PM | 0.278662 | 1.000000 | |