

**School of Accounting
Curtin Business School**

**Multiple Performance Measures Use and Job-related Tension in the
Indonesian Higher Education Sector: The Effect of Leadership
Orientations Use and Organizational Culture**

Yuningsih

**This thesis is presented for the Degree of
Doctor of Philosophy
of
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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

A handwritten signature in black ink, consisting of several stylized, overlapping strokes.

Signature:

Date: 29/05/2012

Abstract

Research has confirmed the benefits of using multiple performance measures. In the education sector, the use of appropriate multiple performance measures is considered to be one of the most important, challenging and controversial issues (Shao et al., 2007). However, accounting studies in this area have focused on business organizations, providing little attention to the educational sector. Furthermore, most of these studies have focused on how the use of multiple performance measures affects managers in making performance evaluation judgments, while only a few studies have investigated the effect of the use of multiple performance measures from the subordinates' perspectives. The purpose of this study was to look at the behavioral responses of Heads of departments (i.e. as subordinates) to multiple performance measures used by their Deans. Job-related tension was used in this study to indicate the Heads' responses to the use of multiple performance measures.

Research has emphasized the important roles of leadership orientations and organizational culture in explaining both the implementation of performance measurement and subordinates' job-related tension. Thus, this study also attempted to identify whether the relationship between multiple performance measures use and job-related tension was moderated by leadership orientations use and organizational culture.

The data were collected by questionnaires completed by Heads of academic departments in Indonesian private universities. Multiple linear regression was used to test the hypotheses established in this study. Further analyses were performed to explain the nature of the significant two-way interaction.

This study found multiple performance measures use to be significantly negatively correlated with job related tension dimensions. When leadership orientations use was high, a two-way interaction effect was found for the interaction between multiple performance measures use and leadership orientations use on the job-related tension dimension of work overload. The three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture was found only for one job-related tension dimension, namely ambiguity concerning performance. However, this three-way interaction effect was significant only at a moderate level.

The findings of this study have implications for the development of performance evaluation systems and personnel management, specifically in the area of performance measurement and leadership, for the higher education sector. This study has shown that higher education leaders should develop and use performance measures that capture a complete picture of their organizational performance. Added to that, the application of various leadership orientations is crucial, which highlights the importance of any related leadership training or leadership development programs for educational leaders.

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Chapter 1

1. Introduction

This chapter explains the significance of research in the area of multiple performance measures use and the aims and motivation for this study. It also outlines how this thesis is structured.

1.2 Motivation of the Study

Current research in management accounting has focused on the impact multiple performance measures have on individual and organizational outcomes. Researchers have found that the use of multiple performance measures leads to greater performance (Van der Stede et al., 2006; Ittner et al., 2003b; Hoque and James, 2000; Scott and Tiessen, 1999). Prior studies have investigated the impact of the use of multiple performance measures from the perspective of the evaluators (e.g. Lipe and Salterio, 2000, 2002; Farrel, 2002; Ittner et al., 2003a; Moers, 2005; Dilla and Steinbart, 2005); however, only a few have been done from the perspective of the subordinates (Patelli, 2007; Hall, 2008; Cheng et al., 2007). Examples include studies that have examined the impact of multiple performance measures use on subordinates' job-related tension dimensions such as role conflict, role ambiguity (Patelli, 2007), and role clarity (Hall, 2008) (for review see Patelli, 2007, p.9). However, there are inconsistent findings for the relationship. For example, Hall (2008) found that the use of multiple performance measures increased role clarity and, thus, can be expected to reduce job-related tension. Meanwhile, Burney and Widener (2007) found that job-related tension (i.e. role conflict) was reduced only when a smaller number of performance measures were used.

Besides multiple performance measures, leadership orientations and organizational culture are also recognized to be important factors for explaining job-related tension. The use of certain leadership orientations has been found to lead to lower levels of job-related tension/job stress (Gill et al., 2006; Erkutlu and Chafra, 2006; Chen and Silverthorne, 2005; Safaria et al., 2011). Meanwhile, the ability of organizational culture to increase (decrease) job-related tension has also been proven (Pool, 2000; Zeffane and McLoughlin, 2006; Shih and Chen, 2006).

The important roles leadership style and organizational culture play have also been highlighted in the performance measurement literature (Bititci et al., 2006; Henri, 2006). Bititci et al. (2006), in their case studies, found that organizational culture and management (leadership) style had an impact on how performance measurement systems were implemented and used. In relation to the frequency of use of multiple performance measures, Henri (2006) found that senior managers of organizations dominated by a flexible culture tend to use more performance measures than senior managers of organizations dominated by a control culture. Rhodes et al. (2008) suggested that differences in the success of implementing multiple performance measures could be explained by a variety of divergent factors, including leadership style and organizational culture. However, there have been little attempts made by prior researchers to explain the success of the use of multiple performance measures, including in reducing job-related tension, from the interaction between leadership orientations, organizational culture, and the use of multiple performance measures. This is highlighted by Kahn and Byosiere (1992) who identified that research in job-related tension has not focused on the role of organizational and interpersonal factors in moderating job-related tension. This study aims to extend the literature by examining the impact of that interaction, especially in reducing subordinates' job related tension.

The impact of the use of multiple performance measures has mainly been examined in developed countries and focused on business organizations (Hall, 2008, 2011; Burner and Widener, 2007; Sholihin et al., 2010). Studies in this area, which have been done in developing countries, have investigated the degree to which multiple performance

measures are used and the effectiveness of its implementation (Khan et al., 2011; Ong and Teh, 2009). Similarly, most job-related tension studies have also been conducted in developed countries and have focused on industrial organization (e.g. Gill et al., 2006; Joiner and Bartram, 2004; Pool, 2000; Murphy, 1995; Varca, 1999). However, only a few studies have investigated job-related tension in developing countries (e.g. Idris et al., 2010; Jamal, 2008; Shih and Chen, 2006). The above gaps in both the performance measurement and job-related tension literatures provide further motivation to extend the knowledge in those areas, particularly on how multiple performance measures use will affect subordinates' job-related tension in different contexts, namely higher education institutions within a developing country (i.e. Indonesia).

Higher education institutions need to adapt their mission to changes in the environment, such as economic and social development, in order to survive (Tapinos et al., 2005). As such, multiple performance measures use plays an important role in support of the achievement of the adapted goals/mission by the members of the institutions. Meanwhile, job-related tension dimensions such as role conflict, role ambiguity, and work overload are found to be generally experienced by university staff/managers/leaders (Gillespie et al., 2001; Gmelch and Burns, 1994). Despite the fact that Heads of departments are among those who showed the highest level of distress (Winefield and Jarrett, 2001), limited research in higher education has focused on the job stress of Heads of departments (Sarros et al., 1997; Gmelch and Burns 1994; Sotirakou, 2004). Generally, earlier studies have focused on university academics and/or general staff (e.g. Bradley and Eachus, 1995; Kinman, 2001; Gillespie et al., 2001). Heads of departments have important roles in the decision making process in higher education (Moomaw et al., 1977 cited in Kurz et al., 1989) and their behaviors (including their job stress) will have important implications for the success of the higher education institutions and individuals who deal regularly and directly with them (Sarros et al., 1997). Given the importance of multiple performance measures use in the higher education sector, the widespread job stress in that sector, and the significant roles of Heads of departments, this study will focus on how the interaction between multiple performance measures use and the moderators (i.e. leadership orientations use and organizational culture) affect Heads' of departments job-related tension.

The significant roles of Heads of departments also indicate the importance of the assessment of their performance using multiple performance measures. However, most of the previous studies investigating the use of multiple performance measures in the higher education sector have been conducted within a university context (Al Turki and Duffuaa, 2003; Szeto and Wright, 2003; Üçtuğ and Köksal, 2003; Tapinos et al., 2005; Chen et al., 2006) using limited criteria (e.g. research and/or teaching) and archival or qualitative methods (Modell 2003). Thus, there is a need to create a valid instrument to facilitate the assessment of performance, especially Heads' of departments performance.

The Indonesian higher education sector was chosen to be studied because Indonesian higher education institutions have been dealing with environmental and global problems that can be solved through improvements in various factors, for example, organizational factors such as performance evaluation, leadership, and organizational culture (DGHE, 2003; Tadjudin, 2005). In the Indonesian Directorate General of Higher Education (DGHE) publication, the “*Basic Framework for Higher Education Development/KPPTJP IV, 2003-2010*”, it was stated that due to globalization, there has been a shift in the role of higher education institutions from traditional learning institutions to knowledge creators, a movement from a comparative to a competitive approach, and a need for continuous quality improvement (DGHE, 2003). Indonesian higher education institutions face the problem of having insufficient quality academics and are under-funded compared to other developing countries in Asia (DGHE, 2003). Furthermore, due to the economic crisis, competition among Indonesian higher education institutions (both public and private) is increasing sharply mainly in the recruitment of new students (Republika, 2009) and attainment of governmental competitive-based funding (Tempo, 2007). The DGHE suggested that to adapt to such complex and difficult situations, it is crucial for Indonesian higher education institutions to have internal quality assurance mechanisms such as self-evaluation, leadership development, and cultural change (DGHE, 2003). It can be inferred that effective performance measurement and leadership and supportive organizational culture are important issues needed to be addressed by Indonesian higher education institutions. This study will provide important information to help address the issues as

it aims to explain how the use of multiple performance measures can be effective, especially in reducing job-related tension (i.e. a factor that has been found to lead to better job-related outcomes), by examining the roles of other important organizational factors, namely leadership orientations use and organizational culture.

1.3 Objectives of the Study

Based on the motivation of the study (Section 1.2), the objectives of the study were:

- To develop an instrument for multiple performance measures use.
- To provide evidence on the direct effect of the use of multiple performance measures by superiors (Deans) on the subordinates' (Heads) job-related tension.
- To model and test the moderating effects on that direct relationship of leadership orientations and organizational culture, respectively.

1.4 Scope of the Study

This study examines the levels of job-related tension experienced by Heads of departments as a result of the use of multiple performance measures by their Deans. These levels of job-related tension may be impacted by two moderating variables, namely leadership orientations use and organizational culture.

This study does not examine the impact of job-related tension experienced by Heads of departments on the individual or organization. Though it is recognized that job-related tension is an important aspect influencing outcomes of both the individual and the organization (Kinman, 2001), it is beyond the scope of this study to examine the impact job-related tension has on an individual and/or an organization.

Other performance evaluation studies have looked at the use of multiple performance measures for making judgments when evaluating subordinates (e.g. Lipe and Salterio, 2002; Ittner and Larcker, 1998b). This study will instead focus on the impact of the use

of multiple performance measures on the individuals who were being evaluated, i.e. the Heads of departments.

Due to the difficulties in obtaining data regarding the performance evaluation practices in higher education (i.e. confidentiality issues), the data for this study will be collected through the use of questionnaires. Heads of departments will be asked to complete questionnaires based on their perception of the use of performance measures, use of leadership orientations, organizational culture, and their levels of job-related tension.

1.5 Chapter Outline

This thesis is structured as follows. Following from chapter 1, which is the introduction, chapter 2 explains and evaluates the existing literature on multiple performance measures, leadership orientations, organizational culture, and job-related tension, and clarifies the definitions of those variables in this study.

Chapter 3 develops the hypotheses, with regards to the relationship between multiple performance measures use and job-related tension and the interaction between multiple performance measures use, leadership orientations use, and organizational culture on job-related tension. Chapter 4 explains the development and validation of the multiple performance measures use instrument. Chapter 5 outlines the instruments utilized and discusses the methodology used to collect the data needed. It also explains the choice of instruments and research methods, and discusses the statistical methods used for hypotheses testing. Chapter 6 presents the descriptive statistics and the results of hypotheses testing. Chapter 7 presents a discussion of the findings, the contributions and limitations of the study, and makes suggestions for future research.

Chapter 2

2. Definition of Construct and Literature Review

2.1 Introduction

This chapter provides the definitions and justifications of the constructs used in this study. Firstly, the independent variable, multiple performance measures use will be examined, followed by the two moderating variables namely leadership orientations use and organizational culture. Lastly, the dependent variable, job-related tension will be defined and its use in this study will be justified.

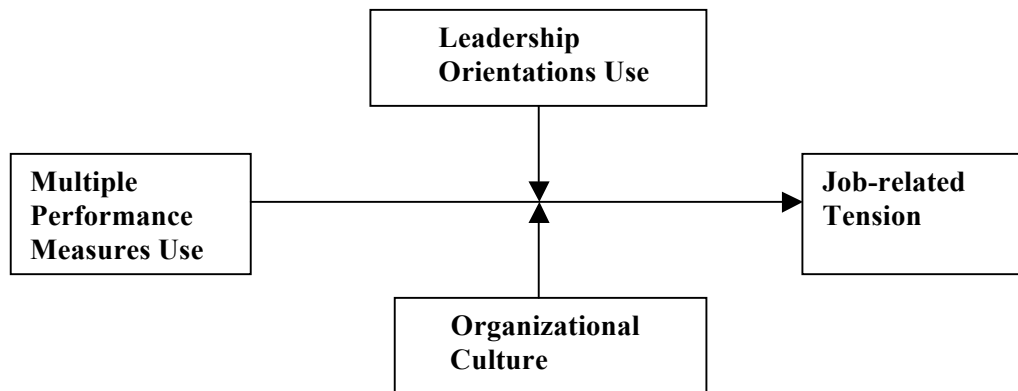


Figure 2.1 Conceptual schema

2.2 Definition and Justification for Independent Variables

In this section, the independent variables of this study are defined and justification of their inclusion is provided. Definitions of multiple performance measures, leadership orientation, and organizational culture will be examined. The development of each theory will be presented followed by the justification for their inclusion in this study.

2.2.1 Multiple Performance Measures Use

The use of multiple performance measures can be characterized by the use of a broad set of financial and non-financial measures for performance evaluation and decision making purposes (Ittner et al., 2003b). In the design of evaluation systems for a faculty in the higher education sector, the use of financial measures (e.g. grants and funding received) and non-financial measures (e.g. student evaluation scores, publications, and teaching quality) are believed to be appropriate and, thus, should be used to evaluate faculty performance (Shao et al., 2007; Szeto and Wright, 2003). Hence, the use of multiple performance measures in this study refers specifically to the extent to which a superior uses multiple performance measures to evaluate subordinates' performance related to four educational performance categories, namely financial, teaching, research, and service.

2.2.1.1 Development of Performance Measurement System

2.2.1.1.1 Traditional (financial) Performance Measures

The performance measurement system can be viewed as “the information system which is at the heart of the performance management process and is of critical importance to the effective and efficient functioning of the performance management system” (Bititci et al., 1997, p.533). Through the quantification of the efficiency and effectiveness of past actions, the performance measurement system is said to facilitate the making of informed decisions (Neely, 1998), the development of strategic plans and the evaluation of an organization's achievements (Ittner and Larcker, 1998b), and the translation of an organization's strategy into desired behaviors and results (Chenhall and Langfield-Smith, 1998; Lillis, 2002).

However, many believe that these functions could not be fulfilled by traditional performance measurement systems (Ittner and Larcker, 1998b; Hoque et al., 2001; Ittner et al., 2003a; Chenhall and Langfield-Smith, 2007). Traditional performance

measurement systems which were introduced in the early 1900s, relied heavily on financial measures in assessing managers' performance and were used mainly for external reporting and meeting government requirements (Johnson and Kaplan, 1987 cited in Jusoh et al., 2006). In today's business environment, where there is less reliance on direct labor, increased capital intensity, and an increased role of intellectual capital and other intangible assets, the use of traditional financial performance measures is believed to be irrelevant (Otley, 2007; Chenhall and Langfield-Smith, 2007). This is because traditional (financial) measures: 1) are unable to capture the future benefits of managerial activities including those from the development of intangible assets such as intellectual capital and employee skills (Feltham and Xie, 1994; Kaplan and Norton, 2001; Ittner and Larcker, 2002); 2) fail to address the qualitative aspects of a manager's job (Moers, 2005), such as innovative activities and improvement of customer relations (Bryant et al., 2004); 3) are less controllable (Ghosh, 2005); 4) lead to increased tension, frustration, resentment, suspicion, fear and mistrust, and reduced long-term performance (Chenhall and Langfield-Smith, 2007); and 5) are ineffective for motivating employees (Feltham and Xie, 1994) as they lead to managers' dysfunctional behaviors (Ittner et al., 2003a). Given the weaknesses of financial measures, many firms are supplementing their traditional financial measures with non-financial performance measures (Ittner et al., 2003b).

2.2.1.1.2 Non-Financial Performance Measures

In the late 1980s many writers promoted the use of more non-financial measures (for a review see Chenhall and Langfield-Smith, 2007, p.267) because organizations are challenged to develop indicators that are able to capture information on all (not only financial) aspects of the business and are more consistent with long-term competitiveness and profitability (Kaplan, 1983). Subsequent research has since found that there is an increased use of non-financial performance indicators in the areas relating to operations management, marketing, human resource management, and corporate strategy (Chenhall and Langfield-Smith, 2007). Ittner and Larcker (2003, p.88) stated that non-financial measures are of benefit to managers, employees and

investors as “managers can get a glimpse of the business’s progress well before a financial verdict is pronounced and the soundness of their investment allocations has become moot. Employees can receive better information on the specific actions needed to achieve strategic objectives and investors can have a better sense of the company’s overall performance, since non-financial indicators usually reflect realms of intangible value.....”.

Non-financial measures are more cognitively valuable (i.e. more meaningful, transparent, and understandable) than financial measures (Luft and Shields, 2001 *cited in* Ittner et al., 2003a) and, as a consequence, they give greater measurement satisfaction (Ittner et al., 2003b). Non-financial measures are claimed to be predictive of future performance (Ittner and Larcker, 1998b) and some studies have found an association between non-financial performance measures and future accounting performance (e.g. Banker et al., 2000; Ittner and Larcker, 1996, 1998a). Given these benefits, to overcome the limitations of the traditional method, many organizations have been encouraged to place less emphasis on financial measures and rely more on multiple performance measures (for a review see Ittner and Larcker, 1998b).

2.2.1.1.3 Multiple Performance Measures

In the 1990s, multiple performance measures were developed in order to encompass a more strategic approach (Chenhall and Langfield-Smith, 2007; Ittner et al., 2003b). Ittner et al. (2003b) identified two approaches for developing a strategic performance measurement system. The first approach is a “measurement diversity” approach, which requires organizations to measure and use a diverse set of financial and non-financial measures. The reason for using this approach is to achieve higher performance by encouraging managers to put greater emphasis on a broad set of financial and non-financial measures. The second approach is based on contingency theory which suggests that to be effective, performance measures must be aligned with an organization’s strategy and/or value drivers (Ittner et al., 2003b, p.715). More specifically, Grafton et al. (2010, p.689) argued that “broad-based, strategically-aligned

performance measures are expected to improve organizational outcomes by enhancing the decision-relevant information available to managers thereby facilitating strategy-consistent decision making”.

The use of multiple performance measures has several advantages. Multiple performance measures capture greater implementable actions and reduce “the risk that must be imposed to induce a particular implementable action” (Feltham and Xie, 1994, p.439). These measures are claimed to prevent managers from overemphasizing one performance measure (and ignoring other relevant measures) (Ittner et al., 2003b). It is not surprising that with these advantages, the use of multiple performance measures has been found to lead to greater performance (Van der Stede et al., 2006; Ittner et al., 2003b; Hoque and James, 2000; Scott and Tiessen, 1999) and effort intensity (Moers, 2005).

Despite these advantages, there are potential drawbacks from the use of multiple performance measures. The use of multiple performance measures has been found to lead to lower judgment performance (Farrell, 2002). Multiple performance measures may consist of too much information and, thus, are difficult to use as they exceed managers’ processing capabilities when making judgments (Lipe and Salterio, 2002; Ittner and Larcker, 1998b). Multiple performance measures that involve subjective measures are not verifiable (Ittner and Larcker, 1998b) and are less reliable for evaluating subordinate’s performance. These measures create discretion in performance appraisals as there is reliance on subjective judgments and no clear performance standards (Moers, 2005).

In addition to performance evaluation bias, the use of subjective measures is likely to increase favoritism, and perception of “unfairness” (Ittner and Larcker, 1998b). As a result, multiple performance measures are less effective for differentiating among subordinates (the highly skilled and less skilled subordinates), thereby providing weak support for making personnel decisions (Moers, 2005). Multiple performance measures may consist of conflicting outcomes (Moers, 2005) and may encourage managers to

allocate their efforts over too many goals, thus reducing the efficiency and effectiveness of the performance measurement system (Ittner and Larcker, 1998b). Furthermore, employees whose performance are evaluated using multiple performance measures (or multiple performance goals) are found to experience goal conflict and goal difficulty (Cheng et al., 2007).

2.2.1.2 Justification for the Use of Multiple Performance Measures

Despite the continuing acknowledgment that a faculty's performance in a university can be measured for three activities, namely teaching, research, and service, most of the assessments were conducted in the teaching and research areas, resulting in little attention being given to performance in service (Kurz et al., 1989). Consequently, most of the earlier studies in this area have been conducted to explain teaching and/or research dimensions of faculty performance. While some studies focused merely on teaching performance (e.g. Brightman, 1987; Calderon et al., 1996; Barnett, 1996; McGowan and Graham, 2009), the others emphasized research performance (e.g. Bublitz and Kee, 1984; Beard et al., 1985; Englebrecht et al., 1994; Heck et al., 1991; King and Henderson, 1991; Zivney et al., 1995; Bazeley 2010) or both (e.g. Webster, 1986; Feldman, 1987; Kinney, 1989; Bell et. al., 1993; Amstrong and Sperry, 1994; Lindsay and Campbell, 1995; Leslie and Lynn, 1998; Aleamoni, 1999; Chiang, 2004). Partly because of the believed antagonism between teaching quality and research productivity, there was (almost) no progress of the study in this area (Grant and Fogarty, 1998). In fact, only limited studies were conducted to identify performance measures in the areas of teaching, research and service (e.g. Schultz et al., 1989; Kurz et al., 1989; McKenna et al., 1995).

In recent times, while there are continuing debates on teaching versus research performance (e.g. Marsh and Hattie, 2002), instead of focusing performance evaluation on a single dimension, such as research or teaching performance, many believe that performance evaluation in higher education, especially at the academic department level, should involve multiple measurement concepts which reflect a set of goals that

include specific goals of the department and the more diffused goals of the university (Grant and Fogarty, 1998; Al-Turki and Duffuaa, 2003; Szeto and Wright, 2003).

Teaching, research, and service are the core of a university's mission (Higgins, 1989; Szeto and Wright, 2003; Shao et al., 2007). In line with this mission, an academic department is usually operated to provide education, conduct research, and offer community service (Al-Turki and Duffuaa, 2003). Consequently, several researchers have found that teaching, research, and service are essential criteria for faculty performance evaluation (Shao et al., 2007; Badri and Abdulla, 2004; Szeto and Wright, 2003). Badri and Abdulla's (2004) study found that it was appropriate to use these criteria to compare faculty members' performance.

While the above studies did not classify multiple performance measures into financial and non-financial categories, several studies have separated financial measures from non-financial measures and recognized the importance of the use of financial measures (e.g. tuition income and number of grants received) to enhance the achievement of a faculty's goals, such as improving faculty's operations, offering better teaching facilities, increasing teaching productivity and providing international quality staff (Papenhausen and Einstein, 2006; Chen et al., 2006). This further explains the higher education sector's tendency to focus heavily on measures that are related to income-generating activities (Tapinos et al., 2005). With this in mind, prior researchers have advocated the use of multiple performance measures that include financial and non-financial categories in higher education (e.g. Papenhausen and Einstein, 2006; Chen et al., 2006; Cullen et al., 2003).

In the education sector, the use of appropriate, multiple performance measures is admitted to be one of the most important, challenging and controversial issues as it should facilitate both subjective and objective interpretations and cover three distinct performance criteria: teaching, research, and service (Shao et al., 2007), where financial performance measures were included in research and service performance. Given the fact that Indonesian higher education faces financial challenges as a result of

limited governmental financial support (Operation Evaluation Department, 2005; DGHE, 2003) and to facilitate the assessment of departmental performance, in this study, the use of multiple performance measures refers specifically to the extent to which a Dean uses multiple performance measures to evaluate a Head's of department performance in the areas of financial, teaching, research, and service performance.

2.2.2 Leadership Orientation

Leadership can be defined as a process of social influence which involves determining the group's or organization's objectives, encouraging behavior in pursuit of these objectives, and influencing group maintenance and culture (Yukl, 1994). To support the objectives of this study, leadership is defined in this study as a process of non-coercive social influence whereby a leader guides the activities and members of a group toward shared objectives and goals in an organization (Thompson, 2000; Bryman, 1992).

2.2.2.1 Development of Leadership Theory

Leadership has been defined and conceptualized in many ways. Schwandt and Szabla (2007) in their observation of leadership in the context of social systems discussed leadership concepts in a number of important phases (see figure 2.2).

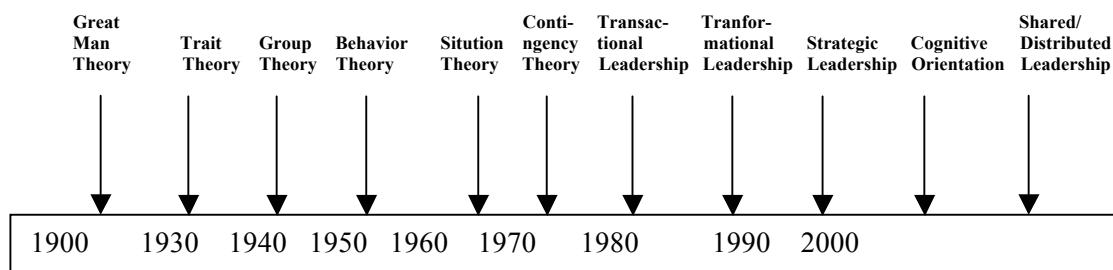


Figure 2.2 Leadership discourse summary: 1900 through 2000
(Adapted from Schwandt and Szabla, 2007, p.56).

The earliest leadership approaches were the Great Man Theory and the Trait Theory. Under the Great Man Theory, leadership was defined as “an innate ability; leaders are born, not made” (Schwandt and Szabla, 2007, p.38), while the Trait Theory focuses on the personal attributes of leaders with the assumption that “some people are natural leaders who are endowed with certain traits not possessed by other people” (Yukl, 1998, p.8). Group Theory was acknowledged by the 1940s when the focus of leadership discussion shifted away from traits of a leader to leader-group relations and group effectiveness.

In the early 1950s, leadership began to be viewed as what leaders actually do instead of their characteristics. Research that followed this Behavior Theory were concerned with the behaviors the leader adopted and focused on identifying “the best way of leading” such as consideration¹ versus initiating structure² (Yukl, 1998; Ogbonna and Harris, 2000). Situation and Contingency Theories were recognized when people considered the importance of contextual factors (e.g. the nature of work performed by the leader, the nature of the external environment, the characteristic of followers) in determining leadership effectiveness (Ogbonna and Harris, 2000; Yukl, 1998).

In the 1980s, Transactional and Transformational Leadership become popular and since then studies have contrasted the two approaches (e.g. Bass, 1985, 1990; MacKenzie et al., 2001). Transactional Leadership is defined as “an exchange process to motivate follower compliance with a leader’s requests and organizational requirements”, while Transformational leadership involves “an underlying influence process that motivates followers by encouraging them to transcend their self-interests for the sake of the organization and goal accomplishment” (Yammarino et al., 2005, p.897).

¹ Consideration is defined as the degree to which the leader acts in a friendly manner toward subordinates.

² Initiating structure is defined as the degree to which a leader defines and structures his/her role and roles of the subordinates towards achieving the goals of the group (Schwandt and Szabla, 2007, p.50).

Schwandt and Szabla (2007) pointed out that Strategic Leadership emerged as leadership studies' focus moved from internal to external factors of organizations such as environmental changes and competitive positions. This led to changes in research focus from behavior orientation to cognitive orientation, that is, an orientation that reflects a leader's intellectual understanding and response to the organization's whole system (Boles, 1976). Shared and Distributed Leadership emerged at the end of the century when leadership was considered "a phenomenon that emerged from and was embodied in the interactions of participants" (Schwandt and Szabla, 2007, p.55).

In the development of leadership theory, researchers have identified the content of leadership behaviors. The two behavior categories that had been defined broadly in the early leadership research include task-oriented and relation-oriented behaviors (Yukl, 1998). Task-oriented leaders focus on short-term planning, clarifying responsibilities and performance objectives, and monitoring operations and performance, while relation-oriented leaders focus on providing support and encouragement, providing recognition for achievement and contributions, developing member skill and confidence, consulting with members when making decisions, and empowering members to take initiative in problem solving (Yukl et al., 2002).

Another well-accepted categorization of manager/leader roles was provided by Mintzberg (1975) who identified ten roles of the manager/leader within three broad categories, namely interpersonal roles, information roles, and decisional roles. Interpersonal roles include roles such as figurehead (i.e. formal authority, role model), leader (i.e. integrate sub unit and hire, train, direct, praise, promote, fire), and liaison (i.e. relationships, networks, alliances). Information roles include roles such as monitor (i.e. meetings, environmental scanning), disseminator (i.e. essentially communications), and spokesperson (i.e. public relations, shareholder/owner relations). Roles under decision-making include entrepreneur (i.e. innovations, continuous improvement and learning), disturbance handler (i.e. problem analysis and resolution), resource allocator (planning, staffing), and negotiator (i.e. contract, conflict resolution) (Mintzberg, 1975, p.54; Strang, 2007, p.440).

The relationship between the behaviors and effectiveness of leadership has been investigated initially using a two-factor model including task versus relationship, autocratic versus participative behaviors, and transformational versus transactional leadership (Yukl, 1999). People behavior is believed to be incomprehensible and their interactions among the others are complex (Bolman and Deal, 2003). The two-factor models are said to oversimplify this complex phenomenon and omit relevant leader behaviors reducing the understanding of effective leadership (Yukl, 1999). It is argued that best results could be achieved only by leaders who apply a variety of leadership styles depending on the business situation (Goleman, 2000; Hooijberg, 1996).

New approaches to leadership research, therefore, illustrate effectiveness using more complex perspectives emphasizing leader emotions, values, motivation and symbolic behaviors. Examples include the multiple-linkage model (Kim and Yukl, 1995), the leaderplex model (Hooijberg et al., 1997), and the four-orientation (frame) leadership theory (Bolman and Deal, 1991). The multiple-linkage model identified 14 specific categories of relevant leadership behaviors whilst the leaderplex model integrates cognitive capacity, social intelligence and behavioral complexity of leaders (Yammarino et al., 2005). The four-orientations of leadership include four essential components, namely: structural, human resource, political and symbolic (Bolman and Deal, 1991).

To date, empirical research testing the first two models has been very limited (see Kim and Yukl, 1995; Yammarino et al., 2005). In contrast, the four-orientation leadership theory has been used in a considerable number of research, especially in the education sector (Sypawka et al., 2010; MCardle, 2008; Maitra, 2007; Beck-Frazier et al., 2007; Trees, 2006; Kelly, 1997; Thompson, 2000; Bolman and Deal, 1991), and in other sectors such as government and non-profit organizations (Kubala, 2002; Heimovics et al., 1993), and business (Villanueva, 2003; Seaborne, 2003; Mabey, 2003; Bedore, 1998; Kelly, 1997; Bolman and Deal, 1991).

2.2.2.2 Justification for the Use of the Four-orientation Leadership Theory

This study uses Bolman and Deal's (1991) four-orientation leadership theory for several reasons. Firstly, instead of limiting the leadership styles into a narrow viewpoint (e.g. the popular two-factor model "transformational versus transactional" leadership style), the model formulated leadership using expanded orientations for understanding complex organizational life. The four leadership orientations identified by Bolman and Deal (1991) are structural, human resource, political, and symbolic orientations. Leaders with a structural orientation emphasize goals and efficiency, value analysis and data, focus on the bottom line, provide clear directions, hold people accountable for results, and utilize policies, rules or restructuring for solving organizational problems (Bolman and Deal, 1991). Leaders with a human resource orientation highlight human needs and, thus, value relationships and feelings (Bolman and Deal, 1991). Political leaders act as advocates and negotiators in handling continuing conflict and competition among different interests and scarce resources (Bolman and Deal, 1991). Symbolic leaders use charisma and drama to introduce a sense of enthusiasm and commitment (Bolman and Deal, 1991, p.511). Bolman and Deal (1991) argued that leaders, to be fully effective as both managers and leaders, must rely on those four leadership orientations.

Secondly, the ability of the four-orientation leadership theory in explaining the nature of effective leadership is proven (for examples, Bolman and Deal, 1991; Thompson, 2000; Villanueva, 2003). Lastly, this theory is particularly relevant to this study as it has been widely used to determine leadership styles and/or effectiveness in the higher education sector (Sypawka et al., 2010; MCardle, 2008; Maitra, 2007; Beck-Frazier et al., 2007; Trees, 2006; Kelly, 1997; Thompson, 2000; Bolman and Deal, 1991).

2.2.3 Organizational Culture

Organizational culture can be defined as “core values that are shared by a majority of the organization’s members” (Martin and Siehl, 1983, p.53). Similarly, Jaskyte (2010, p.425) defined organizational culture as “a set of shared values that help organizational members understand organizational functioning and guides their thinking and behavior”. Consistent with these definitions, Henri (2006) operationalized organizational culture as a set of shared values (what is important) that interact with an organization’s structures and control systems to produce behavioral norms (the way we do things around here). This study follows Henri’s (2006) operationalization to support the objectives of the study.

2.2.3.1 Development of Organizational Culture Theory

The first concept of organizational culture was introduced by Pettigrew (1979). Shortly after that, the study of organizational culture has become a popular area in organizational research since the early 1980s (e.g. Deal and Kennedy, 1982; Wilkins and Ouchi, 1983; Ouchi and Wilkins, 1985) (for review see Bellot, 2011).

Several authors have identified different definitions of organizational culture used in the literature (Cooke and Rousseau, 1988; Bellot, 2011). The definitions identified by Cooke and Rousseau (1988, p. 248) include: glue that holds together an organization through shared patterns of meaning; set of symbols, ceremonies, and myths that communicates the underlying values and beliefs of the organization to its employees; values, beliefs and expectations that members come to share; and shared values (what is important) and beliefs (how things work) that interact with an organization’s structures and control systems to produce behavioral norms (the way we do things around here). Meanwhile, Bellot (2011) identified several accepted definitions of organizational culture that have been used in the literature which include definitions by Schein (1987), Alvesson (2002), Martin and Siehl (1983), Pettigrew (1979), Schneider

(2000), and Hofstede et al., (1990). Among those definitions, most recent research have used Schein's (1987) definition³ or a derivative of his work (Bellot, 2011).

A variety of aspects and dimensions of organizational culture have been proposed by authors in the last three decades (Jaskyte, 2010; Goodman et al., 2001; Quinn, 1988; Quinn and Rohrbaugh, 1983). Jaskyte (2010) identified three aspects that have been highlighted in the organizational culture literature: *organizational values* (organizational culture content), which is the focus of the most extensive research, *cultural consensus* (the extent to which values are widely shared), and *culture structure* (or existence of sub culture).

Among the popular organizational culture dimensions are those based on the competing values model (Quinn, 1988). The competing values model describes organizational culture in three different value dimensions: control versus flexible (or flexibility), focus on internal versus external stakeholder, and means versus ends (Quinn and Rohrbaugh, 1983; Goodman et al., 2001) (see Figure 2.3). The first dimension is related to organizational structure, from an emphasis on stability to an emphasis on flexibility. The second dimension reflects whether an organization focuses on internal dynamics or the external environment whilst the last dimension is related to organizational means and ends, from emphasis on important processes (e.g. planning and goal setting) to an emphasis on final outcomes (e.g. productivity) (Quinn and Rohrbaugh, 1983; Goodman et al., 2001). As shown in Figure 2.3, the competing values model produces four cultural orientations: group, development, hierarchical and rational. The group culture emphasizes human relations and morale; the development culture emphasizes growth and adaptability; the hierarchical culture values stability and control; and the rational culture values productivity and efficiency (Goodman et al., 2001, p.61).

³ “The pattern of shared basic assumptions which a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore to be tough to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 1987, p.383).

The competing values framework has been used to investigate various relationships, namely the relationship between organizational culture and innovativeness (Deshpande et al., 1993); the relationship between organizational culture and dimensions of marketing effectiveness (Leisen et al., 2002); the relationship between organizational culture and organizational commitment, job involvement, empowerment, and job satisfaction (Goodman et al., 2001); and the relationship between organizational culture, leadership style and organizational performance (Ogbonna and Harris, 2000). In the management accounting literature, the competing values model has been used to explain the impact of the environment in performance settings (Dunk and Lysons, 1997), the perceived management accounting system success (Bhimani, 2003), and the use of more/less performance measures (Henri, 2006).

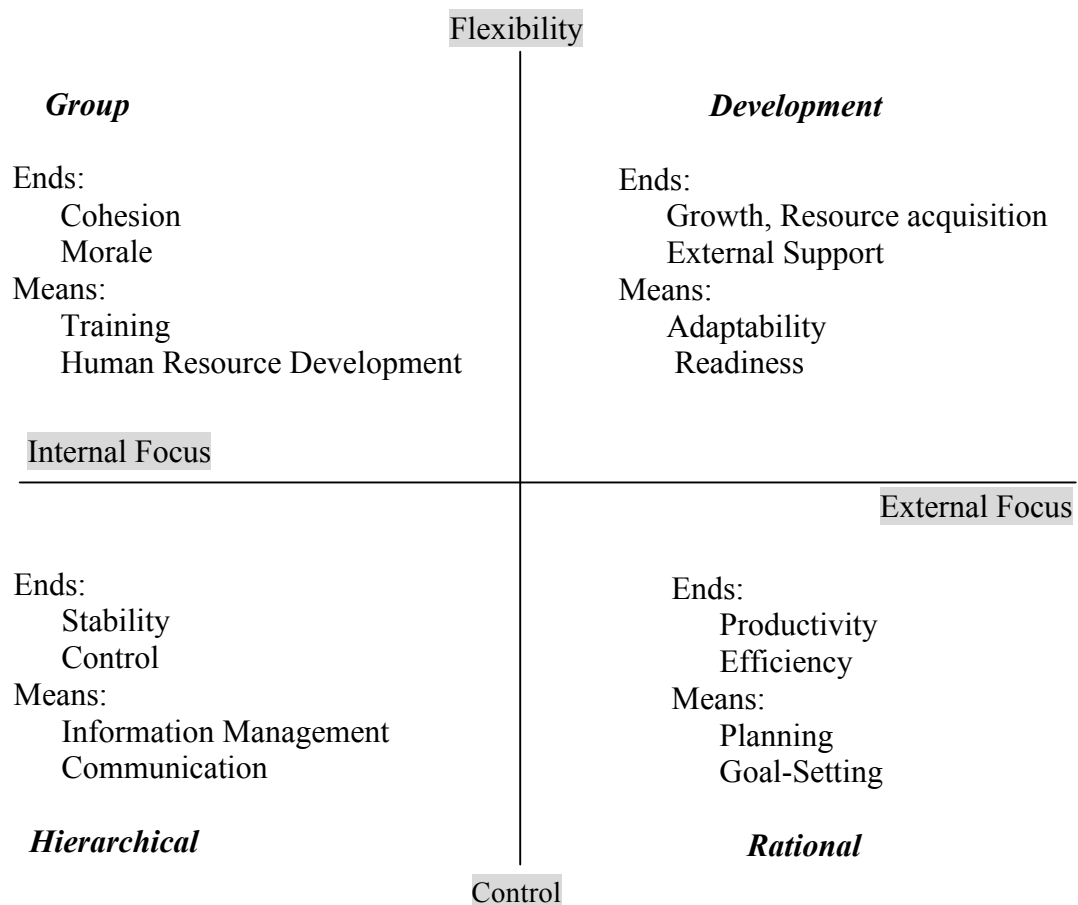


Figure 2.3 The Competing Values Framework (Quinn and Rohrbaugh, 1983; Goodman et al., 2001)

2.2.3.2 Justification for the Use of Organizational Culture based on the Competing Values Model

Studying organizational culture is very important, not just to understand employees' attitudes and behaviors (Jaskyte, 2010) but also to explain important organizational factors such as product/service innovation (Valencia et al., 2010) and organizational performance (Xenikou and Simosi, 2006).

This study uses the competing values model as it is a popular model whose dimensions are argued to reflect recognized dilemmas of organizational life (Quinn and Rohrbaugh, 1983). This model has been proven to be a valid framework for examining organizational cultures (Deshpande et al., 1993; Howard, 1998; Kalliath et al., 1999). In the higher education setting, the competing values framework has been used to set organizational self-rating scales (Pounder, 2000) and to justify faculty evaluations (Redmon, 1999).

Following Henri (2006), this study will use the competing values model by focusing on the cultural types which are associated with control and flexible⁴ values. These values are particularly relevant to this study as the control/flexible issue is related to the essence of management control systems and has been debated continuously in the management accounting literature (Henri, 2006). In the competing values framework (Quinn and Rohrbaugh, 1983; Goodman et al., 2001) presented in Figure 2.3, flexible culture includes values from developmental and group types of culture whilst the control culture includes rational and hierarchical orientations (Quinn, 1988). The flexible culture emphasizes spontaneity, change, openness, adaptability and responsiveness, while control values refer to predictability, stability, formality, rigidity and conformity (Henri, 2006).

⁴ The term *flexible* is used in this study instead of *flexibility*.

2.3 Definition and Justification for Dependent Variables – Job-related Tension

Job-related tension (job stress) is the dependent variable used in this study. In the following section, definitions of job-related tension will be examined. The development of job-related tension theory will be presented before justification for its inclusion in this study.

Stress has been defined as focusing on stressful stimulus (events or situations in the environment which poses a threat to individuals), stress response (the reaction the individual has to the stressors), and the interaction between environmental stimuli (stressors) and individual responses (Sulsky and Smith, 2005, p.4-6; Beehr and Newman, 1978). While the first two seem inadequate because they may fail to explain different responses from different stressors, the last focus identifies stress response as a result of an individual's perception that the stressor is indeed stressful or threatening. That response may be dependent on personal, group, and situational characteristics, or moderators. In other words, stress is “a function of the stressor(s), psychological appraisal, short-term stress outcome(s), strains, and stress moderators” (Sulsky and Smith, 2005, p.7).

Kahn et al.'s (1964) view of role stress⁵ is consistent with Beehr and Newman's (1978) identification of the environmental stressors especially those related to role/job demands or expectations. Different terms have been used by researchers when using Kahn et al.'s (1964) conceptualization of job-related tension. Examples include job tension (Wooten et al., 2010), job stress or stressors (Gupta and Beehr, 1979; Varca, 1999; Smith et al., 1993; Jamal, 2008, 2010), role-related stress (Pettegrew and Wolf, 1982), job-related stress (Berger-Gross, 1982), and occupational stress (Greer and Castro, 1986). For the purpose of this study, the term job-related tension and stress are used interchangeably.

⁵ i.e. the discrepancy between individual role expectations and their actual experience of that role (Pettegrew and Wolf, 1982).

2.3.1 Development of Job-related Tension Theory

One of the early studies on job-related tension was carried out by Kahn et al. (1964). Kahn et al. (1964) identified job-related tension as a latent variable that takes basically two forms: role conflict and role ambiguity. Several types of role conflicts identified by Kahn et al., (1964) include *intra-sender conflicts* (different prescriptions and proscriptions of the role set by a single member may be incompatible); *inter-sender conflict* (pressures from one role sender are in conflict with pressures from one or more other senders); *inter-role conflict* (the role pressures associated with membership in one organization are in conflict with pressures stemming from membership in other groups); and *person-role conflict* (role requirements violate moral values) (Kahn et al., 1964, pp. 19-20).

Role ambiguity has been categorized into *objective ambiguity* (a condition in the environment); *subjective ambiguity* (a state of the person); *task ambiguity* (lack of information concerning the proper definition of the job, its goals, and permissible means for implementing them); and *socio-emotional ambiguity* (a person's concern about his standing in the eyes of others and about the consequences of his actions for the attainment of his personal goals) (Kahn et al., 1964, pp. 22-23, 94-95). Breugh and Colihan (1994, p.192-193) identify three distinct aspects of job ambiguity, namely: work method (i.e. employee uncertainty regarding the methods or procedures that should be used to do their job), scheduling (i.e. employee uncertainty about the scheduling and sequencing of work activities), and performance criteria ambiguity (i.e. employee uncertainty concerning the standards that are used for judging their performance). Beehr and Glazer (2005), in their review of role stress, identified situations in which role ambiguity is often perceived, such as changes in technology, social structures, new personnel entering organization, changes in jobs, new supervisor, and new workplace.

The other well-accepted dimension of job-related tension is *role/work overload*. Work overload occurs when subordinates feel that they have too heavy a workload (Kahn et

al., 1964) or they feel that they are required to do something which is beyond their abilities even when given an infinite amount of time (Mueller, 1965 cited in Sales, 1969). Role overload can be objective and subjective in nature. While, objective role overload refers to the actual interaction between the abilities of the individuals and the work demands, subjective role overload refers to the interaction between the abilities of the individuals and the work demands as it is perceived by the individuals (Sales, 1969). Role overload has been considered as part of role conflict⁶ (Kahn et al., 1964, Rizzo et al., 1970) or as a different dimension (Glazer and Beehr, 2005; Jamal 2008, 2010).

Following Kahn et al.'s (1964) study, several authors have proved the multidimensionality of job-related tension (MacKinnon, 1978; Berger-Gross, 1982; Jamal, 1985; Rogers et al., 1994; Wooten et al., 2010). Using Kahn et al.'s (1964) job-related tension index, MacKinnon (1978) identified four dimensions of job-related tension including job overload, ambiguity concerning evaluation and peer acceptance, anxiety over self-competence, and ambiguity concerning authority and promotion whilst Berger-Gross (1982) found three job-related tension dimensions namely role ambiguity, promotional uncertainty, and work overload. The other dimensions identified by previous studies include role conflict, resource inadequacy⁷, structure of performance, organizational design, responsibility/authority, and decision making (Jamal, 1985; Rogers et al., 1994; Wooten et al., 2010). Despite all attempts to reflect the multidimensionality of job-related tension, most studies have focused on role conflict and ambiguity (Rizzo et al., 1970; Beehr and Newman, 1978; Fisher and Gitelson, 1983; Jackson and Schuler, 1985; Gonzalez-Roma & Lloret, 1998; Boshoff and Mels, 1995; Pool, 2000; Shih and Chen, 2006; Burney and Widener, 2007; Wood and Fields, 2007).

⁶ For example, Kahn et al. (1964, p.20) regarded *role overload* as a complex, emergent type combining aspects of inter-sender and person-role conflicts.

⁷ Resource inadequacy occurs when individual feels that he/she lacks proper resources, information, contacts, and skills needed to perform his/her job (Jamal, 1985, p. 413).

Studies found that job-related tension is influenced by social and organizational aspects of the workplace such as leadership style/supervisory behavior (Boshoff and Mels, 1995; Choo and Tan, 1997; Joiner and Bartram, 2004; Erkutlu and Chafra, 2006; Gill et al., 2006; Wood and Field, 2007), use of performance measures (Hall, 2008), and organizational culture (Pool, 2000). The continuing and extensive research that has been conducted to identify factors moderating the effect of job-related tension found that both environmental (e.g. social support, job control) and individual factors (e.g. hardiness, self-efficacy, internal locus of control, type A behavior pattern, negative affectivity) (Beehr and Glazer, 2005) were important. Murphy (1995) suggested three moderating factors, namely personal characteristics (e.g. personality traits), non-work factors (e.g. family matters, child-rearing, financial issues, social relationship), and buffer factors (e.g. social support from supervisor, co-workers, and family); while Beehr and Newman (1978) identified experiences, psychological set, cultural factors, and mechanisms of defense as moderating factors that affect job-related tension.

The majority of studies on job-related tension have focused on industrial organizations within the private sector, despite increasing speculation that job-related tension is considerable among the human service professions including those in higher education (Pettegrew and Wolf, 1982; Kinman, 2001). In fact, job-related tension has been found to affect individuals in higher education at different levels (i.e. cognitive, behavioral, physical, and psychological) and to also affect organizational factors such as job satisfaction, job performance, and employee turnover (Kinman, 2001). Job-related tension associated with teaching, scientific work and other tasks has become a main concern (Boardman and Bozeman, 2007; Gmelch and Burns, 1994; Sarros et al., 1997) and the dimensions role conflict, role ambiguity, and workload have received some attention in higher education research (for review see Kinman, 2001).

2.3.2 Justification for the Use of Job-related Tension

Job-related tension was found to be associated with both individual and organizational outcomes. Individual outcomes affected by job-related tension include psychological, physical, and behavioral strains (Beehr and Glazer, 2005). The organizational

outcomes/problems influenced by job-related tension are decreased performance (Jamal, 1984, 1985), employee withdrawal behaviors/turnover motivation (Gupta and Beehr, 1979; Glazer and Beehr, 2005; Jamal, 2010), employee burnout (Jamal, 2010), job satisfaction (Sarros et al., 1997; Jamal, 2008), quality service (Varca, 1999), and unit effectiveness (Greer and Castro, 1986). Thus, studying job-related tension experienced by organizational members is important to improve individual and organizational outcomes.

Kahn et al.'s (1964) definition of job-related tension is used in this study as it is relevant to this study in at least two ways. First, it involves individual perceptions of the work context (Varca, 1999) and, second, it is closely related to administrative/management practices (Pettegrew and Wolf, 1982).

2.4 Choice of the Independent Variables amongst Other Sources of Job-related Tension

In an organizational context, there are many sources of job stress (Beehr and Newman, 1978; Gmelch and Burns, 1994; Kinman, 2001; Winefield et al., 2003; Tytherleigh et al., 2005). Major dimensions of job stress may include environmental, personal, career, and organizational dimensions (Beehr and Newman, 1978; Ivancevich et al., 1985). Elements of environmental dimension may include job demands and task characteristics (time pressures/work overload, job scope, responsibility, obsolescence) and role demands or expectations (ambiguity, conflict, relationships) (Beehr and Newman, 1978; Ivancevich et al., 1985). Personal factors that have been modeled as affecting job stress in prior studies include individual self perception and power, locus of control, type A and B behavioral pattern, flexibility and rigidity, and intolerance of ambiguity (Treven and Treven, 2011; Beehr and Newman, 1978). Stressors related to career may include career development and progress (Ivancevich et al., 1985) whilst organizational factors such as evaluation, control, rewards, changes, and communication have been included as elements of the organizational dimension of job stress (Beehr and Newman, 1978; Ivancevich et al., 1985).

This study uses three organizational factors namely multiple performance measures use, leadership orientations and organizational culture as determinants of job-related tension as they are also recognized to be important factors for explaining job-related tension (Patelli, 2007; Hall, 2008; Burney and Widener, 2007; Gill et al., 2006; Erkutlu and Chafra, 2006; Chen and Silverthorne, 2005; Safaria et al., 2011; Pool, 2000; Zeffane and McLoughlin, 2006; Shih and Chen, 2006). Another important reason for choosing these three factors is because there have been little attempts made by prior researchers to explain the joint impact of these variables on reducing/increasing job-related tension.

2.5 Summary

This chapter defined and justified the use of dependent and independent variables in this study. Using these variables, the following chapter will present the hypotheses development of this study.

Chapter 3

3. Hypotheses Development

3.1 Introduction

This chapter develops the four hypotheses used in this study. The first hypothesis relates to the relationship between multiple performance measures use and job-related tension. The second hypothesis focuses on the interaction effect of multiple performance measures use and leadership orientations use on job-related tension. The third hypothesis relates to the interaction effect of multiple performance measures use and organizational culture on job-related tension and, lastly, the fourth hypothesis is developed in relation to the three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture on job-related tension.

3.2 The Relationship between Multiple Performance Measures Use and the Dependent Variable of Job-related Tension

Prior research in management accounting have provided evidence for the performance impact of the use of multiple performance measures in a business environment (Van der Stede et al., 2006; Hoque et al., 2001; Banker et al., 2000; Hoque and James, 2000; Scott and Tiessen, 1999). In relation to job-related tension, the use of multiple performance measures is expected to lessen job-related tension by improving managers' understanding of their roles and what is expected in terms of job performance. Support for this is provided by Hall (2008) who found a positive association between the use of multiple performance measures and role clarity, a dimension of job-related tension.

Similarly, empirical support has been found for the use of multiple performance measures in the education sector (for example Shao et al., 2007; Szeto and Wright, 2003; Grant and Fogarty, 1998). The expectation is that to achieve desirable job-related outcomes, performance measures need to cover various performance areas such as financial, teaching, research, and service. Prior research has found that a range of performance indicators should be considered by Deans when evaluating their Heads' of departments performance because Heads of departments are responsible for a variety of activities. As pointed out by Diamond (1996, p.2), the new roles of a Head of department include "altering the faculty-reward system, putting greater weight on teaching and advising students; and making budget and program decisions that determine the direction of the departments".

From the above identification of Heads' of departments roles, it can be concluded that Heads of departments typically deal with a number of different tasks. Feldman (1976) found that as subordinates have many different tasks, they have great difficulty in defining their jobs. Therefore, multiple performance measures need to be used to evaluate Heads' of departments performance so as to clarify the relevant aspects of their performance, to provide sufficient feedback on different goals, and to give clear information about job expectations. As a result of the use multiple performance measures, information adequacy and role clarity increases and, thus, the job-related tension experienced by the Heads of departments will be reduced.

On the other hand, the use of limited performance measures to evaluate the performance of Heads of departments is likely to give inadequate recognition of their performance and provide insufficient information about the demands and expectations of their role, leading to perceived uncertainty (Madzar, 2005). In line with this finding, a lack of recognition and clarity in performance evaluation has also been found to be a source of academics' (including Heads' of departments) job stress (Winefield et al., 2003; Sarros et al., 1997).

Based on the above argument, it is expected in this study that Heads of departments whose performance are assessed using multiple performance measures will have lower job-related tension while those whose performance are assessed using limited performance measures will experience higher job-related tension. Accordingly, the first hypothesis stated in the null form is:

H₀₁: *There is no significant negative correlation between multiple performance measures use and job-related tension.*

3.3 The Relationship between Multiple Performance Measures Use, Leadership Orientations Use and the Dependent Variable of Job-related Tension

As discussed earlier in section 3.2, it is hypothesized that the use of multiple performance measures will lower Heads' of departments job-related tension. However, it is argued in this study that this relationship will be moderated by the Dean's use of leadership orientations. When Deans provide their Heads of departments with multiple performance measures, the Heads of departments will have broader information about their performance goals, which will result in goal clarity (Hall, 2008). However, as argued by Emsley (2003), when given multiple goals, subordinates need to make decisions about prioritizing goals, allocating resources, and, potentially making trade-offs between them. Unfortunately, multiple performance criteria do not provide further clues on how to prioritize and allocate time for completing tasks (Breugh and Colihan, 1994).

To get an idea on how to prioritize their goals, Heads of departments need to identify their Dean's priorities. It is argued in this study that when Deans use limited leadership orientations, and, therefore, have a restricted point of view (Bolman and Deal, 1991), it will be easier for Heads of departments to identify the Deans' priorities. In contrast, when the Deans use more leadership orientations, it will be more difficult for the Heads of departments to identify the Deans' priorities because the Deans are likely to

see different alternatives from different perspectives (Bolman and Deal, 1991). When faced with this uncertainty, Heads of departments are likely to experience information overload, a common stress builder (LaBrosse, 2008). Thus, it is hypothesized in this study that job-related tension of Heads of departments dealing with multiple performance measures will be lower when they are led by Deans with limited leadership orientations and will be higher when they have Deans who use multiple leadership orientations.

On the other hand, when a limited number of performance measures are used to evaluate the performance of Heads of departments, it is less likely that the Heads of departments will face a problem with prioritizing performance criteria. However, the limited performance measures will probably not help clarify the Heads' of departments role expectations. Consequently, role uncertainty will increase, especially for those dealing with multiple tasks. Morrison (2002) suggested that to reduce role uncertainty, subordinates may seek alternative sources of information to identify other important aspects used by their leaders to evaluate their performance. One way to reduce uncertainty is by focusing on cognitive processes rather than communication behaviors (Kramer, 1999). In this process, subordinates observe their leaders' behaviors to reduce their role uncertainty. This can be explained through the process of role modeling⁸ and frame alignment⁹.

For a Head of department dealing with a range of tasks, when his/her performance is evaluated using limited performance measures, he/she needs a Dean who is able to

⁸ Role modelling refers to the learning process in which subordinates infer relevant messages from observation of their leader's behavior, life style, emotional reactions, values, aspirations, preferences and the like (Shamir et al., 1993, p.584). In this process, the leader becomes an image that helps followers to define traits, values, beliefs and behaviors that are good and worth developing (Shamir et al., 1993) and the followers have a desire to direct their beliefs, feeling and behavior according to those of the leader (Kark et al., 2003). This is in line with the argument that subordinates may use various methods to be perceived as a competent individual by their leaders. This includes expressing values, beliefs and opinions similar to those of the leader and behaving in a way, or creating an image, which is perceived to be appropriate by the leader (Deluga & Perry, 1994, p.69).

⁹ Frame alignment (Snow et al., 1986) refers to the linkage of individual and leader interpretive orientations, such that some set of followers' interests, values and beliefs and the leader's activities, goals and ideology become congruent and complementary (Shamir et al., 1993).

clarify his/her job expectations. The Head of department, through processes such as role modeling or frame alignment can get clues on what is expected of him/her by observing how his/her Dean sees alternatives (including performance alternatives) from different orientations. This is expected to help clarify the Head of department's role expectations. Therefore, the use of limited performance measures will be less likely to lead to higher job-related tension if the Dean uses more leadership orientations. In contrast, the Head of department's job-related tension will be higher if his/her Dean uses limited leadership orientations because the Head of department will not get sufficient cues from his/her Dean's behavior to provide direction on how he/she should perform in his/her roles in order to get good performance appraisals. Rizzo et al. (1970) pointed out that when subordinates do not understand how they will be judged, they will make decisions under uncertainty and "have to rely on a trial and error approach in meeting the expectations of their leader" (Rizzo et al., 1970, p.151). This is in line with Feldman's (1976, p.443) argument that subordinates dealing with incomplete information will have "a much more difficult time in sorting out what exactly they are supposed to be doing".

Given the above argument, it is expected in this study that Heads of departments whose performance are assessed using limited performance measures will have lower job-related tension when their Deans use more leadership orientations and will have higher job-related tension when their Deans use limited leadership orientations. On the other hand, Heads of departments whose performance are evaluated using multiple performance measures will experience higher job-related tension when their Deans use more leadership orientations and will experience lower job-related tension when Deans use limited leadership orientations. Accordingly, the second hypothesis stated in the null form is:

H₀₂: *There is no significant interaction between multiple performance measures use and leadership orientations use affecting job-related tension.*

3.4 The Relationship between Multiple Performance Measures Use, Organizational Culture and the Dependent Variable of Job-related Tension

It was argued earlier in section 3.2 that the use of multiple performance measures will lower Heads' of departments job-related tension. This relationship is likely to be affected by organizational culture. Henri (2006) found that senior managers of organizations dominated by a flexible culture tend to use more performance measures than senior managers of organizations dominated by a control culture. This may be because the managers feel that the use of multiple performance measures is appropriate to clarify both quantitative and qualitative job aspects and to maintain flexible values such as change, innovation, adaptability, flexibility, and creativity. Thus, it is reasonable to expect that when Heads of departments working within a flexible culture are evaluated using multiple performance measures by their Deans, they are likely to experience what Feldman (1976) called *congruence of evaluation*¹⁰, which will lead to Heads of departments feeling more fairly and equitably evaluated on their job performance. This can be expected to lead to lower Heads' of departments job-related tension.

In contrast, the use of limited performance measures to assess Heads' of departments performance in an organization with a flexible culture is likely to increase their job-related tension. This is because the use of limited performance measures may fail to fully recognize the Heads' of departments performance, including those related to the flexible-culture values shared by them (e.g. adaptation, change, cohesiveness, participation, teamwork, entrepreneurship, and creativity). As discussed earlier in section 3.2, this lack of recognition has been proven to be a source of job-related tension for subordinates (Sharpley et al., 1996; Winefield et al., 2003). Therefore, it can be expected that the use of limited performance measures to evaluate Heads' of departments performance in an organization dominated by a flexible culture will lead to increased Heads' of departments job-related tension.

¹⁰ Congruence of evaluation is the extent to which a subordinate and a leader similarly evaluate the subordinate's progress in the organization (Feldman, 1976).

Organizations with a control culture, on the other hand, value predictability, conformity and stability. Henri (2006, p.87) argued that organizations with a control culture may emphasize mainly financial measures as they are associated with the planning-and-control cycle, vertical functions, and discourage innovation and creativity. This emphasis on primarily financial information may be consistent with the emphasis on conformity and stability within control value organizations (Henri, 2006). In addition, Patelli (2007) pointed out that the use of multiple performance measures has been concerned with the *lack of focus*. This will make it more difficult for subordinates to predict the area of concern when their performance are evaluated, leading to higher job-related tension.

The above arguments lead us to the expectation that the use of multiple performance measures to evaluate Heads of departments within a flexible culture will reduce their job-related tension whilst the use of limited performance measures to evaluate these Heads of departments will increase their job-related tension. In contrast, the use of limited performance measures to evaluate performance of Heads of departments within a control culture will lead to lower job-related tension whilst the use of more performance measures to evaluate these Heads of departments is expected to increase their job-related tension. This forms the basis for the following null hypothesis:

H₀₃: *There is no significant interaction between organizational culture and multiple performance measures use affecting job-related tension.*

3.5 The Three-way Interaction between Multiple Performance Measures Use, Organizational Culture, and Leadership Orientations Use affecting Job-related Tension

It was argued in section 3.3 that the use of more/less performance measures to evaluate Heads' of departments performance will lead to higher/lower Heads' of departments job-related tension, depending on whether their Deans use more/less leadership orientations. Also stated in section 3.3, through the role modeling process, i.e. a process when leaders' behaviors are observed and then followed by their subordinates

(Shamir et al., 1993; Kark et al., 2003), Heads of departments are expected to observe their Deans' use of leadership orientations and interpret them as additional clues (on what is expected of their job) that need to be followed.

However, Hatch (2005) argued that “members of an organization do not simply mimic leader behaviors; they scrutinize it, test it, judge it, and use their interpretation to challenge, criticize, legitimize, and construct new behaviors of their own” (Hatch, 2005, p.254). It is argued in this study that organizational culture will affect this process, that is, how Heads of departments interpret their Deans' behavior. In particular, when Deans use multiple performance measures and introduce different leadership orientations to define situations and determine actions needed to achieve the expected performance, Heads of departments working in a flexible culture are likely to respond positively because their cultural values, such as openness, adaptability, responsiveness, motivation to change, and creativity (Henri, 2006), are compatible with both the use of multiple performance measures and multiple leadership orientations.

It was also argued in section 3.3 that the use of multiple performance measures may increase the need to make decisions about prioritizing goals, allocating resources, and, potentially making trade-offs between them (Emsley, 2003). This is less likely to be a significant problem for Heads of departments sharing a flexible culture because these Heads of departments value adaptability and creativity. Heads of departments are expected to promote these values in their work activities and, thus, are expected to have the ability to adapt and be creative. With this ability, individuals are skilled at integrating a variety of activities and interests around their work (Root-Berstein et al., 1993; Sheldon, 1995). The above arguments lead us to the expectation that the use of multiple performance measures and more leadership orientations by Deans will not lead to Heads' of departments higher job-related tension when a flexible culture is dominant.

On the contrary, Heads of departments within control cultures are likely to respond negatively to the use of more performance measures and more leadership orientations. While subordinates within a flexible culture are open and adaptive (Treven and Treven,

2011), subordinates sharing a control culture have less openness and adaptability. Due to the lack of openness and adaptability, it is reasonable to expect that Heads of departments within a control culture will be dissatisfied and criticize their Deans' use of multiple performance measures and various leadership orientations. This situation is expected to increase Heads' of departments job-related tension.

It was also argued in the hypothesis development for hypothesis 2 in section 3.3 that the use of multiple performance measures to evaluate the performance of Heads of departments together with the use of limited leadership orientations by their Deans will lower the Heads' of departments job-related tension. This relationship is also expected to be affected by organizational culture. Previous studies have found that when evaluating their subordinates' performance, a leader dealing with multiple performance measures tends to prioritize the measures (Moers, 2005; Ittner et al., 2003a; Lipe and Salterio, 2000). Leaders with limited leadership orientations will see alternatives (including those related to performance expectations) from a narrower perspective (Bolman and Deal, 1991). Therefore, it is reasonable to expect that when Deans use limited leadership orientations, it will be easier for Heads of departments to identify their Deans' focus or priorities and to see how their performance are being evaluated. This is consistent with the emphasis on predictability and stability in a control culture. With this in mind, within a control culture, when multiple performance measures are used by Deans to evaluate Heads' of departments performance and, at the same time, the Deans employ limited leadership orientations, the Heads of departments are expected to experience lower job-related tension.

In contrast, the use of multiple performance measures and limited leadership orientations on Heads of departments in a flexible culture will increase Heads' of departments job-related tension because it is inconsistent with their inclination to be flexible, creative, innovative, and adaptive in their work. Being assessed using multiple performance measures, a Head of department will be satisfied with a multi-orientation Dean who can support him/her achieve performance expectations and maintain his/her cultural values at the same time. Bolman and Deal (2003, p.17) pointed out that multi-

orientation thinking requires movement beyond narrow leadership approaches and, therefore, requires the leaders to develop creativity, risk taking, and flexibility when responding to problems/events. For example, to facilitate creativity and innovation, a leader needs to have the ability to communicate a vision of the work, employ supportive supervision, and show contingent reward behavior (Mumford, 2000; Baer, 1997; Eisenberger and Cameron, 1996). The leader also needs to be skilful in politics to support creative subordinates' need to be politically savvy (i.e. an ability to identify internal and external politics that impact the work of the organization) (Amabile and Gyskiewicz, 1987). This indicates the importance of the use of symbolic, human resource, and political orientations in flexible cultures. Thus, when Deans use limited orientations in their leadership style, their Heads of departments might feel that the Deans do not have sufficient leadership skills to promote the flexible cultures and to increase the department Heads' abilities to deal with the various performance expectations. Therefore, when a flexible culture is dominant and the Deans use multiple performance measures to evaluate Heads of departments, the application of limited leadership orientations by the Deans is expected to increase the levels of job-related tension experienced by the Heads of departments.

The above arguments explained the interaction effects of use of performance measures, use of leadership orientations, and organizational culture on job-related tension when multiple performance measures are used to evaluate Heads of departments. Different interaction effects are also expected when limited performance measures are used. It was hypothesized earlier in section 3.3 that the use of limited performance measures together with multiple leadership orientations will be associated with Heads' of departments lower job-related tension. This relationship is expected to occur within a flexible culture. Being evaluated using restricted performance measures, Heads of departments who have flexible values, may feel that the existing performance measures are not adequate to give complete feedback of their efforts. In this situation, uncertainty exists as relevant aspects of job performance may not be adequately understood. When uncertainty exists, individuals are motivated to seek information/feedback to reduce uncertainty (Kramer, 1999; Morrison, 2002). Morrison

(2002) identified two methods of feedback seeking: direct inquiry and monitoring. Sully de Luque and Sommer (2000) argued that people in a collectivist culture, to avoid too much attention on a person or the group, may prefer indirect enquiry and monitoring. Through monitoring, individuals observe how themselves and the others (e.g. superiors, peers) respond to certain situations (Sully de Luque and Sommer, 2000). Indonesia was found to be shaped by a collectivist orientation (Hofstede, 2001). Thus, it is reasonable to expect that the Heads of departments in this study, when seeking information/feedback about job expectations, will use indirect inquiry methods such as an observation tactic¹¹ that was found to be a critical method by Miller and Jablin (1991). At a faculty level, Deans are the likely targets in the Heads' of departments observation because Deans, as direct supervisors (direct leaders), are expected to serve as the main source for determining job requirements (Miller and Jablin, 1991; Madzar, 2005). Deans with multiple leadership orientations are expected to see options (including job performance) from different perspectives. This is a specific behavior that the Heads of departments (through their observation) may find useful in clarifying how they should perform in their roles in order to get good performance assessments. Thus, the use of restricted performance measures to assess Heads of departments within a flexible culture together with the use of multiple leadership orientations by their Deans will not lead to Heads' of departments higher job-related tension.

In contrast, within a control culture, it is likely that Heads of departments will experience higher job-related tension when limited performance measures and multiple leadership orientations are used by their Deans. Recall that a control culture tends to support the use of limited performance measures as it may be consistent with the emphasis on conformity, stability, and predictability in a control culture. Bolman and Deal (2003) pointed out that when leaders have multi-orientation thinking, they are able to see new possibilities or opportunities enabling them to discover alternatives when options seem restricted. It is argued in this study that within a control culture, where Heads of departments are satisfied with the use of limited performance

¹¹ Observation tactic focuses on targets in order to acquire information about specific attitudes or to model specific behaviors (Miller and Jablin, 1991).

measures, they are less likely to look forward to new alternatives (i.e. performance alternatives) that are possibly indicated by their Deans. These Heads of departments may see these alternatives as unexpected information. Kramer (1999) pointed out that when information is unexpected, it will increase uncertainty instead of reducing it. Thus, Heads' of departments levels of job-related tension is expected to be higher when a control culture is dominant and limited performance measures and more leadership orientations are used by their Deans.

Within a control culture, when limited performance measures are used to evaluate Heads of departments and limited orientations are expressed by their Deans, these Heads of departments are expected to have lower job-related tension. This is because with limited orientations, the Deans are less likely to see new alternatives to the existing set of restricted performance measures. This will make change or modification to the existing performance measures less possible. In addition, leaders with narrow leadership thinking often value certainty, rationality, and control (Bolman and Deal, 2003, p.17). Those values are consistent with the emphasis on conformity and stability within control value organizations.

However, a different situation will occur when a flexible culture is shared by those Heads of departments. As argued earlier in the hypothesis development for hypothesis 3 in section 3.4, Heads of departments in a flexible culture will tend to be dissatisfied when their performance are evaluated using limited performance measures as the information/feedback received from the performance measures may be perceived to be inadequate to reflect all aspects of their work and the values of the flexible cultures. This perception of information inadequacy will lead to fairly high levels of uncertainty (Miller and Jablin, 1991). When Deans use limited leadership orientations, the Deans are unlikely to be able to reduce this uncertainty. In uncertain contexts, a leader's skill, such as *entrepreneurs of identity*, is very important (Cicero et al., 2010). To have this leadership skill, a leader needs to "take action in identifying opportunities, deriving a plan to take advantage of the opportunity, executing the plan, and constantly monitoring and adjusting the plan" (Farmer et al., 2009, p.245). Leaders with limited orientations will be less capable of finding new opportunities compared to leaders with

multiple orientations (Bolman and Deal, 2003). Thus, it is reasonable to expect that when Deans use limited leadership orientations, they have less capacity to become *entrepreneurs*, and, thus, are less able to support their Heads of departments reduce information inadequacy and role uncertainty. This leads us to the expectation that when a flexible culture is dominant, the use of limited performance measures and limited leadership orientations by Deans will increase Heads' of departments job-related tension.

The arguments in this section lead us to the last null hypothesis:

H₀₄: *There is no significant interaction between multiple performance measures use, leadership orientations use and organizational culture affecting job-related tension*

3.6 Summary

The hypotheses developed in this chapter will be tested in Chapter 6. The following chapter outlines the instrument development for one of the independent variables used in this study, the multiple performance measures use.

Chapter 4

4. The Development of the Multiple Performance Measures Use Instrument

4.1 Introduction

This chapter discusses the development of the multiple performance measures use instrument. It provides a full explanation of the procedures used in designing the instrument. The chapter also provides details about how the instrument was modified and tested.

4.2 Procedures used in the Development of Multiple Performance Measures Use Instrument

The instrument development process usually includes four main steps: instrument creation, pre-test and analysis, instrument modification, and instrument validation (Kim et al., 2007; Dwivedi et al., 2006). In the development of the multiple performance measures instrument, this study uses a set of procedures that was drawn from previous studies (Dwivedi et al., 2006; Kim et al., 2007; Detert and Jenni, 2000). The procedures were integrated in this study in an attempt to create a reliable and valid survey instrument. This involves an extensive review of related literature and instruments, identification of constructs, preliminary discussion with colleagues to get feedback on face validity¹², review by independent experts for content validity¹³, pre-testing individual questions using focus groups, pre-test survey, and assessment of reliability of the instrument (see figure 4.1).

¹² Discussions were held to get information on the relevance of potential items and the wording of the questions.

¹³ Content validity is the extent to which measurement scales provide adequate coverage of the investigative questions.

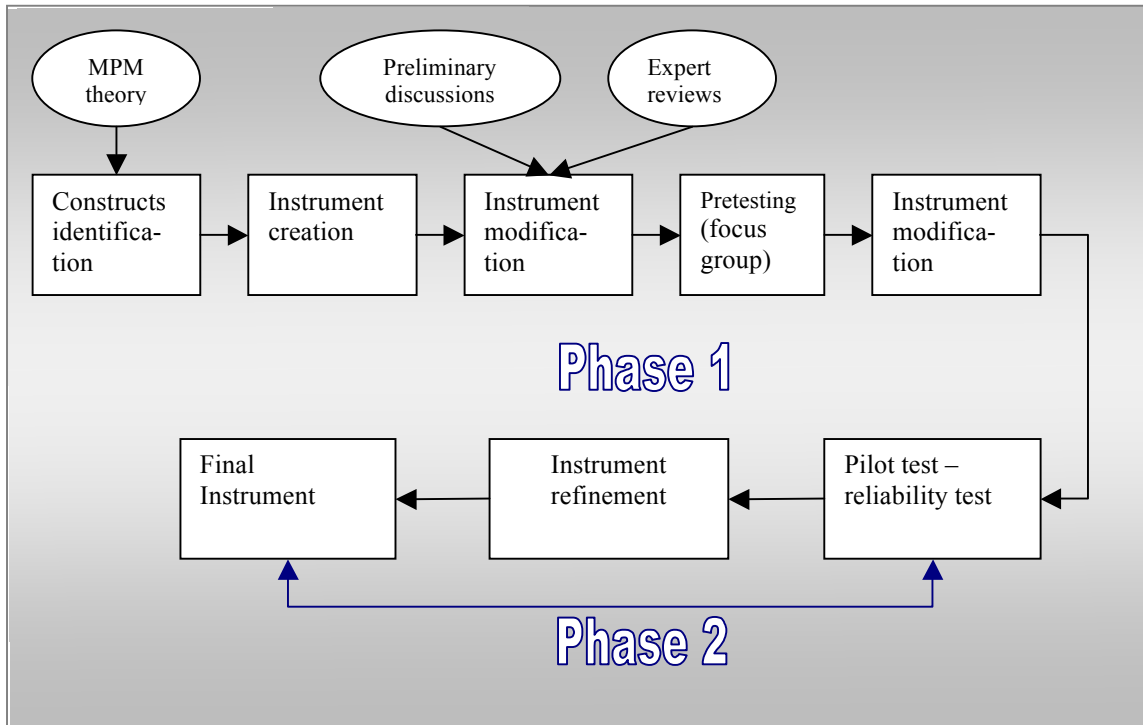


Figure 4.1 Instrument development procedures
 (Adapted from Dwivedi et al., 2006; Kim et al., 2007; Detert and Jenni, 2000)

4.2.1 Phase 1 of the Study

Phase one of the study involves construct identification, instrument creation and modifications, and pre-testing of individual questions. The first modification was made after creating the instrument and the second modification was completed after the pre-testing.

4.2.1.1 Construct Identification

Phase one of this study started by conducting a deep review of the multiple performance measures literature, in both the management accounting and education literature, to identify a construct for multiple performance measures and its dimensions. Kurz et al. (1989) pointed out that faculty performance in higher education

is typically viewed as an *effectiveness construct* in which departmental performance can be conceptualized as the quality or quantity of the department members' behaviors or the degree to which the department's members have accomplished the goals of teaching, research, or service. Department performance can also be viewed from the *resource acquisition perspective*, where a department's performance is defined with regards to resource acquisition needed for teaching, research and service at the university (Kurz et al., 1989). This study adopts these conceptualizations in setting the performance measures for Heads of academic departments into four dimensions: financial, teaching, research, and service. The following section will discuss these performance dimensions and the measures for each dimension.

4.2.1.1.1 Financial Performance

Financial performance has become one of the main concerns in the education sector due to decreasing financial support for educational institutions or financial pressures (Chen et al., 2006; Higgins, 1989). Consequently, in higher education, organizational performance, including school and department performance, has been assessed by including financial measures (income-generating activities measures) as an important criterion (Tapinos et al., 2005; Badri et al., 2005; Papenhausen and Einstein, 2006). It is also argued that in order to support their vision and mission, organizations in this sector, must be aware of their complete financial structure, including resources and budgets, and that without this awareness they will end up performing poorly (Chen et al., 2006).

Chen et al. (2006) argued that financial performance is important to support faculty's facilities, operations, and staff resources - some aspects that are needed to satisfy stakeholders. The important aspects of financial performance have been captured by using measures such as government research grants received (Modell, 2003), international research grants received (Badri and Abdulla, 2004), national/regional/local institution (i.e. non-government) research funding (Uctug and Koksall, 2003; Badri and Abdulla, 2004), internal research grants received from the

university (Badri and Abdulla, 2004), amount of cooperation between education and business (Chen et al., 2006), and meeting the budget (Cullen et al., 2003; Papenhausen and Einstein, 2006).

4.2.1.1.2 Research Performance

Research performance has gained a great deal of attention in recent years. Literature in higher education has shown that colleges and universities most typically measure their research performance by assessing the quantity and quality of research, and that they are considered the most important performance measures (compared to teaching and service performance) for reward/awards and recognition (Seldin 1984 cited in Badri and Abdulla, 2004 and Kurz et al., 1989). Quantity of research has been measured by objective criteria such as number of articles or books (Kurz et al., 1989; Shao et al., 2007). Meanwhile, the quality of research is measured by both objective and subjective criteria. The subjective criteria include measures such as attaining a national reputation (Kurz et al., 1989) and quality judgment by other academics (Shao et al., 2007), whilst the objective criteria include measures such as the number of times the research is cited by other researchers (Kurz et al., 1989; Szeto and Wright, 2003; Uctug and Koksall, 2003; Shao et al., 2007).

4.2.1.1.3 Teaching Performance

Evaluation of teaching performance has been considered an interesting area of research and has been debated for more than eight decades (Shao et al., 2007). With regards to teaching, colleges and universities have focused on teaching quality and student ratings as the most frequently used measures (Kurz et al., 1989). Besides student ratings, teaching performance has been measured by using other subjective measures such as reviews by Chairs/Deans/other senior staff and objective measures such as student grades and number of enrolled students (Kurz et al., 1989; Szeto and Wright, 2003; Cullen et al., 2003; Papenhausen and Einstein, 2006; Shao et al., 2007).

4.2.1.1.4 Service Performance

As previously discussed, the higher education literature has viewed service performance as one of the major objectives of universities' operations (Higgins, 1989; Szeto and Wright, 2003; Shao et al., 2007). Although this area of performance has received the least attention (Szeto and Wright, 2003) and, thus, is considered as the least developed performance dimension (Kurz et al., 1989), this study emphasizes the importance of including service performance in the performance measurement system for higher education because it is also essential to support the sustainability of the university. Related measures used by previous studies include faculty contributions to conferences, seminars, and community service programs (Badri and Abdulla, 2004; Papenhausen and Einstein, 2006; Shao et al., 2007), alumni records and activities (Papenhausen and Einstein, 2006), number of consultancy jobs (Uctug and Koksall, 2003; Al-Turki and Duffuaa, 2003; Badri and Abdulla, 2004; Papenhausen and Einstein, 2006), industrial collaborations (Cave et al., 1995; Al-Turki and Duffuaa, 2003), and activities in professional societies (Szeto and Wright, 2003; Badri and Abdulla, 2004; Shao et al., 2007; Uctug and Koksall, 2003).

4.2.1.2 Creation of Instrument and First Instrument Modification

Following the identification of the performance dimensions, item writing was undertaken. Sixteen questions were proposed for financial performance, 32 questions were identified for teaching performance, and 15 and 14 questions for research and service performance, respectively. The questions (77 in total) were drawn from previous studies, highlighting the work of the following researchers: Chen et al. (2006); Badri and Abdulla (2004); Shao et al. (2007); Szeto and Wright (2003); Cullen et al. (2003); Papenhausen and Einstein (2006); and Uctug and Koksall (2003). Since this instrument will be used to measure the performance of Heads of academic departments in Indonesian higher education institutions, the relevance of the items to the criteria used by the Indonesian National Accreditation Board for Higher Education (Badan Akreditasi Nasional/BAN) was also considered.

The questions were then reviewed resulting in the elimination of certain questions. The preliminary consideration for eliminating a question was whether or not the question was considered essential by previous studies. After this process, a 45-item instrument was proposed with 6, 21, 11, and 7 items for the dimensions of financial, teaching, research, and service performance, respectively. As the instrument was being administered to academics in Indonesian universities, there was a need to translate the instrument into Bahasa Indonesia. The Indonesian version of the questionnaire was then back translated into English by translators from an Indonesian private language institution to test the accuracy of the translation. The translation and back-translation were carried out by independent translators.

The instrument was then reviewed by 11 Indonesian academic experts. The reviewers were identified based on their recognized knowledge of the education sector and experience in managing a university or a faculty (two of them are Rectors and the others are Deans). The reviewers were asked to indicate whether each of the items was essential, useful but not essential, or not necessary. In addition, they also provided suggestions regarding the rewording of the items and the identification of additional items.

Following the review, the instrument was modified in the following manner: some changes were made with the wordings of certain items; some items were eliminated as they were perceived as not being important by the experts; and some questions were added as suggested by most of the experts. The process resulted in 11, 26, 13, and 9 items (total = 59) for the dimensions of financial, teaching, research, and service performance, respectively.

4.2.1.3 Pre-testing and Second Modification of the Instrument

Following reviews by independent experts, pre-testing is an important step in the development of the instrument. The first pre-testing in this study involved a group of

five Heads of academic departments who were asked for their opinions on the meaning of each question. As the Heads of departments primarily agreed with the intended meaning of the questions, no major changes were noted. To achieve the desired interpretation, certain instructions were reworded based on suggestions from the five Heads of departments.

4.2.2 Phase 2 of the Study

The first procedure in phase two of the study is the pilot test, followed by testing the reliability of the instrument. The instrument was then refined based on feedback gathered from respondents in the pilot test.

4.2.2.1 Pilot Test

The pilot test was conducted by distributing questionnaires to 55 Heads of academic departments from thirteen different faculties (see Appendix 1) in 10 private universities in East Java, Indonesia. The respondents were asked to identify the frequency of use of the 59 performance measurement items on a seven-point Likert-type scale (1 = not at all to 7 = to a very great extent). Six questionnaires were omitted from the analyses because the respondents left a sizeable portion of the questionnaire unanswered, which leaves a total of 39 useable questionnaires.

This pilot study was conducted to determine the time required to complete the questionnaire, to ensure that the instructions and questions were understandable, and to facilitate respondents' identification of other performance measures that are important and should be included in the instrument. Some respondents suggested that a minor change needed to be made to improve the understandability of the instructions.

One additional financial performance question (i.e. results of evaluation of internal funding allocation) was considered to be an important additional financial performance measure by most respondents. In general, most of the respondents reported that the

questionnaire was easily understood and required 15 to 20 minutes to complete. The other purpose of the pilot test was to confirm the reliability of the items. The findings obtained from the pilot test indicated a high level of reliability (Cronbach's alpha > 0.9) for all of the performance dimensions (see Table 4.1).

Table 4.1 Results of reliability testing for the four performance dimensions of financial, teaching, research, and service.

Dimensions	Number of items	Cronbach's alpha
Financial	11	0.929
Teaching	26	0.968
Research	13	0.971
Service	9	0.916

4.2.2.2 Final Instrument Refinement

A final re-design of the questionnaire was undertaken by making a minor change to the questionnaire format and the wording of the instructions based on the feedback received. As a result, the final instrument was believed to have a better format and more understandable instructions. The final instrument also included one additional financial measure as suggested by most of the respondents in the pilot test. In total, this instrument consisted of 60 questions: 12 financial performance items, 26 teaching performance items, 13 research performance items and 9 service performance items (see section B of the questionnaire in Appendix 5).

4.3 Summary

This chapter described the two phases of developing an instrument that examines the use of performance measures in higher education. In the first phase of the study, the instrument was created and modified after a comprehensive review of the literature and a review of the instrument by academic experts. This process led to the identification

of questions related to four performance categories, namely, financial, teaching, research, and service. The next step involved a pilot study from which the reliability analysis of the instrument was conducted. The results were satisfying as the Cronbach's alphas ranged between 0.91 and 0.97. After this process, the final instrument refinement was completed. Following these instrument development procedures, a 60-item instrument to measure multiple performance measures use was produced. The next chapter will describe the research methodology including the description of other instruments which were adopted from previous studies.

Chapter 5

5. Research Methodology

5.1 Introduction

This chapter discusses the research method used in this study. It provides a full description of the instruments utilized to obtain the data. The chapter gives details about how the sample was selected and how the data was collected. Lastly, the data analysis techniques used to test the hypotheses of the study are explained.

5.2 Data Collection Method

A mail survey was used to gather data in this study. The questionnaires were mailed to Indonesian private universities identified randomly through the Indonesian Ministry of National Education (2007) database. Self-administered questionnaires were chosen as, with this method, the survey can be conducted by researchers independently (contracts with professional organizations were not required), with lower costs and greater anonymity for respondents (Dillman, 2000; Cooper and Schindler, 2003).

5.2.1 The Sample

Heads of academic departments from Indonesia's 371 private universities was the population of interest. The questionnaires were distributed to fourteen different faculties (see Appendix 2) and the sample was selected using random sampling. Public universities were excluded because it is argued that public universities would have different performance measures and emphasize the measures in different ways compared to private universities. For example, in terms of financial support, approximately 80 to 90 percent of public universities' budgets are financed by the

Indonesian government. Unlike public universities, private universities are operated by foundations and their budgets are almost entirely reliant on tuition fees. If a university had a religious affiliation, some of its costs are covered by donations or grants from international religious organizations (Operation Evaluation Department, 2005). As no budget is allocated for private universities by the Indonesian government, the only financial support they get from the government is in the form of some competitive-based funding awarded only to high performing private universities (Tempo, 2007). With this in mind, it is reasonable to argue that the type of financial measures in public universities would be different and the achievement of financial performance in public universities would not be as important as that in private universities. Therefore, studying performance measures used in both private and public universities at the same time is essentially not feasible.

5.2.2 Questionnaire Administration

An introductory letter requesting access to one Head of Department was sent to the Rector/Dean of the university/faculty (Appendix 3) and a follow-up phone call was made to confirm the Rector/Dean's participation. A questionnaire package, containing a cover letter explaining the importance of the study (Appendix 4), a questionnaire (Appendix 5) and a reply paid envelope, was sent to the Rector's or Dean's representative for distribution to the Department Head. Assurances of confidentiality and anonymity of the responses were provided in the covering letter. Respondents were asked to return the questionnaire directly to the researcher using the stamped, self-addressed envelope provided. Thus, the organization with which the respondent is affiliated will not know how he/she responded. Further, the researcher ensured that the survey will be conducted confidentially and that only aggregated results will be given in any report and/or paper.

5.2.3 Questionnaire Planning

Dillman's (2000) Tailored Design Method¹⁴ was used in designing and distributing the questionnaire. Dillman (2000) suggested that to increase participants' responses and their accuracy, the participants need to *trust* that the expected *rewards* of responding will outweigh the anticipated *costs*. To establish trust, an information letter was given to each respondent, along with the questionnaire. Besides explaining the importance of the survey, the letter informed the respondents that the survey had been approved by the Curtin University Human Research Ethics Committee and was supported by the respondents' superior (i.e. Rector/Dean). In addition, the email address of the researcher was also included in the letter so that the recipient could clarify any problems related to the questionnaire. To reduce respondents' social costs, all respondents were informed that their responses will be kept confidential and anonymous in the information letter.

Dillman (2000) identified *ask for advice* as one of the ways to provide rewards for respondents. In this study, the respondents were asked for their suggestions for any other important performance measures (section B of the questionnaire, Appendix 5). Attention was paid to the selection of the format (visual layout and design) and the ordering of the questions in order to make the questionnaire interesting. Tangible rewards were given by including a pen in each questionnaire package and offering respondents a copy of the results of the study. The questionnaire was proof read to ensure clarity and readability. Added to that, a return stamped and self-addressed envelope was provided to avoid inconvenience.

5.2.4 Follow-up Procedures

A time span of approximately two weeks were given to the respondents to return the questionnaire before follow-up letters were sent via the contact persons or appointed

¹⁴ Tailored Design is the development of survey procedures that create respondent trust and perceptions of increased rewards and reduced costs by being a respondent, which take into account features of the survey situation and have as their goal the overall reduction of survey error (Dillman, 2000, p.27).

persons to distribute to participants. To prevent any identification of participants, the same number of follow up letters was sent as the original number sent.

5.3 Research Instruments

There are five sections in the questionnaire (see Appendix 5). Sections A to C contain measures for the independent variables of leadership orientations use, multiple performance measure use, and organizational culture, respectively. Section D contains measures for the dependent variable, job-related tension. Finally, section E, captures socio-demographic information from the respondents. Each of the instruments is examined in detail below.

5.3.1 Leadership Orientations

Bolman and Deal's (1991) instrument is used in this study to obtain Heads' of departments perceptions of their Deans' leadership orientations. The instrument consists of 32 items indicating the following frames sequence: structural (items 1, 5, 9, 13, 17, 21, 25, and 29), human resource (items 2, 6, 10, 14, 18, 22, 26, and 30), political (items 3, 7, 11, 15, 19, 23, 27, and 31) and symbolic (items 4, 8, 12, 16, 20, 24, 28, and 32). Heads of departments will be asked to indicate the extent to which their Deans exhibit each of the 32 behaviors using a 5-point response scale (1 = never to 5 = always).

As discussed earlier in chapter 2, this instrument has been widely used by researchers from various sectors such as education (Sypawka et al., 2010; MCardle, 2008; Maitra, 2007; Beck-Frazier et al., 2007; Trees, 2006; Thompson, 2000; Kelly, 1997; Bolman and Deal, 1991), government and non-profit organizations (Kubala, 2002; Heimovics et al., 1993), and business (Villanueva, 2003; Seaborne, 2003; Mabey, 2003; Bedore, 1998; Kelly, 1997; Bolman and Deal, 1991).

The fundamental assumption of Bolman and Deal's (1991) theory is that leaders must rely on the four orientations to be fully effective as both managers and leaders; the possession of only one or two orientations will not lead to managerial and leadership effectiveness. The overall score of each orientation will be computed by summing the response to the questions for each orientation. A leadership orientation is used by a Dean when the Dean's score exceeds the mean score for that orientation. The total number of leadership orientations used by the Dean will then be computed (ranging from 0 to 4).

5.3.2 Multiple Performance Measures

As discussed in chapter 4, the instrument to measure multiple performance measures was purpose developed with questions drawn from existing measures such as Shao et al.'s (2007) and Szeto and Wright's (2003). The items were developed to ensure their relevance to the criteria used by the National Accreditation Board for Higher Education (Badan Akreditasi Nasional/BAN) for measuring higher education performance in the following areas: financial, teaching, research and service. This instrument asks respondents to indicate how frequently performance measures are used on a seven-point Likert-type scale (1 = not at all to 7 = to a very great extent). The average score will be used in the analysis. Thus, a higher mean score indicates that the organization uses all of the measures to a greater extent.

5.3.3 Organizational Culture

The instrument measuring flexible and control cultural characteristics was developed for the education setting by the US National Center for Higher Education Management Systems and was used as part of the Institutional Performance Survey (IPS), a national study "whose primary intent was to assess how various institutional conditions were related to an institution's external environment, strategic competence and effectiveness" (Krakower and Niwa, 1985, cited in Lemaster, 2003). This instrument has been used widely in university settings (Poppens, 2000; Zammuto and Krakower,

1991; Cameron and Freeman, 1991; Smart and St.John, 1996) and has been used recently in accounting research (Henri 2006; Bhimani 2003).

The instrument to measure organizational culture was based on Krakower and Niwa's (1985 *cited in* Henri, 2006) institutional survey. This instrument consists of the following four dimensions: institutional character, institutional leader, institutional cohesion, and institutional emphases. For each of the dimensions, the respondent must distribute 100 points among the four sentences where organization A refers to a group culture, organization B refers to a developmental culture, organization C refers to a hierarchical culture, and organization D refers to a rational culture. Then, the specific position of each organization on the control/flexible continuum (i.e. dominant type) will be captured. The dominant-type score will be derived from a cultural-type score and a value score. First, the cultural-type score will be compiled for each culture by averaging the ratings obtained on the four dimensions. Second, the value-score is computed as follow: Flexible-value score = Group-culture score + Developmental culture score; Control-value culture = Hierarchical-culture score + Rational-culture score. Third, the dominant-type score is obtained by subtracting the control-values score from the flexible-values score. A difference score captures the specific position of each organization: a positive score indicates a flexible dominant type, while a negative score indicates a control dominant type.

5.3.4 Job-related Tension

Job-related tension was measured using the 15-item measure developed by the Institute for Social Research at the University of Michigan (see Kahn et al., 1964, pp.424-427). This instrument measures the perceptions of the work context by asking how frequently the respondents feel "bothered" by certain aspects of the work environment (Varca, 1999; Joiner and Bartram, 2004). It was designed to measure various sources of role strain (e.g role conflict, role ambiguity, excessive workload) an individual might experience in the workplace (MacKinnon, 1978, p.322).

This instrument has been widely used by prior studies in the management accounting area (Hopwood, 1972; Otley, 1978; Harrison, 1992; Lau et al., 1995; Ross, 1995; Choo and Tan, 1997; Emsley, 2001, 2003). The 15 items will be based on a five-point Likert scale and will be summed so that a high (low) score indicates high (low) job-related tension.

5.3.5 Socio-demographic Information

Demographics such as gender, age, educational qualification, the country from which the qualification was obtained, accreditation status, number of student, position tenure, organization tenure, and type of faculty were included.

The respondents were asked whether they held a position as a Head of academic department, and whether they held a position as a Dean at the same time. Since this study examines the perception of a Head of department on the leadership orientations used by his/her leader (Dean) it is important to ensure that the respondents did not hold both positions (department Head and Dean).

5.4 Data Analysis Techniques

This section provides a brief description of the data analysis methods used to test the hypotheses developed in Chapter 3. The two methods used are bivariate correlation analysis and multiple regression analysis.

5.4.1 Bivariate Correlation Analysis

This technique is used to discover the nature of the relationships between research variables (Cooper and Schindler, 2003). The correlations coefficient varies over a range of +1, through 0, to -1. The coefficient's sign indicates the direction of the relationship. Using this technique, the researcher wants to reveal the significance of the correlations between multiple performance measures use and job-related tension (i.e. Hypothesis 1).

5.4.2 Multiple Regression Analysis

The main analytical tool to test the hypotheses is multiple linear regression. Multiple regression analysis is generally used to examine the relationships between independent variables and a dependent variable (Hair et al., 1998, p.148).

The regression models for the two-way interactions are:

$$\text{Hypothesis 2: } Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{LO}_i + \beta_3 \text{MPM}_i \text{LO}_i + e \quad (\text{Equation 1})$$

Where :

Y_i = Job-related tension for respondent i, where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i, where $i = 1, \dots, 189$

LO_i = Leadership orientations use for respondent i, where $i = 1, \dots, 189$

e = error term

$$\text{Hypothesis 3: } Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{OC}_i + \beta_3 \text{MPM}_i \text{OC}_i + e \quad (\text{Equation 2})$$

Where :

Y_i = Job-related tension for respondent i, where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i, where $i = 1, \dots, 189$

OC_i = Organizational culture for respondent i, where $i = 1, \dots, 189$

e = error term

The regression model for the three way hypothesis is:

$$\text{Hypothesis 4: } Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{LO}_i + \beta_3 \text{OC}_i + \beta_4 \text{MPM}_i \text{LO}_i + \beta_5 \text{MPM}_i \text{OC}_i + \beta_6 \text{LO}_i \text{OC}_i + \beta_7 \text{MPM}_i \text{LO}_i \text{OC}_i + e \quad (\text{Equation 3})$$

Where :

Y_i = Job-related tension for respondent i, where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i, where $i = 1, \dots, 189$

OC_i = Organizational culture for respondent i, where $i = 1, \dots, 189$

LO_i = Leadership orientations use for respondent i, where $i = 1, \dots, 189$

e = error term

The interpretation of results of the regression analyses will show the relationship of the dependent variable (job-related tension) with the independent variable (multiple performance measures use) and the moderating variables (leadership orientations use and organizational culture). The results will show whether the regression coefficients are individually and/or jointly statistically significant. When testing for statistical significance, the researcher chooses a 5% level of significance (confidence level of 95%).

Additional analysis will be conducted to assess whether the assumptions for regression analyses are met¹⁵. The normal probability plots of standardized residuals will be analyzed to indicate any possibility of violations on normality and linearity. The Variance Inflation Factor (VIF) values will be examined for checking the multicollinearity of variables, while the Park test (Park, 1966) will be utilized to test the homoscedasticity assumption.

5.5 Summary

This chapter has described the instruments, the sample, the data collection methods and the data analyses utilized in this study. The next chapter will present the findings of the data analyses.

¹⁵ Normality, linearity, multicollinearity, and homoscedasticity.

Chapter 6

6. Data Analysis

6.1 Introduction

This chapter presents the results of the data analysis. Firstly, it will report on the response rates of this study. The assessment of the underlying dimensions of the instruments using factor analysis will then be discussed. The next part of the chapter will provide the results of reliability tests. Finally, to clearly understand the body of the data, descriptive statistics will be presented before reporting the results of the hypotheses testing.

6.2 Response Rate

Self-administered questionnaires were mailed to respondents to gather data about participants' perceptions. In this survey, 460 questionnaires were distributed to the Heads of academic departments from fourteen different faculties (see Appendix 1) in 102 Indonesian private universities located in various regions (i.e. Java, Sumatra, Kalimantan, Bali, Nusa Tenggara, Sulawesi)

213 questionnaires from 91 universities were returned to the researcher. This gives a response rate of 46%. Of the 213 responses, 189 of them were usable, as nine respondents did not complete the questionnaire appropriately, five respondents left a significant portion of the questions blank, and 10 respondents did not meet the sample criteria (i.e. not responsible for an academic department within a faculty). As a result, further analyses were carried out on the remaining 189 usable responses.

6.3 Tests for Non-response Bias

A test for non-response bias was used to examine whether responses from non-respondents would have been significantly different from the data collected (Roberts, 1999). Separate t-tests were conducted to examine the significance of mean score differences between the early respondents (who responded before the follow-up procedures) and the late respondents (who returned the questionnaires after the follow-up procedures) on each of the scales administered. The t-test results are insignificant (see Appendix 6). Therefore, non-response bias is unlikely to be a significant issue in this study.

6.4 Factor Analyses, Reliability Tests and Descriptive Statistics of the Variables

This section presents results of the factor analyses and Cronbach's alphas (Cronbach, 1951) followed by the descriptive statistics for each variable. Firstly, the result of the factor analysis for each instrument is presented. The purpose of factor analysis is to assess whether the data meets the expected structure indicated by prior research (Hair et al., 1998). Using this approach, the researcher wishes to address issues such as which responses should be grouped together on a factor, or the precise number of factors. To increase the comparability of the results, Principal Component Analysis/PCA (with varimax rotation and eigen values of >1) will be used as this method has been used by prior studies examining the factor structure of job-related tension (Wooten et al., 2010) and the factor loadings of leadership orientations use instrument (Bolman and Deal, 1991, 1992). Loadings that are 0.50 or greater are accepted as they are considered practically significant¹⁶ (Hair et al., 1998).

¹⁶ Hair et al. (1998, p. 111) have noted, 'factor loadings greater than 0.30 are considered to meet the minimal level; loadings of 0.40 are considered more important; and if the loadings are 0.50 or greater, they are considered practically significant'.

Cronbach's alphas (Cronbach, 1951) are given, where possible, to provide an assessment of internal reliability. The generally agreed upon lower limit for Cronbach's alpha is 0.70, although it may be decreased to 0.60 in exploratory research (Nunnally, 1978).

Lastly, a descriptive statistical summary is presented. The objective of descriptive statistical analysis is to develop sufficient knowledge to describe a body of data. This includes the understanding of the data levels, their distributions, and characteristics of location, spread and shape. In addition, this analysis enables effective discovery of miscoded values, missing data, and other problems in the dataset (Cooper and Schindler, 2003). In this study, descriptive statistical summary is used to describe the range of respondent scores and the mean scores of perceptions of multiple performance measures use, leadership orientations use, organizational culture, and job-related tension. In the following sections, the results of factor analyses, reliability tests and descriptive statistics for the dependent variable of job-related tension is first presented, followed by the independent variables of multiple performance measures use, leadership orientations use, and organizational culture.

6.4.1 Job-related Tension

Job-related tension was measured using the 15-item measure developed by the Institute for Social Research at the University of Michigan (see Kahn et al., 1964, pp. 424-427), which has been widely used by prior studies in the management accounting area (Hopwood, 1972; Otley, 1978; Harrison, 1992; Lau et al., 1995; Ross, 1995; Choo and Tan, 1997; Emsley, 2001, 2003).

A factor analysis of the 15 items revealed four factors. The four factors reflect the job-related tension dimensions of work overload (items 4, 5, 6, 13, and 15), ambiguity concerning effective performance (items 3, 7, and 8), interpersonal conflict (items 9, 10, and 11), and ambiguity concerning responsibility and authority (items 1 and 2) (see Appendix 5, Section D, for job-related tension items). These factors revealed patterns

that are in line with findings of previous studies (Snoek, 1966; MacKinnon, 1978; Rogers et al., 1994; Wooten et al., 2010). For three of the factors (i.e. work overload, ambiguity concerning effective performance, and ambiguity concerning responsibilities and authority), the item loadings are consistent with MacKinnon’s (1978), Rogers et al.’s (1994), and Wooten et al.’s (2010) findings. Two items (i.e. item 12 and 14) were excluded from the further analyses as their loadings in the factor analysis were low (below 0.5). The result of factor analysis of job-related tension is presented in Table 6.1.

Table 6.1 Rotated component matrix for job-related tension

Variable	Factor			
	1	2	3	4
JRT4	.709			
JRT15	.690			
JRT5	.672			
JRT13	.656			
JRT6	.653			
JRT7		.807		
JRT8		.733		
JRT3		.692		
JRT10			.772	
JRT9			.751	
JRT11			.651	
JRT1				.814
JRT2				.626
Variance explained				62.728

The reliability analyses of the four job-related tension and the descriptive statistics are shown in Table 6.2. The Cronbach alphas were within an acceptable range (Nunnally, 1978). The items in each dimension were summed so that a high (low) score indicates high (low) levels of job-related tension.

Table 6.2 Descriptive statistics and Cronbach's alpha for job-related tension

	Mean	Standard Deviation	Actual Range		Theoretical Range		Cronbach's alpha
			Min	Max	Min	Max	
Work Overload	13.280	3.558	5	25	5	25	0.756
Ambiguity – Performance	7.804	2.389	3	14	3	15	0.691
Interpersonal Conflict	7.555	2.016	3	12	3	15	0.650
Ambiguity – Responsibility and Authority	5.518	1.645	2	10	2	10	0.620

6.4.2 Multiple Performance Measures Use

The instrument to measure multiple performance measures use was purpose developed based on previous studies (Chen et al., 2006; Badri and Abdulla, 2004; Shao et al., 2007; Szeto and Wright, 2003; Cullen et al., 2003; Papenhausen and Einstein, 2006; Uctug and Koksall, 2003). The questions were adapted to ensure their relevance to the criteria used by the Indonesian National Accreditation Board for Higher Education (Badan Akreditasi Nasional/BAN) for measuring higher education performance in the following areas: financial, teaching, research and service. The final instrument used in this study consisted of 60 performance measures (financial = 12 items, teaching = 26 items, research = 13 items, and service = 9 items) (see Chapter 4 for the instrument development and Appendix 5, Section B, for multiple performance measures items). This instrument asks for the frequency of use of performance measures on a seven-point Likert-type scale (1 = not at all to 7 = to a very great extent).

A factor analysis was used to determine whether the variables could be explained by distinct underlying theoretical constructs (Smith et al., 1993). A total of eight factors with eigenvalues greater than 1.0 were extracted from the sample. Close assessment of the factors did not reveal patterns consistent with the initial four-factor model and the

interpretation of most of the resulting factors was found to be difficult. To ensure factor subscales of high reliability, items were retained if they loaded at 0.5 or higher (Smith et al., 1993) and their inclusions were interpretable. After this process, four factors were produced.

Careful assessment of the four factors revealed patterns consistent with the proposed performance criteria except for service performance. The first factor consisted of 20 teaching performance items and one service performance item namely 'Student satisfaction level with school's administration services'. This factor represents the teaching performance dimension. As most administrative activities are conducted to support the teaching and learning process, it is not surprising to find this measure under teaching performance.

The 13 research performance questions together with two service performance items namely 'industrial collaboration' and 'activities in professional societies (council member, journal editor, etc)' loaded on one factor. This factor can be interpreted as the dimension of research performance measures. In this study, respondents are likely to see industrial collaboration and activities in professional societies as part of research activities. The loadings of the those service items in the research performance dimension are understandable considering that industrial collaboration can exist in terms of research collaborations and professional activities could involve research-related activities such as journal reviewing and editing.

The third factor includes nine financial performance items. A close assessment of those items reveals that the items measure the performance in gaining funding from external sources. Thus, it undoubtedly represents an external funding performance dimension. The last factor consisted of three financial items that reflect performance in gaining internal funding. In brief, the four factors were named teaching performance, research performance, external funding and internal funding. The total variance explained by the four factors was 64.44% and the Cronbach's alphas varied between 0.83 and 0.96.

Table 6.3 Rotated component matrix for multiple performance measures

Variable	Factor			
	1	2	3	4
TEACH20	.834			
TEACH19	.831			
TEACH11	.823			
TEACH8	.815			
TEACH9	.796			
TEACH25	.777			
TEACH7	.769			
TEACH22	.767			
TEACH12	.765			
TEACH13	.765			
TEACH24	.760			
TEACH26	.742			
TEACH21	.739			
TEACH10	.717			
TEACH2	.690			
SERV7	.674			
TEACH5	.660			
TEACH1	.646			
TEACH23	.632			
TEACH15	.619			
TEACH18	.617			
RES11		.797		
RES10		.777		
RES6		.770		
RES5		.759		
RES1		.755		
RES7		.728		
RES12		.727		
RES13		.724		
RES2		.722		
RES9		.708		
SERV6		.704		
SERV5		.699		
RES8		.697		
RES4		.674		
RES3		.550		
FIN11			.805	
FIN8			.797	
FIN10			.762	
FIN12			.760	
FIN9			.749	
FIN2			.686	
FIN3			.643	
FIN1			.569	
FIN5			.530	
FIN6				.770
FIN7				.702
FIN4				.559
Variance explained				64.44

The above table (Table 6.3) presents an analysis of the four performance factors with factor loading values, variables, and percentage of variance explained. The descriptive statistics and Cronbach's alphas for each performance dimension and total multiple performance measures use are shown in Table 6.4. The average score of each performance dimension was computed. Thus, a higher total mean score indicates that the organization uses more performance measures to a greater extent.

Table 6.4 Descriptive statistics and Cronbach's alpha for multiple performance measures

	Mean	Standard Deviation	Actual Range		Theoretical Range		Cronbach's alpha
			Min	Max	Min	Max	
Teaching	110.77	24.54	37	147	21	147	0.969
Research	60.77	22.19	15	105	15	105	0.957
External funding	32.33	13.26	9	63	9	63	0.909
Internal funding	14.47	4.85	3	21	3	21	0.836
Multiple perf. measures use	218.4	52.9	74	329	60	420	

6.4.3 Leadership Orientations Use

Bolman and Deal's (1991) instrument was used in this study to obtain Heads' of departments perceptions of their Deans' leadership orientations. The instrument consists of 32 items (see Appendix 5, section A, for leadership orientation items) that contain eight measures for each of the following four orientations: structural, human resource, political and symbolic. Heads of departments were asked to indicate the extent to which their Deans exhibit each of the 32 behaviors using a five-point Likert-scale (1 = never to 5 = always).

Initially, factor analysis carried out for the 32-item leadership orientation produced five factors. Four items (i.e. items 3, 4, 8, and 12) were eliminated because of poor

loadings. The remaining 28 items loaded onto four factors. The last three factors correspond to Bolman and Deal's (1991) orientations: structural, human resource, and political orientation. The structural orientation factor consists of four structural items (items 5, 21, 25, and 29), two symbolic items (items 20 and 28) and one human resource item (item 26).

The loading of symbolic orientation item 20 (communicate a strong and challenging vision and sense of mission) and item 28 (generates loyalty and enthusiasm) and human resource orientation item 26 (gives personal recognition for work well done) onto the structural factor may reflect the multiple objectives of the leaders' behaviors (Yukl et al., 2002). In this sense, leaders' symbolic behaviors may reflect concern for objectives related to both symbolic and structural orientations. The result shows that the two symbolic items primarily reflect the structural orientation. This may indicate that the Deans' main aims in communicating vision and mission as well as in generating loyalty and enthusiasm are related to his/her concern for goals/results (structural orientation).

Similarly, the Deans' efforts to give personal recognition for work well done may reflect objectives related to both human resource and structural orientations. From the result, it seems that the primary concern was on the objectives relevant to the structural orientation. In this sense, Deans' recognition of Heads' of departments good work reflects their focus on the achievement of established goals and objectives (structural orientation).

Human resource items consist of six human resource items (items 2, 6, 10, 18, 22, and 30) and political orientation includes six political items (items 7, 11, 19, 27, 31, and 23) and two symbolic items (items 24 and 32). Symbolic orientation item 24 (sees beyond current realities to create exciting new opportunities) and item 32 (serves as an influential model of organizational aspiration and values) possibly loaded on the political orientation factor because the respondents see these symbols as a way to influence and power (Bolman and Deal, 1992).

After careful assessment, the first factor is labeled as logical decision making orientation (items 1, 9, 13, 14, 15, 16, and 17) as it reflected leaders' logical decision making role. The naming of this factor is in line with the taxonomy of leader roles produced by Mintzberg (1975) as discussed earlier in Chapter 2. The total variance explained by the four factors was 61.043% and the Cronbach's alphas varied between 0.86 and 0.89. An analysis of the four leadership orientations with loading values, variables, and percentage of variance explained, is shown in Table 6.5.

6.5 Rotated component matrix for leadership orientations use

Variable	Factor			
	1	2	3	4
STR17	.688			
STR9	.659			
STR1	.601			
POL15	.575			
STR13	.572			
SYM16	.561			
HR14	.557			
SYM28		.716		
HR26		.643		
STR25		.613		
STR21		.608		
STR29		.597		
SYM20		.595		
STR5		.541		
HR2			.764	
HR10			.758	
HR18			.737	
HR6			.632	
HR22			.560	
HR30			.508	
POL23				.746
POL19				.695
SYM32				.670
POL7				.622
POL31				.618
POL27				.604
SYM24				.530
POL11				.521
Variance explained				61.043

The descriptive statistics and Cronbach's alphas for each leadership orientation are shown in Table 6.6. The overall score of each orientation was computed by summing

the response to the questions for each orientation. A leadership orientation is used by a Dean when the Dean's score exceeds the mean score for that orientation. The total number of leadership orientations used by the Dean was then computed (ranging from 0 to 4).

Table 6.6 Descriptive statistics and Cronbach's alpha for leadership orientations

	Mean	Standard Deviation	Actual Range		Theoretical Range		Cronbach's alpha
			Min	Max	Min	Max	
Logical Decision making	26.349	5.035	13	35	7	35	0.891
Structural	25.301	5.301	9	35	7	35	0.874
Human Resources	23.037	4.434	11	30	6	30	0.867
Political	27.259	5.778	8	30	8	40	0.873

As shown in Table 6.7, more than fifty percent of the respondents perceived that their leaders used logical decision making and political orientations followed by structural and human resource orientations respectively.

Table 6.7 Percentage of leadership orientation used by respondents

	Number of respondents	%
Logical Decision making	105	55.6
Structural	93	49.2
Human Resources	90	47.6
Political	101	53.4
Total respondents	189	

While the number of respondents reporting that their leaders do not utilize any leadership orientations is similar to those who see their leaders use all of the four orientations, around fifteen percent of them identified the use of one to three leadership orientations by their leaders (see Table 6.8).

Table 6.8 Number of leadership orientations used by respondents

No of orientations used	Number of respondents	%
0	46	24.3
1	32	16.9
2	30	15.9
3	27	14.3
4	54	28.6
Total respondents	189	100%

6.4.4 Organizational Culture

In this study, the instrument used to measure flexible versus control culture was based on Krakower and Niwa's (1985 cited in Henri, 2006) institutional survey (see Appendix 5, section C). This instrument consists of the following four dimensions: institutional character, institutional leader, institutional cohesion, and institutional emphases. For each of the dimensions, the respondent must distribute 100 points among the four sentences where organization A refers to a group culture, organization B refers to a developmental culture, organization C refers to a hierarchical culture, and organization D refers to a rational culture.

The specific position of each organization on the control/flexible continuum (i.e. dominant type) was then calculated. The dominant-type score was derived from a cultural-type score and a value score. First, the cultural-type score was compiled for

each culture by averaging the ratings obtained on the four dimensions. Second, the value-score is computed as follows: Flexible-value score = Group-culture score + Developmental culture score; Control-value culture = Hierarchical-culture score + Rational-culture score. Third, the dominant-type score was obtained by subtracting the control-values score from the flexible-values score. A difference score captures the specific position of each organization: a positive score indicates a flexible dominant type, while a negative score indicates a control dominant type. 65.1% of the respondents reported the flexible culture dominant whilst 31.7% of them reported the control culture dominant, 3.2% of them reported having no dominant culture.

6.5 Results of the Hypotheses Testing

The hypotheses to be tested in this research involved three independent variables, namely multiple performance measures use, leadership orientations use, and organizational culture, and the dependent variable, job-related tension. The theory supporting the hypotheses was presented in Chapter 3.

The correlation between multiple performance measures use and job-related tension will be tested. The hypothesis, stated in a null form, is:

H₀₁: *There is no significant negative correlation between multiple performance measures use and job-related tension.*

The two-way interaction hypotheses to be tested, stated in their null form, are:

H₀₂: *There is no significant interaction between leadership orientations use and multiple performance measures use affecting job-related tension.*

H₀₃: *There is no significant interaction between organizational culture and multiple performance measures use affecting job-related tension.*

The three-way interaction hypothesis to be tested, stated in its null form, is:

H₀₄: *There is no significant interaction between multiple performance measures use, leadership orientations use and organizational culture affecting job-related tension.*

6.5.1 Regression Model

Bivariate correlation analysis was used to test hypothesis one. The analytical tool to test the two-way and the three-way hypotheses was multiple linear regression. This is a statistical technique used to examine the relationship between a single dependent variable and several dependent variables (Hair et al., 1998, p.148).

The two-way interaction was tested using a regression model of the following form:

Hypothesis 2:

$$Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{LO}_i + \beta_3 \text{MPM}_i \text{LO}_i + e \quad (\text{Equation 1})$$

Where :

Y_i = Job-related tension for respondent i , where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i , where $i = 1, \dots, 189$

LO_i = Leadership orientations use for respondent i , where $i = 1, \dots, 189$

e = error term

Hypothesis 3:

$$Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{OC}_i + \beta_3 \text{MPM}_i \text{OC}_i + e \quad (\text{Equation 2})$$

Where :

Y_i = Job-related tension for respondent i , where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i , where $i = 1, \dots, 189$

OC_i = Organizational culture for respondent i , where $i = 1, \dots, 189$

e = error term

The question of whether or not there was a two-way interaction effect affecting job-related tension was tested by determining whether β_3 , the coefficient of the interaction term in the above equations, was significantly different from zero ($p < 0.05$).

The three-way interaction was tested using a regression model of the following form:

$$\text{Hypothesis 4: } Y_i = \beta_0 + \beta_1 \text{MPM}_i + \beta_2 \text{LO}_i + \beta_3 \text{OC}_i + \beta_4 \text{MPM}_i \text{LO}_i + \beta_5 \text{MPM}_i \text{OC}_i + \beta_6 \text{LO}_i \text{OC}_i + \beta_7 \text{MPM}_i \text{LO}_i \text{OC}_i + e \quad (\text{Equation 3})$$

Where :

Y_i = Job-related tension for respondent i , where $i = 1, \dots, 189$

MPM_i = Multiple performance measures use for respondent i , where $i = 1, \dots, 189$

OC_i = Organizational culture for respondent i , where $i = 1, \dots, 189$

LO_i = Leadership orientations use for respondent i , where $i = 1, \dots, 189$

e = error term

The three-way interaction hypothesis of multiple performance measures use, leadership orientations use, and organizational culture was tested for statistical significance. The hypothesis is rejected if β_7 is significantly different from zero ($p < 0.05$). The following sections present the test for the regression assumptions followed by the results of the hypotheses testing.

6.5.2 Testing the Assumptions of Linear Regression

Additional analyses were conducted to ensure that the assumptions for regression analyses were met. To see whether the residuals follow a normal distribution, the histogram and normal curve of each variable were assessed. For all variables except one job-related tension dimension (i.e. ambiguity concerning performance), the histogram of residuals portrayed a normal distribution and showed no visual evidence of skewness and heavy-tailed distributions. The job-related tension dimension of

ambiguity concerning performance was transformed by taking the square root of its score to ensure that the data was normal.

Through regression analyses, the results of collinearity diagnostics indicate that there was a problem related to the multicollinearity of the variables. The value of Variance Inflation Factor (VIF) can be used to determine whether the independent variables have an acceptable degree of multicollinearity (Hair et al., 1998). High VIF values denote high multicollinearity. A common cut-off threshold is a VIF value of 10 (Hair et al., 1998). To overcome the multicollinearity found in this study, the variable multiple performance measures use was computed using the variable's centered scores (Aiken and West, 1991; Kline, 1998).

Cohen et al. (2003, p.266) recommended the centering of all predictors before they are entered into regression analysis containing interactions to produce meaningful interpretations of each first-order regression coefficient in the regression equation and to eliminate multicollinearity. There is one exception to this recommendation: if a predictor has a meaningful zero point, then the researcher may wish to keep the predictor in an uncentered form (Cohen et al., 2003, p.266). Since leadership orientations use and organizational culture have a meaningful value of zero (i.e. zero leadership orientations use means a leader is perceived to use none of the four leadership orientations and zero organizational culture means the organization is perceived to have no dominant culture), only the variable multiple performance measures use was centered before being entered into the regression equations. This process resulted in all independent variables having a VIF value less than 3.1.

The Park test (Park, 1966) was used to test the homoscedasticity assumption and the residual scatterplots were examined to check the linearity assumption. The results of these processes indicate that the data satisfies the assumptions of multiple regression methodology. The detailed results of the tests on the assumptions of the linear regression are presented in Appendix 7.

6.5.3 Hypothesis 1: The Correlations between Multiple Performance Measures Use and Job-related Tension Dimensions

This study hypothesized that multiple performance measures use is negatively correlated with job-related tension. Since four job-related tension dimensions were found in this study (i.e. work overload, ambiguity concerning performance, interpersonal conflict, and ambiguity concerning responsibilities and authority), the Pearson correlation analysis was conducted for each of the job-related tension dimensions and multiple performance measures use. The results reveal significant negative correlations between all job-related tension dimensions except work overload and multiple performance measures use (see Table 6.9). Thus, the first null hypothesis is rejected for all job-related tension dimensions except for work overload.

Table 6.9 Correlations between multiple performance measures use and job-related tension dimensions

Job-related tension dimensions	Multiple performance measures use
Work Overload	Pearson Correlation -0.131 , sig. 0.073
Ambiguity Concerning Performance	Pearson Correlation -0.272, sig. 0.000**
Interpersonal Conflict	Pearson Correlation -0.161, sig. 0.027*
Ambiguity Concerning Responsibility & Authority	Pearson Correlation -0.376, sig. 0.000**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

6.5.4 Hypothesis 2: The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension

As stated earlier, the second hypothesis to be tested is how the interaction between multiple performance measures use and leadership orientations use is associated with job-related tension. As there are four dimensions for the job-related tension variable, four regression analyses were conducted. These hypotheses were tested by determining whether β_3 in regression equation one was significantly different from zero.

6.5.4.1 The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimension of Work Overload

Table 6.10 presents the results of testing the two-way interaction hypothesis between multiple performance measures use and leadership orientations use on job-related tension dimension of work overload. The results showed an adjusted R square figure of 0.040 ($df = 3$) and the model was significant at a 5% level of significance ($F = 3.581, p = 0.015$). The second null hypothesis for work overload can be rejected as β_3 was statistically significant ($t = -2.000, p = 0.047$).

Table 6.10 Results of estimating the two-way interaction between multiple performance measures use and leadership orientations use on work overload

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	14.198	.473	30.029	.000
MPM use	β_1	-.083	.090	.921	.358
LO use	β_2	-.318	.188	-1.695	.092
(MPM Use) (LO use)	β_3	-.075	.037	-2.000	.047
R ² = 0.055, Adjusted R ² = 0.040, n = 189, F = 3.581, Sig. = 0.015					

6.5.4.2 The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimension of Ambiguity concerning Performance

The results of examining the two-way interaction hypothesis between multiple performance measures use and leadership orientations use on ambiguity concerning performance are presented in Table 6.11. The adjusted R square of the model explains 12.6 percent of the variance and the model was statistically significant ($F = 10.035, p = 0.000$). However, β_3 was not statistically significant ($t = 0.466, p = 0.642$), and as such the second null hypothesis for job-related tension dimension of ambiguity concerning performance cannot be rejected.

Table 6.11 Results of estimating the two-way interaction between multiple performance measures use and leadership orientations use on ambiguity concerning performance

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	2.921	.054	53.630	.000
MPM use	β_1	-.015	.010	-1.487	.139
LO use	β_2	-.081	.022	-3.760	.000
(MPM use) (LO use)	β_3	.002	.004	.466	.642
R ² = 0.140, Adjusted R ² = 0.126, n = 189, F = 10.035, Sig. = 0.000					

6.5.4.3 The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimension of Interpersonal Conflict

Table 6.12 presents the results of testing the two-way interaction hypothesis between multiple performance measures use and leadership orientations use on interpersonal conflict. β_3 was not statistically significant ($t = 0.301, p = 0.764$) and, thus, the second null hypothesis for interpersonal conflict cannot be rejected. Furthermore, the model was not significant ($F = 2.106, p = 0.101$), which indicates that the variables do not explain the changes in the dependent variable (interpersonal conflict).

Table 6.12 Results of estimating the two-way interaction between multiple performance measures use and leadership orientations use on interpersonal conflict

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	7.788	.271	28.730	.000
MPM use	β_1	-.061	.052	-1.190	.235
LO use	β_2	-.124	.108	-1.151	.251
(MPM use) (LO use)	β_3	.006	.021	.301	.764
R ² = 0.033, Adjusted R ² = 0.017, n = 189, F = 2.106, Sig. = 0.101					

6.5.4.4 The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimension of Ambiguity concerning Responsibility and Authority

The results of examining the two-way interaction hypothesis between multiple performance measures use and leadership orientations use on ambiguity concerning responsibility and authority are presented in Table 6.13. The adjusted R square of the model explains 14.1 percent of the variance and the model was statistically significant ($F = 11.297, p = 0.000$). β_3 was not statistically significant ($t = -0.361, p = 0.718$) and, therefore, the second null hypothesis for ambiguity concerning responsibility and authority cannot be rejected.

In summary, a significant interaction effect of multiple performance measures use and leadership orientations use was only found only for the job-related tension dimension of work overload. Thus, the null hypothesis can only be rejected for that job-related tension dimension.

Table 6.13 Results of estimating the two-way interaction between multiple performance measures and leadership orientations use on ambiguity concerning responsibility and authority

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	5.814	.207	28.113	.000
MPM use	β_1	-.103	.039	-2.613	.010
LO use	β_2	-.133	.082	-1.624	.106
(MPM use) (LO use)	β_3	-.006	.016	-.361	.718
R ² = 0.155, Adjusted R ² = 0.141, n = 189, F = 11.297, Sig. = 0.000					

6.5.5 Hypothesis 3: The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension

The third hypothesis to be tested is how the interaction between multiple performance measures use and organizational culture is associated with job-related tension. As there

are four dimensions for the job-related tension variable, four regression analyses were conducted. These hypotheses were tested by determining whether β_3 in regression equation two was significantly different from zero.

6.5.5.1 The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimension of Work Overload

Table 6.14 presents the results of testing the two-way interaction hypothesis between multiple performance measures use and organizational culture on work overload. The results showed that the model was not statistically significant at a 5% level of significance ($F = 2.506$ $p = 0.06$). Furthermore, β_3 was also not statistically significant ($t = -0.012$, $p = 0.990$). Therefore, the third null hypothesis for work overload cannot be rejected.

Table 6.14 Results of estimating the two-way interaction between multiple performance measures use and organizational culture on work overload

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	13.432	.273	49.188	.000
MPM use	β_1	-.078	.060	-1.301	.195
Org.Cult.	β_2	-.014	.007	-2.044	.042
(MPM use)(Org.Cult)	β_3	-1.883E-5	.002	-.012	.990
R ² = 0.039, Adjusted R ² = 0.023, n = 189, F = 2.506, Sig. = 0.060					

6.5.5.2 The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimension of Ambiguity concerning Performance

The results of examining the two-way interaction hypothesis between multiple performance measures use and organizational culture on ambiguity concerning performance are presented in Table 6.15. Although the adjusted R square of the model explains only 8.5 percent of the variance, the model was statistically significant

($F = 6.802$, $p = 0.000$). The third null hypothesis for ambiguity concerning performance cannot be rejected because β_3 was not statistically significant ($t = -0.835$, $p = 0.405$).

Table 6.15 Results of estimating the two-way interaction between multiple performance measures use and organizational culture on ambiguity concerning performance

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	2.785	.032	87.229	.000
MPM Use	β_1	-.021	.007	-2.985	.003
Org.Cult.	β_2	-.002	.001	-2.204	.029
(MPM use)(Org.Cult)	β_3	.000	.000	-.835	.405
R ² = 0.099, Adjusted R ² = 0.085, n = 189, F = 6.802, Sig. = 0.000					

6.5.5.3 The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimension of Interpersonal Conflict

Table 6.16 presents the results of testing the two-way interaction hypothesis between multiple performance measures use and organizational culture on interpersonal conflict. The results showed that the model was not statistically significant at a 5% level of significance ($F = 2.332$ $p = 0.076$). Furthermore, β_3 was not statistically significant ($t = -0.415$, $p = 0.679$), and thus the third null hypothesis for interpersonal conflict cannot be rejected.

Table 6.16 Results of estimating the two-way interaction between multiple performance measures use and organizational culture on interpersonal conflict

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	7.627	.155	49.207	.000
MPM use	β_1	-.058	.034	-1.695	.092
Org.Cult.	β_2	-.006	.004	-1.403	.162
(MPM use)(Org.Cult)	β_3	.000	.001	-.415	.679
R ² = 0.036, Adjusted R ² = 0.021, n = 189, F = 2.332, Sig. = 0.076					

6.5.5.4 The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimension of Ambiguity concerning Responsibility and Authority

The results of examining the two-way interaction hypothesis between multiple performance measures use and organizational culture on the job-related tension dimension of ambiguity concerning responsibility and authority are presented in Table 6.17. The adjusted R square of the model explains 13.1 percent of the variance and the model was statistically significant ($F = 10.479$, $p = 0.000$). The third null hypothesis for ambiguity concerning responsibility and authority cannot be rejected as β_3 was not statistically significant ($t = -0.561$, $p = 0.575$).

Table 6.17 Results of estimating the two-way interaction between multiple performance measures use and organizational culture on ambiguity concerning responsibility and authority

Variable	Coefficient	Value	Std. Error	t	p
Intercept	β_0	5.555	.119	46.631	.000
MPM use	β_1	-.128	.026	-4.871	.000
Org.Cult.	β_2	-.002	.003	-.728	.468
(MPM use)(Org.Cult)	β_3	.000	.001	-.561	.575
R ² = 0.145, Adjusted R ² = 0.131, n = 189, F = 10.479, Sig. = 0.000					

The results of the regression analyses conducted to test the interaction effect of multiple performance measures use and organizational culture on each of the four job-related tension dimensions indicated no significant effect. Thus, the third null hypothesis cannot be rejected for all job-related tension dimensions.

6.5.6 Hypothesis 4: The Interaction Effect of Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on Job-related Tension

It was hypothesized in Chapter 3 that multiple performance measures use, leadership orientations use, and organizational culture would interact to affect job-related tension. As there are four dimensions for the job-related tension variable, four regression analyses were conducted. To test the hypothesis, the three-way interaction model (regression equation 3) was estimated. The hypothesis was tested by determining whether β_7 in the three way interaction equation was significantly different from zero.

6.5.6.1 The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on the Job-related Tension Dimension of Work Overload

Table 6.18 presents the results of testing the three-way interaction hypothesis between multiple performance measures use, leadership orientations use, and organizational culture on work overload. Although the adjusted R square of the model explains only 4.5% of the variance, the model was significant ($F = 2.275, p = 0.030$). However, the three-way interaction hypothesis for work overload cannot be rejected as β_7 is not significant ($t = 0.530, p = 0.596$).

Table 6.18 Results of estimating the three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture on work overload

Variable	Coeff.	Value	Std. Error	t	p
Intercept	β_0	14.168	.487	29.120	.000
MPM use	β_1	.087	.093	.933	.352
LO use	β_2	-.204	.200	-1.024	.307
Org. Cult.	β_3	-.004	.011	-.369	.713
(MPM use)(LO use)	β_4	-.084	.042	-1.969	.051
(MPM use)(Org.Cult)	β_5	.000	.002	.119	.906
(LO use)(Org.Cult)	β_6	-.006	.005	-1.121	.264
(MPM use)(Org.Cult)(LO use)	β_7	.001	.001	.530	.596
R ² = 0.081, Adjusted R ² = 0.045, n = 189, F = 2.275, Sig. = 0.030					

6.5.6.2 The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on Job-related Tension Dimension of Ambiguity concerning Performance

The results of examining the three-way interaction hypothesis between multiple performance measures use, leadership orientations use, and organizational culture on ambiguity concerning performance are presented in Table 6.19. The results showed an adjusted R square figure of 0.145 (df = 7) and the model is significant ($F = 5.541, p = 0.000$). β_7 was significant at a moderate level ($t = -1.766, p = 0.079$), thus, the three way interaction hypothesis for ambiguity concerning performance can be rejected only at a 10% level of significance.

Table 6.19 Results of estimating the three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture on ambiguity concerning performance

Variable	Coeff.	Value	Std. Error	t	p
Intercept	β_0	2.928	.056	52.651	.000
MPM use	β_1	-.014	.011	-1.301	.195
LO use	β_2	-.081	.023	-3.540	.001
Org. Cult.	β_3	-.002	.001	-1.602	.111
(MPM use)(LO use)	β_4	.006	.005	1.211	.227
(MPM use)(Org.Cult)	β_5	-3.93E-6	.000	-.017	.987
(LO use)(Org.Cult)	β_6	.001	.001	1.029	.305
(MPM use)(Org.Cult)(LO use)	β_7	.000	.000	-1.766	.079
R ² = 0.176, Adjusted R ² = 0.145, n = 189, F = 5.541, Sig. = 0.000					

6.5.6.3 The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on the Job-related Tension Dimension of Interpersonal Conflict

Table 6.20 presents the results of testing the three-way interaction hypothesis between multiple performance measures use, leadership orientations use, and organizational culture on interpersonal conflict. β_7 was not statistically significant ($t = 1.190, p = 0.236$) and, thus, the three way interaction hypothesis for interpersonal conflict cannot

be rejected. Furthermore, the model was not significant ($F = 1.408$, $p = 0.204$), which indicates that the variables do not explain the changes in interpersonal conflict.

Table 6.20 Results of estimating the three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture on interpersonal conflict

Variable	Coeff.	Value	Std. Error	t	p
Intercept	β_0	7.837	.280	27.976	.000
MPM use	β_1	-.049	.054	-.907	.366
LO use	β_2	-.097	.115	-.848	.397
Org. Cult.	β_3	-.003	.007	-.407	.685
(MPM use)(LO use)	β_4	-.003	.024	-.131	.896
(MPM use)(Org.Cult)	β_5	-.001	.001	-.977	.330
(LO use)(Org.Cult)	β_6	-.002	.003	-.714	.476
(MPM use)(Org.Cult)(LO use)	β_7	.001	.001	1.190	.236
R ² = 0.052, Adjusted R ² = 0.015, n = 189, F = 1.408, Sig. = 0.204					

6.5.6.4 The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on the Job-related Tension Dimension of Ambiguity concerning Authority and Responsibility

The results of examining the three-way interaction hypothesis between multiple performance measures use, leadership orientations use, and organizational culture on ambiguity concerning authority and responsibility are presented in Table 6.21. The results showed an adjusted R square figure of 0.130 ($df = 7$) and the model was significant ($F = 5.022$, $p = 0.000$). The three way interaction hypothesis for ambiguity concerning performance cannot be rejected as β_7 was not statistically significant ($t = -0.296$, $p = 0.768$).

Table 6.21 Results of estimating the three-way interaction between multiple performance measures use, leadership orientations use, and organizational culture on ambiguity concerning authority and responsibility

Variable	Coeff.	Value	Std. Error	t	p
Intercept	β_0	5.580	.215	27.281	.000
MPM use	β_1	-.093	.041	-2.272	.024
LO use	β_2	-.156	.088	-1.769	.079
Org. Cult.	β_3	-.005	.005	-1.064	.289
(MPM use)(LO use)	β_4	-.004	.019	-.219	.827
(MPM use)(Org.Cult)	β_5	.000	.001	-.504	.615
(LO use)(Org.Cult)	β_6	.002	.002	1.037	.301
(MPM use)(Org.Cult)(LO use)	β_7	.000	.000	-.296	.768
R ² = 0.163, Adjusted R ² = 0.130, n = 189, F = 5.022, Sig. = 0.000					

6.5.7 Further Analysis

Preacher et al. (2006) pointed out that once a significant interaction is detected, interpreting the interaction is essential. As a significant interaction effect (at 5% level) was found for the two-way interaction between multiple performance measures use and leadership orientations use on work overload, further analyses were conducted to explain the nature of that interaction. In doing so, simple slopes, regions of significance, and confidence bands techniques were used. Cohen et al. (2003) suggested that plotting interactions would give additional explanation on the nature of the interactions. Simple slopes, regions of significance, and confidence bands are common techniques for evaluating interactions in multiple linear regression models (Preacher et al., 2006).

The test of significance of simple slope examines whether a specific simple slope at one value of another predictor(s), is significantly different from zero or from some other value (Cohen et al., 2003). The regions of significance provide the range of the moderator variable within which the simple slope of y (dependent variable) on x (focal predictor) is significantly different from zero at the chosen α and the confidence bands

will show the continuously plotted confidence interval for simple slopes corresponding to all conditional values of the moderator (Preacher et al., 2006).

The test of significance of simple slope was conducted to test whether the simple slope of the job-related tension dimension of work overload on multiple performance measures use is zero at some particular value of number of leadership orientations use. The first two-way hypothesis regression equation used in this study is as follows:

$$Y_i = \beta_0 + \beta_1 \text{MPM} + \beta_2 \text{LO} + \beta_3 \text{MPM LO} + e \quad (\text{Equation 1})$$

This equation were reconceptualised in terms of one predictor:

$$Y_i = (\beta_1 + \beta_3 \text{LO}) \text{MPM} + (\beta_0 + \beta_2 \text{LO}) \quad (\text{Equation 4})$$

The $(\beta_1 + \beta_3 \text{LO})$ term is called the *simple slope* (Preacher et al., 2006).

The values of leadership orientations use were inserted into Equation 4. The leadership orientation value of 2 (low), 3 (mid), and 4 (high) were chosen to examine the effect of multiple performance measures use on work overload. The lines corresponding to each level of leadership orientations use are shown in Figure 6.1.

The t-test of the simple slopes was conducted with t equals to the simple slope divided by its standard error, with 184 degrees of freedom. The formula for the standard error of the simple slope is:

$$S_b = \text{sqrt}[s_{11} + 2\text{LO}s_{13} + (\text{LO})^2s_{33}]$$

where s_{11} is the variance of the multiple performance measures coefficient, s_{33} is the variance of the interaction coefficient, and s_{13} is the covariance of the two.

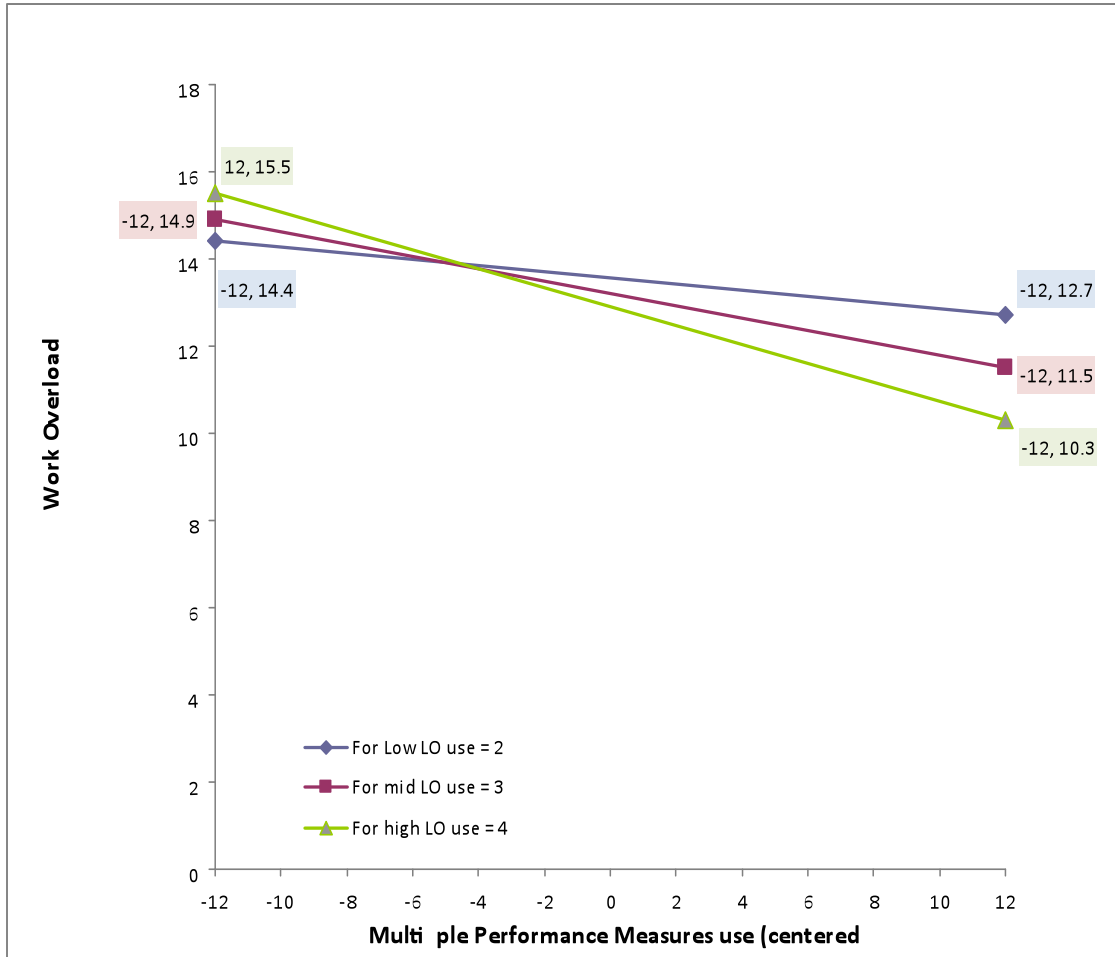


Figure 6.1 Plot illustrating the interaction of multiple performance measures use and leadership orientations use on work overload

The results showed that the simple slope corresponding to low orientation use was not significant at $\alpha = 0.05$ ($t = -1.0594$, $p = 0.29$). The simple slopes at the mid and high values of leadership orientations use were significantly negative at $\alpha = 0.05$ ($t = -2.0082$, $p = 0.046$ and $t = -2.43$, $p = 0.016$, respectively). This means that when leaders use three or four leadership orientations the regression of work overload on multiple performance measures use is significantly different from zero. As the number of leadership orientations used by leaders ranged from 0 to 4, this result provides evidence for a decline in perceived work overload with multiple performance measures use when there is a relatively high leadership orientations use.

The regions of significance and confidence bands were computed using the online utilities (<http://www.quantpsy.org>) provided by Preacher et al. (2006). The region of significance on the moderator variable (leadership orientations use) ranged from -4.7477 to 2.9477, indicating that any given simple slope outside this range is statistically significant. Given that the leadership orientations use ranges from 0 to 4, this indicates that the effect of multiple performance measures use on work overload is significant only for relatively high leadership orientations use. The plot of the confidence band is presented in Figure 6.2.

Figure 6.2 shows that confidence bands do not include simple slope of zero for values of leadership orientations use above 2.9477. From this, it can be concluded that simple slope of workload regressed on multiple performance measures use is significantly different from zero for values of leadership orientations use above this point (i.e. the effect of multiple performance measures use on perceived work overload is significant only for leadership orientations use values 3 and above).

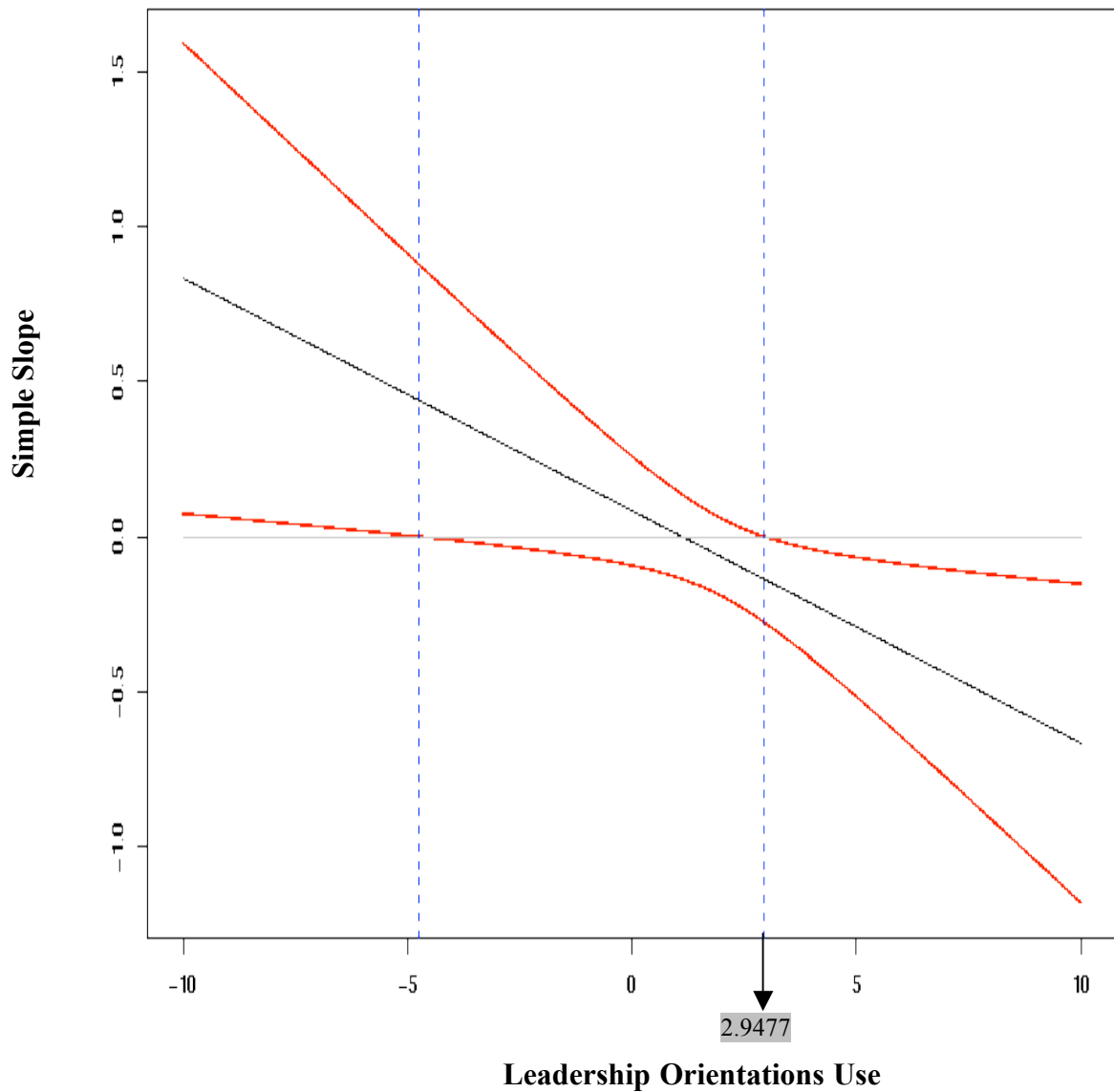


Figure 6.2 Plot illustrating confidence bands for observed sample values of leadership orientations use

6.6 Summary of the Results

As four job-related tension dimensions were found in this study (i.e. work overload, ambiguity concerning performance, interpersonal conflict, and ambiguity concerning responsibilities and authority), the analyses were conducted for each of the four job-

related tension dimensions and the independent variables (multiple performance measures use, leadership orientations use, and organizational culture).

Pearson correlation analysis was conducted to examine the correlation between multiple performance measures use and each job-related tension dimension. The result showed significant negative correlations between all job-related tension dimensions except work overload and multiple performance measures use. Thus, the first null hypothesis is rejected for all job-related tension dimensions except for work overload.

The results of testing the two-way hypothesis between multiple performance measures use and leadership orientations use on each job-related tension dimension showed a significant model except for the job-related tension dimension of interpersonal conflict. However, a significant interaction effect of multiple performance measures use and leadership orientations use was found only on the job-related tension dimension of work overload. Thus, the second null hypothesis can only be rejected for the job-related tension dimension of work overload.

Further analyses using the simple slopes, regions of significance, and confidence bands techniques were conducted to explain the nature of the interaction between multiple performance measures use and leadership orientations use on the job-related tension dimension of work overload. Interestingly, the results indicate that the negative effect of multiple performance measures use on work overload was significant only for relatively high leadership orientations use.

Meanwhile, the results of testing the two-way interaction between multiple performance measures use and organizational culture on each job-related tension dimension showed two significant models. That is, the two-way interaction model between multiple performance measures use and organizational culture on ambiguity concerning performance and ambiguity concerning responsibility and authority. However, the results also indicated that there were no interactions between multiple performance measures use and organizational culture on each job-related tension

dimension. Hence, there was a lack of support for the proposition that multiple performance measures use interacted with organizational culture to affect job-related tension. This means the third null hypothesis could not be rejected.

Three-way interaction tests were conducted to examine the interaction between multiple performance use, leadership orientations use, and organizational culture affecting each of the job-related tension dimensions. All models were found to be significant except for the job-related tension dimension of interpersonal conflict. However, an interaction effect was found only for ambiguity concerning performance and it was only at a moderate level ($p= 0.079$).

6.7 Summary

In summary, this chapter presents the results from the tests of the hypotheses developed in chapter 3. The next chapter presents the discussion and implications of these results. Contributions from this study will be presented, followed by its limitations. Directions for future studies will then be presented.

Chapter 7

7. Discussion and Conclusion

7.1 Introduction

The hypotheses for this study were developed in Chapter 3 and tested in Chapter 6. This chapter discusses the results reported in Chapter 6 and their implications with regards to prior studies. The contributions resulting from this study will also be presented, along with the limitations of this study and suggestions for future research.

7.2 Discussion of Results and Implications

This section will discuss the results of this study. The findings from factor analyses and descriptive statistics of the dependent variable (job-related tension), independent variable (multiple performance measures use), and the moderators (leadership orientations use and organizational culture) will be discussed followed by a discussion of the results for each of the hypotheses developed in Chapter 3.

7.2.1 Discussion of Findings from Factor Analysis and Descriptive Statistics of the Variables

7.2.1.1 Job-related Tension

Factor analysis of the job-related tension instrument resulted in four factors, namely work overload, ambiguity concerning performance, interpersonal conflict, and ambiguity concerning responsibility and authority. This result is consistent with Snoek et al.'s (1966) rationalization of job-related tension which highlight the four basic

dimensions of job-related tension, namely direct conflicts, job overload, ambiguity (as related specifically to information required for effective job performance), and problems arising out of the necessity of exerting influence without legitimate authority.

The job-related tension factors identified in this study are also consistent with findings from other studies in developing countries which found workload, interpersonal/role conflicts, and ambiguity as elements of employees' job/environmental stressors (Idris et al., 2010; Aziah et al., 2004; Huda et al., 2004). More specifically, the identification of work overload, interpersonal conflict, and ambiguity as dimensions of job-related tension experienced by Heads of departments is in line with Sarros et al.'s (1997) findings. Sarros et al. (1997) identify department Head's administrative task stress (including the perception toward work overload), administrative relationship stress (including measures related to performance evaluation, recognition and responsibilities) and role ambiguity stress (including the elements of interpersonal conflicts) as factors influencing Heads' of departments stress levels.

7.2.1.2 Multiple Performance Measures Use

Factor analysis of the multiple performance measures instrument produced four factors namely teaching, research, external funding, and internal funding. Recall that the instrument was developed to capture four factors: financial, teaching, research, and services. The absence of the service dimension may reflect the existing view that service is a less significant responsibility of academics compared to research and teaching (Marsh and Hattie, 2002) and has been given little recognition or reward in higher education (Kurz et al., 1989).

The two financial dimensions produced in this study may represent the meaningfulness of financial aspects perceived by the Heads of departments. This is likely because, besides managing their budget and generating funds internally, Heads of departments have to deal with growing pressure to generate new income (Scott et al., 2008). In doing so, they have to "compete for funds from external resource-providers and

become involved in market-like efforts” (Sotirakou, 2004, p.351). This is a bigger issue for Heads of departments of Indonesian private universities as there are no government funds allocated to them (Tadjudin, 2005).

7.2.1.3 Leadership Orientations Use

Factor analysis conducted on the leadership orientation instrument resulted in four factors: logical decision making, structural, human resource, and political. The last three factors are consistent with Bolman and Deal’s (1991) identification of effective leadership orientations in a higher education context. Logical decision making and political orientations were found to be dominant. That is, 55.6% and 53.4% of the respondents reported their leaders’ use of logical decision making and political orientation, respectively.

The dominance of logical decision making and political orientations found in this study can be explained by looking at the behaviors of private universities’ leaders (especially Deans) when dealing with the rapidly changing context of higher education. Unlike state universities, Indonesian private universities rely on budgets that are almost entirely tuition driven (Operation Evaluation Department, 2005; Tempo, 2007). In this situation, achieving load targets (e.g. number of students) is crucial for their survival. However, the number of students in private universities has been declining due to high levels of competition, especially with state universities (Tempo, 2007; Republika, 2009). Furthermore, globalization of higher education was identified as one of the inevitable new challenges faced by Indonesian higher education (DGHE, 2003). Thus, it can be concluded that leaders of Indonesian private universities (including Deans) are dealing with high levels of competitive pressures. Scott et al. (2008) found that when Deans are facing high competitive pressures, activities such as planning and policy development, managing staff, chairing and participating in meetings, and networking are perceived to be important. Similarly, under high levels of competition, development of strategic and operational plans and international and industrial collaboration/networking are recognized to be important for the improvement of

Indonesian higher education (DGHE, 2007). The existence and more frequent use of logical decision making orientation found in this study may reflect the main skills used by the Deans when dealing with high competitive pressures. In particular, logical decision making skills/orientation may be frequently used by Deans for effective planning and policy/strategy development. This is in line with Vadeveloo et al.'s (2009) findings which found a positive association between decision making skills and leadership effectiveness in the Malaysian higher education context. Meanwhile, the common use of political orientation by Deans identified in this study might reflect the importance of using that orientation for networking and building/increasing collaboration with external parties.

In this study, symbolic orientation was not found as a distinct leadership orientation. Bolman and Deal (1991) characterized leaders with a symbolic orientation as highly charismatic, inspirational to others and able to communicate a strong and challenging vision and sense of mission. Meanwhile, Conger et al. (1997) distinguished the charismatic leadership role from other leadership roles through the leaders' abilities to formulate a shared and idealized future vision and to communicate it in a more inspirational manner. Looking at those leadership characteristics, it seems that symbolic orientation and charismatic leadership share similar skills. Bess and Goldman's (2001) study conclude that in higher education, charismatic leadership is not common, and not necessarily effective when present. One of the reasons is that "faculty members are typically skeptical, often proud of their independence, usually highly protective of their individualism and autonomy, and at times contrary as matters of both preference and principle" (Bess and Goldman, 2001, p.431). This is possibly also one of the reasons why symbolic orientation was not identified in this study. This study was conducted in universities and focused on Heads of departments. These respondents are expected to be more educated and independent when doing their jobs (Idris et al., 2010). Thus, they may have little need to be motivated by symbols or charisma exhibited by their Deans. Consequently, they do not see a symbolic orientation as a distinct meaningful orientation of a leader. This may also explain why symbolic orientation was identified by previous studies as the least dominant

orientation (among the four orientations) in the higher education sector (Bolman and Deal, 1991; Cantu, 1997; Monahan and Shah, 2011).

Twenty eight percent of the respondents in this study reported that their Deans use all four leadership orientations. This is quite a large percentage considering that only around 15% of them reported that their leaders use only one, two, and three orientations. The percentage of respondents reporting a “zero” use of leadership orientation is the second highest (24.3%). These findings are contradictory to Bolman and Deal’s (1991) findings that educational leaders used mainly one or two orientations and only about 5% admitted to using all four of the frames. While Monahan and Shah (2011) found only a small percentage (5.5%) of his respondents (presidents of universities) used no leadership orientations, 24.3% of the respondents in this study felt that their Deans did not use any leadership orientations. As the use of multiple leadership orientations requires multiple skills from these leaders, this absence of leadership orientations may reflect the Deans’ lack of skills needed to use the leadership orientations effectively. The other possible explanation is that the Heads of departments are incapable of seeing their Deans’ leadership orientations because the Deans were not responsive to the Heads’ of departments problems. Marwan and Sweeney (2010) provide some support for this explanation as they found that Indonesian academics felt that their leaders lacked sensitivity, especially toward the academics’ needs to improve their skills.

7.2.1.4 Organizational Culture

Indonesia is one of the ASEAN (Association of Southeast Asian Nations) countries. Swierczek (1991) concluded that research in Southeast Asia has found that managers focus on conformity and orderliness. As conformity and formality are emphasized by people within a control culture, one may expect Indonesian organizations to be dominated by control cultures. However, Indonesia has been influenced by the processes of industrialization and globalization, which has been found to lead to

changes in Indonesian managers' cultural values (Heuer et al., 1999). These processes are discussed below.

In general, Indonesia is moving toward industrialization (Tadjudin, 2005) and the private sector, especially, has experienced rapid structural change since the mid-1980s (Aswicahyono et al., 2010). Managers in developing countries that become industrialized can be expected to embrace the attitudes and behaviors common to managers in other industrialized nations (i.e. western capitalistic countries) despite cultural differences (Ralston et al., 1993, 1995). In addition, Heuer et al. (1999) pointed out that Indonesian managers who had been educated in western countries may have adopted attitudes toward management and organizational interactions that are consistent with western management values. This is found to support the widespread application of western management techniques in Indonesia and has led to changes in Indonesian managers' cultural values (Heuer et al., 1999).

In the higher education sector, Indonesian universities, like universities in many other developing countries, have been influenced by the globalization of higher education, which forced the universities to be more competitive in the running of the institutions (Tadjudin, 2005). In response to the impact of globalization, the Indonesian government has introduced new legislation to facilitate the establishment of higher education institutions by foreign institutions in cooperation with Indonesian partners (Tadjudin, 2000). Added to that, the Indonesian government has promoted and supported various programs related to the internationalization of Indonesian universities (Soejatminah, 2009). Soejatminah (2009) examined the internationalization of 50 promising universities (state and private) and found that the majority of the universities have collaborated with overseas universities. Besides global collaboration, Indonesia is also a good market for international education (Tadjudin, 2005; Heuer et al., 1999). Indonesian academics who have completed overseas education, through different educational and socialization processes, may also adopt western management ideology. As approximately 20,000 Indonesians study

abroad each year (Tadjudin, 2005) and the adoption of international higher education standards are supported by the Indonesian government (Tadjudin, 2000), the widespread adoption of western management values can also be expected in the Indonesian higher education sector.

In brief, globalization, the internationalization of universities, overseas education, and the widespread adoption of western management values may influence the values shared by a majority of the universities' members, leading to changes in their organizational culture. This may explain why, instead of being dominated by a control culture, Indonesian private universities (especially at the faculty levels) were found to be dominated by a flexible culture. Indonesian academics working in a flexible culture are likely to be more open and responsive to the changes in the educational environment and to take risks and experiment with the use of educational technology in their activities (Marwan and Sweeney, 2010).

7.2.2 Discussion of Findings from Hypotheses Testing

7.2.2.1 The Correlations between Multiple Performance Measures Use and Job-related Tension Dimensions

This study found that the use of multiple performance measures will lead to lower job-related tension, especially Heads' of departments perceptions of ambiguity concerning performance, ambiguity concerning responsibility and authority, and interpersonal conflict. These results are in line with Hall's (2008) findings which indicated that the use of multiple performance measures is positively associated with goal clarity (i.e. the extent to which outcome goals and objectives of the job are clearly stated and well defined).

The correlations between multiple performance measures use and lower ambiguity concerning performance, ambiguity concerning responsibility and authority, and interpersonal conflict can be explained by looking at the nature of Heads' of

departments roles which involve multiple-tasks (Sarros et al., 1997; Diamond, 1996; Sotirakou, 2004). Sarros et al. (1997, p.3) argued that “the roles heads must perform may not be clearly articulated in terms of behaviors and performance expectations”. Multiple performance measures, therefore, help clarify performance expectations, responsibilities and authorities of the Heads.

Sotirakou (2004, p.350) argued that “the head of department position may be characterized by high levels of role conflict”. In this study, the use of more performance measures is proven to reduce the Heads’ perceptions of interpersonal conflict. Multiple performance measures are expected to enhance the decision-relevant information available to managers (Grafton et al., 2010). More specifically, multiple performance measures used by Deans may provide more relevant information needed by the Heads to make decisions, including those which affect the lives of individual academics in the departments. With sufficient relevant information, Heads of department s will be more confident in making such decisions. This may reduce the Heads’ concerns that the decisions might not be acceptable by others and, thus, increase the Heads’ of departments feelings that they will be liked and accepted by the people they work with. This can possibly result in lowering Heads’ of departments perception of interpersonal conflict.

Tytherleigh et al. (2005) and Thorsen (1996, p.473-474) identified that heavy workloads are common among academics. Gmelch and Burns (1994, p.84) stated that “the task-based nature of Heads’ of departments jobs leaves them with heavy workloads”. The direct association between the use of multiple performance measures and work overload was found only at a moderate level ($r = -0.131$ and $\text{sig.} = 0.073$). Thus, various other factors may be more dominant in influencing the Heads’ of departments perceived work overload. Examples of common factors contributing to workloads in a higher education context include funding cuts (Winefield and Jarrett, 2001), a fall in staff numbers, an increase in student numbers, the changing nature of students, the introduction of new technologies, and unrealistic deadlines (Gillespie et al., 2001, p.62).

7.2.2.2 The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use affecting Job-related Tension

This study hypothesizes that the interaction between multiple performance measures use and leadership orientations use would affect job-related tension. Support for this proposition was found only for one job-related tension dimension, namely work overload.

The results indicate a negative relationship. i.e. the use of multiple performance measures together with a higher number of leadership orientations use is associated with lower perceived work overload ($t = -2.00, p = 0.047$). Recall that in this study: 1) the direct association between the use of multiple performance measures and work overload was found only at a moderate level ($r = -0.131$ and $\text{sig.} = 0.073$); and 2) organizational culture was not found to be significant in moderating the relationship between multiple performance measures use and work overload ($t = -0.012, p = 0.990$). Thus, the results of this study provide substantial evidence for the important role Deans' leadership orientations use plays in reducing the Heads' of departments perceptions of work overload when multiple performance measures are used. A possible reason for this is discussed below.

Work overload occurs when subordinates feel that they have too heavy a workload (Kahn et al., 1964) or that their work requires them to do something which was beyond their abilities even when given an infinite amount of time (Mueller, 1965 cited in Sales, 1969). For Heads of departments, who have to deal with diverse tasks (Sarros et al., 1997), work demands are likely to be higher. When assessed using multiple performance measures, Heads of departments may have sufficient information regarding the expected activities, but these performance indicators may not provide the necessary information on how to carry out the expected activities and to deliver the expected role performance (Patelli, 2007). This limits the Head of department's ability to better perform these activities and achieve his/her expected performance. This lack of ability may result in the Head of department experiencing work overloaded. Work overload is an issue for Indonesian higher education institutions. As reported by

Marwan and Sweeney (2010), work overload is perceived to be one of the problems faced by Indonesian academics. These academics also believe that leaders play an important role in improving the academics' skills, including those needed to assign workload (Marwan and Sweeney, 2010). This is in line with Idris et al.'s (2010) findings that their Malaysian respondents believe that superiors have an important role in helping them cope with their workload. From the above findings, we can argue that Deans play an important role in reducing the Heads' of departments perceived work overload.

Further analyses using common techniques for evaluating interactions (i.e. simple slopes, region of significance, and confidence bands) indicate that multiple performance measures use led to lower perceptions of work overload only when Deans used three or four leadership orientations. This may be explained further through the strong empowerment attitudes and actions which were found to be shown by leaders with multiple leadership orientations (Seaborne, 2003). Empowerment means continuous improvement (Beatty and Ulrich, 1991) and enable employee "to produce beyond their current capabilities, to sail away from familiar shores and enter unfamiliar waters, to find new strengths, new knowledge, and new ways for achieving their own goals" (Seaborne, 2003). Leaders' strong empowerment attitudes will increase subordinates' ability to use diverse skills, controls, and job knowledge. Thus, at a faculty level, Deans with multiple leadership orientations, through their strong empowerment attitudes, are likely to be effective in increasing their Heads' of departments abilities to use and increase the skills, controls and knowledge required in their job. With these increased abilities, the Heads of departments may feel that they are more capable of meeting various job demands as reflected in the diverse set of performance measures. This led to decreased perceived work overload.

7.2.2.3 The Insignificant Role of Organizational Culture as a Moderator

Previous studies have found the direct relationship between multiple performance measures use and job-related tension dimensions (Patelli, 2007; Hall, 2008), the relationship between organizational culture and job-related tension (Pool, 2000; Zeffane and McLoughlin, 2006; Shih and Chen, 2006), and the relationship between multiple performance measures use and organizational culture (Bititci et al., 2006; Henri, 2006; Rhodes et al., 2008). Similar to these findings, the bivariate correlations results (Appendix 8) indicates that there are significant relationships between: 1) multiple performance measures use and job related tension dimensions (except for work overload); 2) organizational culture and job-related tension dimensions (i.e. work overload and ambiguity concerning performance); and 3) multiple performance measures use and organizational culture.

However, there is no convincing evidence found in this study that multiple performance measures use interacts with organizational culture in affecting job-related tension dimensions, suggesting that the effect of multiple performance measures use is consistent for all levels of organizational culture (i.e. flexible vs. control). This finding is interesting as it does not support the view that organizational culture plays an important role in affecting the differences in the success of the use of multiple performance measures (Rhodes et al., 2008; Bititci et al., 2004). The finding can be explained using findings reported by Bititci et al. (2004), which provide evidence that the success/failure of the use of performance measurement is not affected by an organization's initial culture (mainly an output orientated culture/power culture). Bititci et al. (2004) explains that in the life cycle of performance measurement systems in organizations, the success of the use of performance measurement systems (including the use of multiple performance measures) which includes acceptance of and commitment to performance measurement use, is accompanied by the change in organizational culture from a power culture to an achievement culture. In the achievement culture, people attempt to resolve their own problems and satisfy their own needs and expectations and, thus, work is performed out of satisfaction in

excellence of work and achievement and/or personal commitment to the task or goal (Harrison, 1987 and Handy, 1985 cited in Bititci et al., 2004). As discussed earlier in section 7.2.1.4, the majority of Indonesian private universities seemed to have moved from a control to a flexible culture. However, a flexible culture shares only some of the achievement values (e.g. adaptability and team orientation). A flexible culture does not focus on the other important values that are emphasized by the achievement culture, namely, task orientation and high internal motivation. Therefore, it can be concluded that a flexible culture does not fully reflect an achievement culture, that is, a culture that goes together with the acceptance of and commitment to the use of performance measures (Bititci et al., 2004). This may explain why the control/flexible culture category fails to further explain the effect of use of multiple performance measures on subordinates' (Heads' of department) job-related tension.

7.3 Contributions, Limitations, and Future Research Directions

This section discusses the contributions arising from this study, the limitations of this study, and suggestions for future research.

7.3.1 Contributions

This study observed job-related tension to examine the perceptions of Indonesian Heads of departments towards the use of multiple performance measures. Studying job-related tension is important as it has a wide ranging impact on individuals, such as poorer quality decision making, lower levels of creativity, absenteeism, poor time management, depression, and job satisfaction (Kinman, 2001, p.482). The job-related tension instrument was designed to tap into three or four dimensions based on its conceptual framework and previous research (Wooten et al., 2010). However, Patelli (2007) pointed out that accounting research in this area traditionally used job-related tension as a single concept (Emsley, 2001; Lau et al., 1995; Ross, 1994, 1995; Choo 1986; Hirst, 1983). Furthermore, some previous studies identified different dimensions of job-related tension but chose to use it as a single concept (e.g. Greer and Castro, 1986; Ivancevich et al., 1983). This study identified four dimensions of job-related

tension (i.e. work overload, ambiguity concerning performance, interpersonal conflict, and ambiguity concerning responsibility and authority) and, therefore, investigated the respondents' behaviors related to each dimension. Dimensions of job-related tension that have been examined in the multiple performance measures studies include role clarity (Hall, 2008), role ambiguity, and role conflict (Patelli, 2007; Burney and Widener, 2007). Pettegrew and Wolf (1982, p.376) argued that "role studies have focused exclusively on role conflict and role ambiguity to the exclusion of role-related stressors, which literature suggests may be an important part of the role stress domain". Thus, this study enhances our knowledge in this area as it examined the work overload dimension in addition to work ambiguity and interpersonal conflict.

This study has successfully developed and validated a performance measurement instrument that can be useful for examining performance evaluation practices in higher education institutions. Design of performance evaluation systems (including the design of performance measurement) is important as it is found to be associated with academics' stress, that is, when designed well, performance evaluation/measurement is believed to help increase communication, planning, and role clarity (Gillespie et al., 2001). In particular, as the Indonesian government provides no financial support to private universities, the design of performance measures becomes more important for them. With no funding from the government, to survive, Indonesian private universities need to monitor their performance by critically evaluating the efficiency and effectiveness of their activities. Initial performance measures developed in this study include both financial and non-financial measures which include teaching, research, and service performance measures. Factor analyses of the instrument resulted in four dimensions, namely internal funding, external funding, teaching, and research performance measures. The existence of the two financial factors (i.e. internal and external funding) indicates that financial issues are among the main concerns of Indonesian private universities.

The significant relationship between multiple performance measures use and the three job-related tension dimensions (i.e. interpersonal conflict, ambiguity concerning performance, and ambiguity concerning responsibility and authority) found in this

study support the findings from earlier studies that confirm the behavioral impacts of the use of multiple performance measures on subordinates (Hall, 2008; Patelli, 2007). Thus, this result adds to the understanding of the benefits of using multiple performance measures from a behavioral perspective as the behavioral impacts verify the success of the use of performance measurement in an organization (Chenhall and Langfield-Smith, 2007).

This study adds to the leadership style literature by providing further evidence supporting the use of multiple leadership orientations. Bolman and Deal (1991, p.529) argued that “managers often use only one or two frames (orientations), but need to rely on all four to be fully effective as managers and leaders”. This is supported by Thompson’s (2000) findings which show that educational leaders who use three or four leadership orientations are perceived to be more effective in their leadership role. In this study, the use of multiple leadership orientations was found to be significant in influencing the relationship between the use of multiple performance measures and work overload. This implies that when deciding to use more/less performance measures, besides considering its effect on perceived work overload, upper level management (Faculty or University) need to also consider the impact of leadership orientations use as a moderator.

7.3.2 Limitations

This study has several limitations, notably the use of highly structured questionnaires will restrict the research. However, the restriction is in relation to the depth of the data collected. This limitation is justifiable as the research questions in this study require answers to scope, rather than depth, and the sample data are used to draw inferences about the population (Roberts, 1999). The use of participants’ perceptions to measure the variables has been criticized on the grounds that they are not objective. However, this is not a serious limitation as managers’ actions and decisions are based on their perceptions (Tsui, 2001). Besides that, participant-initiated error may occur in survey methods. The problem arises when the participant fails to answer fully and accurately –

either by choice or because of inaccurate or incomplete knowledge (Cooper and Schindler, 2003). The questionnaire was sent to the Rector's or Dean's representative for distribution to the department Heads. There may be some respondent selection bias as the Deans have some control over the selection of the respondents (e.g. they could have chosen a Head(s) who is known to be supportive of the Dean's leadership orientations or is a person known to best cope with multiple performance measures use). As the results of this study are based on cross-sectional data, no statement of causation, and particularly, the direction of causation, can be made (Dunk, 1993).

Despite all efforts to ensure that the translation and back translation were correct, there is a possibility that some nuances were lost. The other limitation that deserves mention is related to the generalizability of the research results. Data was drawn only from Indonesian universities, and hence the results may be generalizable only to that population. The respondents of this study were Heads of academic departments from private universities. Thus, the findings of this study may be applicable specifically to performance evaluation practice in private educational institutions. This limits the generalizability of the results of the study given today's global educational.

7.3.3 Future Research Directions

The result of this study reveals difficulties in validating Bolman and Deal's (1991) instrument on leadership orientations use. The scales do not load onto the factors as conceptualized in Bolman and Deal's (1991) instrument, which indicates that the four-dimensional leadership orientation construct has not translated well from its original context to the Indonesian private universities context. Thus, further testing through interviews and refinement of the questionnaire instrument is needed to provide support for the interpretation of these four dimensions.

All variables in this study were measured contemporaneously. As the impact of the use of multiple performance measures may not be seen immediately, future research could benefit from longitudinal studies (Hyvonen, 2007). Specifically, longitudinal

replication may be conducted to assess the dynamic effects of changes especially in multiple performance measures and leadership orientations used by educational leaders and their effects on subordinates' job-related tension. Future research may also look at other possible moderating variables such as subordinates' position and organizational tenure, and their coping strategies.

Dealing with the behavioral impacts of the use of multiple performance measures, individuals can undertake coping strategies (Patelli, 2007). Idris et al. (2010) found that to cope with job stress, Malaysian employees mainly focused on individual strategies. For example, they found that religious activities are believed to be one of the solutions for managing stress. Considering that Indonesia has a larger Muslim population than any other country in the world which tolerates other religions (Gupta et al., 2002), it will be interesting to examine the role of an individual's religious activities in reducing job stress. Therefore, besides the organizational factors, the examination of the use of individual factors as moderators may also be important to be included in future empirical models. Future research in developing countries could also give attention to the impact of external factors such as globalization, social and economic forces, advanced technology, and politics on job stress as these factors are shown to have an impact in changing the nature of workplaces in a developing country (Idris et al., 2010).

The main reason for examining only private universities is because, unlike public universities, no budget is allocated for private universities by the Indonesian government. Thus, the type of financial measures used in public universities would be different and the achievement of financial performance in public universities would not be as important as that in private universities. Nevertheless, high performing private universities may be awarded competitive-based funding by the Indonesian government. This study does not investigate the impact of such award on their performance measurement practices. Future Indonesian studies in this area may address this matter especially to see how government's competitive-based funding affects performance evaluation practices in public/private universities.

7.4 Concluding Remarks

In summary, this study examined how dimensions of job-related tension, namely work overload, ambiguity concerning performance, interpersonal conflict, and ambiguity concerning responsibility and authority were affected by multiple performance measures use. This study provides support for the assertion that the use of multiple performance measures is associated with lower job-related tension dimensions.

More interestingly, this study provides evidence that only when a high number of leadership orientation is used, would the use of multiple performance measures negatively affect perceived work overload. This highlights the importance of the use of different leadership orientations by Deans to reduce their Heads' of departments perceived work overload when multiple performance measures were used to evaluate the Heads of departments.

For higher educational leaders, the significant role of multiple performance measures use and leadership orientations use in reducing perceived work overload has at least two implications. Firstly, it highlights the importance of the development and use of performance measures that capture a complete picture of their organizational performance aspects (especially but not limited to financial, teaching, and research). Secondly, it suggests that leadership training or leadership development programs (especially for Deans) need to be conducted intensively to increase the understanding and skills needed to employ multiple leadership orientations. This is particularly important in the Indonesian higher education context as the role of leadership in Indonesian universities has not been clearly defined. As stated by Tadjudin (2005, p.34) in his report on current issues in Indonesian higher education: 'University governance structures at present do not have sufficient autonomy to ensure institutional integrity and to fulfill the responsibilities of policy and resource development.....new laws and regulations must be enacted to clearly define the role of leadership in universities'.

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Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

9. Appendices

Appendix 1 Number of Faculties Sampled in the Pilot Test

Faculty	Percentage of sample
Economics	12.8
Engineering	17.9
Education	2.6
Agriculture	18
Social and Politics	7.7
Language	5.1
Communication	-
Islamic Studies	2.6
Health	5.1
Information Technology	5.1
Computer Science	5.1
Mathematics and Science Education	2.6
Psychology	7.7
Law	7.7

Appendix 2 Number of Faculties Sampled in the Main Survey

Faculty	Percentage of sample
Economics	25.3
Engineering	20.5
Education	11.6
Agriculture	11.1
Social and Politics	8.4
Language	4.2
Communication	3.7
Islamic Studies	3.2
Health	2.6
Information Technology	2.6
Computer Science	2.1
Mathematics and Science Education	2.1
Psychology	1.6
Law	1.1

Appendix 3 Letter for Rector/Dean

Date

«Title» «First Name» «Last Name»
«Job Title»
«University»
«Address 1»
«State» «Postal Code»
Indonesia

Dear «Title» «Last name»,

My name is Yuningsih. I am a full time PhD student at Curtin University.

I am presently conducting research on the development and implementation of performance measures in the Indonesian Higher Education sector. This research is being conducted for my PhD degree at Curtin University, Australia.

In particular, I am studying the relationship between multiple performance measures use and job-related tension with the examination of the role of moderating variables, namely leadership orientations use and organizational culture, in higher education.

I am writing to enquire if your university would be kind enough to assist in my research. I have designed a questionnaire which I would like to have completed by Heads of departments in private universities in Indonesia.

I would be grateful if you would be prepared to allow your Head of department to answer the questionnaire for me. I have attached a sample copy of the questionnaire for your examination. It takes about 30 minutes to complete and respondents are advised in the cover letter not to ponder over questions. Their first and immediate response is all that is required. They can complete the questionnaire at their convenience and they are not required to give their names or any personal information from which they could be identified.

Similarly, the confidentiality and the anonymity of your organization will be respected and protected. I will ensure and guarantee that none of the universities that co-operate in the research will be identified, or be capable of being identified, in the writing up of the research for submission as a PhD or in any subsequent academic journal or publication. Respondents are being drawn from a number of universities and all data analyses and reporting will be aggregated.

The type of people I would like to complete the questionnaire does not have to be at any specific level of seniority. They simply need to be responsible for a department in an undergraduate program of your faculty.

I would be grateful if your university would be prepared to help me in my research. I appreciate that you must receive many such requests, but trust this study and its results may be of interest to you and your university.

I believe there will be several benefits arising from this study. One is obviously that it will help me attain my PhD degree. More importantly, I hope that the study may be of interest to senior managers such as yourself in that it may help them to appraise the leadership orientations, organizational culture, and the use of performance measures that are currently in place in their organizations, particularly with respect of the ability of those factors to produce the best organizational outcomes among their people.

I will ensure that you receive a specific report on the main findings of the study in respect of the relationship between multiple performance measures use, leadership orientations use, organizational culture, and job-related tension.

With your permission, I will telephone you on 7 January of 2009 to see if you may be able to assist me and if so, to arrange to send out further questionnaires with stamped, self-addressed envelopes to your organization for distribution.

Thank you very much for considering my request. Your assistance will not only be greatly appreciated by me personally, but will also be an important contribution to our knowledge and education about management practices in the Indonesian Higher Education sector.

Should you need to contact me in the meantime, my email is Yuningsih@postgrad.curtin.edu.au. Otherwise, I will telephone your office on 7-01-2009.

Yours sincerely,

Yuningsih
PhD student
Curtin University

Assoc. Prof. Alina Lee
Supervisor
Curtin University

Appendix 4 Letter for Participant

Date

Dear Participant,

Your Dean has been kind enough to allow me to ask for your help in the research I am conducting for my PhD degree in accounting at Curtin University.

In particular, I am studying the relationship between multiple performance measures use and job-related tension with the examination of the role of moderating variables, namely leadership orientations use and organizational culture, in higher education.

You are asked to complete the attached questionnaire, which should take you about 30 minutes. I am only interested in your immediate reaction. There is no “correct” answer to any questions. Once completed, please return the questionnaire directly to me using the stamped, self-addressed envelope provided.

This survey is conducted anonymously and confidentially. I would like to ensure that only aggregated results will be given in any report and/or paper resulting from this study. Your organization will have no way of knowing how you have responded. Your participation in this survey is voluntary. You are allowed to withdraw at any time without prejudice and negative consequences.

I believe there will be several benefits arising from this study. One is obviously that it will help me attain my PhD degree. More importantly, I hope that the study may be of interest to managers in that it may help them to appraise the leadership orientations, organizational culture, and the use of performance measures that are currently in place in their organizations, particularly with respect of the ability of those factors to produce the best organizational outcomes among their people.

Your help and participation in this research is greatly appreciated.

Should you wish to contact me in the meantime, my email address is Yuningsih@postgrad.curtin.edu.au. If you are concerned about the ethical aspect of the research, please contact the Curtin University Human Research Ethics Committee at the Office of Research and Development, Curtin University, GPO Box U1987, Perth WA 6845, Australia or email hrec@curtin.edu.au or phone: 61 08 92662784. This project has been approved by the Curtin University Human Research Ethics Committee (Approval number: HR ACC 04/2008).

Yours sincerely,
Yuningsih
PhD student

Appendix 5 The Questionnaire

Code:

Multiple Performance Measures Use and Job-related Tension in the Indonesian Higher Education Sector: The Effect of Leadership Orientations Use and Organizational Culture

General Instructions

1. There are no correct or incorrect answers to the items included in the questionnaire. As you go through to the questionnaire, please do not give too much thought to any one question – your first response is the best.
2. Responses to all questions will be kept strictly confidential and anonymous. Completed questionnaires will be seen only by yourself and the researchers. Any data subsequently presented will be aggregated and therefore will point to no particular individual.
3. Please return the completed questionnaire directly to me using the stamped, self-addressed envelope provided.

Your co-operation in carefully completing this questionnaire is greatly appreciated.

Yuningsih

School of Accounting
Curtin University

Dear Participant,

Thank you once again for your assistance and participation in this research.

If you would like a copy of the research report once it is completed, please tick the relevant box.

Your help and participation in this research is greatly appreciated.

Yours sincerely,

Yuningsih
PhD student

Would you like to receive a copy of the completed research report?

Yes

No

Name: _____

Address: _____

Post Code: _____ State: _____

Section A. Leader Behaviors

This section asks you to indicate how often each item is true of your supervisor.
Please use the following scale in answering each item:

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My supervisor.....

- | | | | | | | |
|-----------|--|---|---|---|---|---|
| <u>1</u> | Thinks very clearly and logically..... | 1 | 2 | 3 | 4 | 5 |
| <u>2</u> | Shows high levels of support and concern for others..... | 1 | 2 | 3 | 4 | 5 |
| <u>3</u> | Shows exceptional ability to mobilize people and resources
to get things done..... | 1 | 2 | 3 | 4 | 5 |
| <u>4</u> | Inspires others to do their best..... | 1 | 2 | 3 | 4 | 5 |
| <u>5</u> | Strongly emphasizes careful planning and clear lines..... | 1 | 2 | 3 | 4 | 5 |
| <u>6</u> | Builds trust through open and collaborative relationships..... | 1 | 2 | 3 | 4 | 5 |
| <u>7</u> | Is a very skilful and shrewd negotiator..... | 1 | 2 | 3 | 4 | 5 |
| <u>8</u> | Is highly charismatic..... | 1 | 2 | 3 | 4 | 5 |
| <u>9</u> | Approaches problems through logical analysis and careful thinking..... | 1 | 2 | 3 | 4 | 5 |
| <u>10</u> | Shows high sensitivity and concern for others' needs and feelings..... | 1 | 2 | 3 | 4 | 5 |
| <u>11</u> | Is unusually persuasive and influential..... | 1 | 2 | 3 | 4 | 5 |
| <u>12</u> | Is an inspiration to others..... | 1 | 2 | 3 | 4 | 5 |
| <u>13</u> | Develops and implements clear, logical policies and procedures..... | 1 | 2 | 3 | 4 | 5 |
| <u>14</u> | Fosters high levels of participation and involvement in decisions..... | 1 | 2 | 3 | 4 | 5 |
| <u>15</u> | Anticipates and deals effectively and efficiently with
organizational conflict..... | 1 | 2 | 3 | 4 | 5 |
| <u>16</u> | Is highly imaginative and creative..... | 1 | 2 | 3 | 4 | 5 |

This section asks you to indicate how often each item is true of your supervisor.
Please use the following scale in answering each item:

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

- | | | | | | | |
|-----------|---|---|---|---|---|---|
| <u>17</u> | Approaches problem with facts and logic..... | 1 | 2 | 3 | 4 | 5 |
| <u>18</u> | Is consistently helpful and responsive to others..... | 1 | 2 | 3 | 4 | 5 |
| <u>19</u> | Is very effective in getting support from people with
influence and power..... | 1 | 2 | 3 | 4 | 5 |
| <u>20</u> | Communicates a strong and challenging vision and sense of
mission..... | 1 | 2 | 3 | 4 | 5 |
| <u>21</u> | Sets specific, measurable goals and holds people accountable for results..... | 1 | 2 | 3 | 4 | 5 |
| <u>22</u> | Listens well and is unusually receptive to other people's ideas and input..... | 1 | 2 | 3 | 4 | 5 |
| <u>23</u> | Is politically very sensitive and skilful..... | 1 | 2 | 3 | 4 | 5 |
| <u>24</u> | Sees beyond current realities to create exciting new opportunities..... | 1 | 2 | 3 | 4 | 5 |
| <u>25</u> | Exhibits extraordinary attention to detail..... | 1 | 2 | 3 | 4 | 5 |
| <u>26</u> | Gives personal recognition for work well done..... | 1 | 2 | 3 | 4 | 5 |
| <u>27</u> | Develops alliances to build a strong base support..... | 1 | 2 | 3 | 4 | 5 |
| <u>28</u> | Generates loyalty and enthusiasm..... | 1 | 2 | 3 | 4 | 5 |
| <u>29</u> | Strongly believes in clear structure and a chain of command..... | 1 | 2 | 3 | 4 | 5 |
| <u>30</u> | Is a highly participative manager..... | 1 | 2 | 3 | 4 | 5 |
| <u>31</u> | Succeeds in the face of conflict and opposition..... | 1 | 2 | 3 | 4 | 5 |
| <u>32</u> | Serves as an influential model of organizational aspirations and
values..... | 1 | 2 | 3 | 4 | 5 |

Section C. Organizational Culture

These questions relate to the type of organizations that your organization most resembles. Each of these items contains four descriptions of organizations. Please distribute 100 points among the four descriptions depending on how similar the description is to your organization.

- I.** Institutional characteristics (please distribute 100 points)
- a. _____ **Organization A** is a very personal place. It is like an extended family. People see to share a lot of themselves.
 - b. _____ **Organization B** is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
 - c. _____ **Organization C** is a very formalized and structured place. Bureaucratic procedures generally govern what people do.
 - d. _____ **Organization D** is a very production oriented.
- (Total)** 100 A major concern is with getting the job done. People are not very personally involved.
- II.** Institutional leader (please distribute 100 points)
- a. _____ **The Head of Organization A** is generally considered to be a mentor, a sage, or a father or mother figure.
 - b. _____ **The Head of Organization B** is generally considered to be an entrepreneur, an innovator, and a risk taker.
 - c. _____ **The Head of Organization C** is generally considered to be a coordinator, an organizer, or an administrator.
 - d. _____ **The Head of Organization D** is generally considered to be a producer, a technician, or a hard-driver.
- (Total)** 100
- III.** Institutional cohesion (please distribute 100 points)
- a. _____ **The glue that holds Organization A** together is loyalty and tradition. Commitment to this organization runs high.
 - b. _____ **The glue that holds Organization B** together is commitment to innovation and development. There is an emphasis on being first.
 - c. _____ **The glue that holds Organization C** together is formal rules and policies. Maintaining a smooth-running organization is important here.
 - d. _____ **The glue that holds Organization D** together is the emphasis on tasks and goal accomplishment. A production orientation is commonly shared.
- (Total)** 100
- IV.** Institutional emphases (please distribute 100 points)
- a. _____ **Organization A** emphasizes human resources. High cohesion and morale in the organization are important.
 - b. _____ **Organization B** emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.
 - c. _____ **Organization C** emphasizes permanence and stability. Efficient, smooth operations are important.
 - d. _____ **Organization D** emphasizes competitive actions and achievement
- (Total)** 100 Measurable goals are important.

Section D. Job-related tension

This section asks you to indicate how often you feel bothered by each of the item:

	1	2	3	4	5
	Never	Occasionally	Sometimes	Often	Always
a. Feeling that you have too little authority to carry out the responsibilities assigned to you	1	2	3	4	5
b. Being unclear on just what the scope and responsibilities of your job are.....	1	2	3	4	5
c. Not knowing what opportunities for advancement or promotion exist for you	1	2	3	4	5
d. Feeling that you have too heavy a work load, one that you can't possibly finish during an ordinary workday.....	1	2	3	4	5
e. Thinking that you'll not be able to satisfy the conflicting demands of various people over you.....	1	2	3	4	5
f. Feeling that you are not fully qualified to handle your job.....	1	2	3	4	5
g. Not knowing what your supervisor thinks of you, how he/she evaluates your performance.....	1	2	3	4	5
h. The fact that you can't get information needed to carry out your job..	1	2	3	4	5
i. Having to decide things that affect the lives of individuals, people that you know.....	1	2	3	4	5
j. Feeling that you might not be liked and accepted by the people you work with.....	1	2	3	4	5
k. Feeling unable to influence your immediate supervisor's decisions and actions that affect you.....	1	2	3	4	5
l. Not knowing just what the people you work with expect of you.....	1	2	3	4	5
m. Thinking that the amount of work you have to do may interfere with how well it gets done.....	1	2	3	4	5
n. Feeling that you have to do things on the job that are against your better judgment.....	1	2	3	4	5
o. Feeling that your job tends to interfere with your family life.....	1	2	3	4	5

Section E. Demographics

For this section, please circle or write in the appropriate answer

1. Are you:
 1. Male
 2. Female

2. How old are you?
 1. 20 - 29
 2. 30 - 39
 3. 40 - 49
 4. 50 or over

3. What is the highest qualification that you have achieved?
 1. Diploma
 2. Bachelors degree
 3. Postgraduate diploma
 4. Masters degree
 5. PhD

4. In which country did you attain your highest qualification?
.....

5. Are you responsible for an academic department for an undergraduate program?
 1. Yes
 2. No

6. What is your department accreditation status?
 1. A
 2. B
 3. C
 4. Not accredited

7. Number of registered student in your department
 1. Less than 200
 2. 200 – 399
 3. 400 – 599
 4. 600 – 799
 5. 100 – 1000
 6. More than 1000

8. How long have you held this academic department?
1. Less than 1 year
 2. Between 1 and 5 years
 3. Between 6 and 10 years
 4. More than 10 years
9. What is your faculty?
1. Economics
 2. Engineering
 3. Psychology
 4. Other (please specify):.....
10. Have you been a Head of this academic department and a Dean at the same time?
1. Yes
 2. No
11. How long have you been working in this university?
1. Less than 1 year
 2. 1 – 5 years
 3. 6 – 10 years
 4. More than 10 years
12. What is your university's mission?
1. Excellence in Research
 2. Excellence in Teaching
 3. Others, please specify
.....

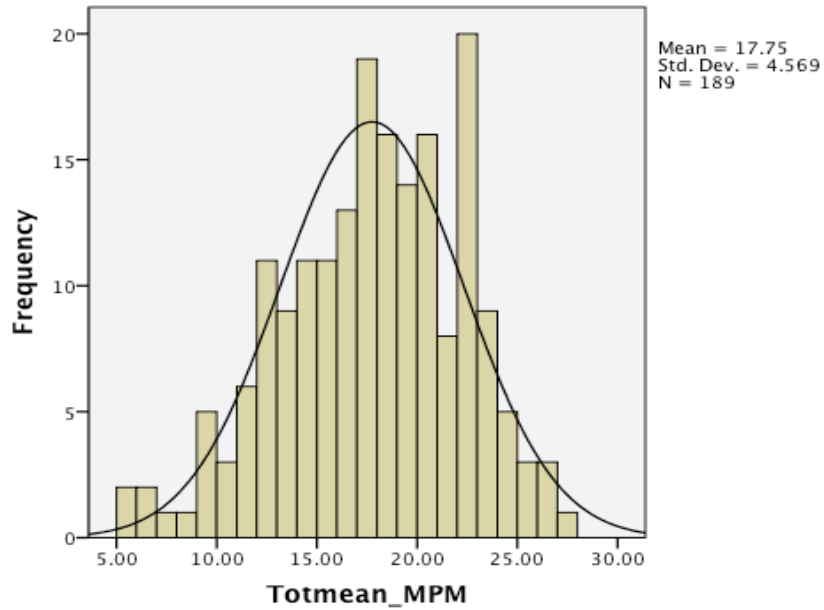
Appendix 6 Results of the Tests for Non-response Bias

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
MPM use	Equal variances assumed	.699	.404	.335	187	.738	.25795	.77063	-1.26229	1.77820
	Equal variances not assumed			.336	79.104	.738	.25795	.76819	-1.27106	1.78696
LO use	Equal variances assumed	3.075	.081	-.566	187	.572	-.14909	.26324	-.66838	.37021
	Equal variances not assumed			-.541	73.092	.590	-.14909	.27555	-.69825	.40008
Org.Cult.	Equal variances assumed	.056	.812	1.107	187	.270	6.95235	6.28094	-5.43824	19.34295
	Equal variances not assumed			1.115	79.697	.268	6.95235	6.23385	-5.45412	19.35883
JRT_Workload	Equal variances assumed	.092	.762	-.558	187	.578	-.33473	.59987	-1.51811	.84865
	Equal variances not assumed			-.557	78.436	.579	-.33473	.60096	-1.53106	.86159
JRT_Amperf	Equal variances assumed	.112	.738	-.859	187	.392	-.34552	.40245	-1.13945	.44841
	Equal variances not assumed			-.861	79.070	.392	-.34552	.40128	-1.14424	.45320
JRT_Conflict	Equal variances assumed	.071	.791	-.824	187	.411	-.28004	.33968	-.95013	.39005
	Equal variances not assumed			-.806	75.777	.423	-.28004	.34749	-.97215	.41207
JRT_Amra	Equal variances assumed	.746	.389	.038	187	.970	.01049	.27769	-.53731	.55829
	Equal variances not assumed			.036	74.043	.971	.01049	.28825	-.56386	.58483

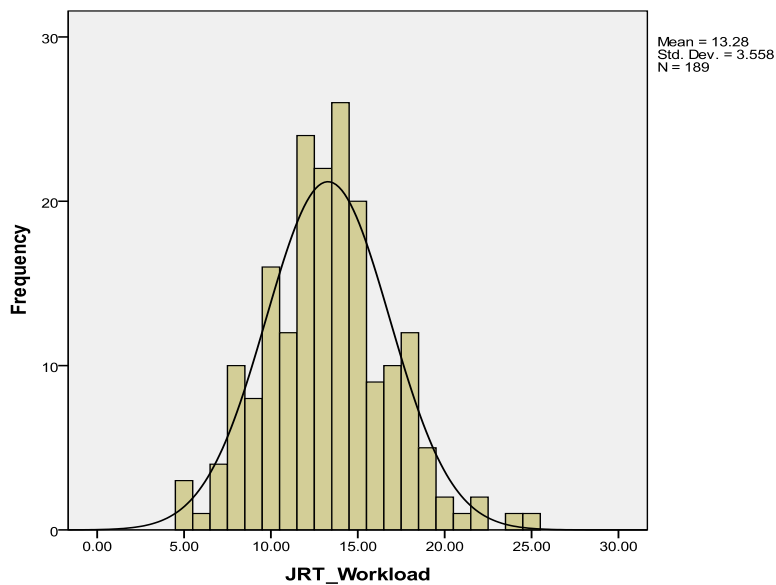
Appendix 7 Results of the Tests on Assumptions of the Linear Regressions

1. Normality

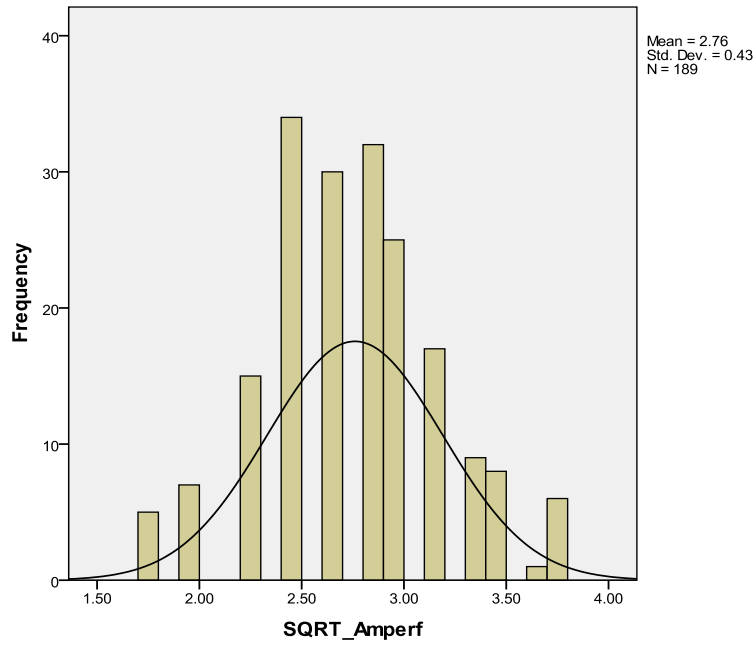
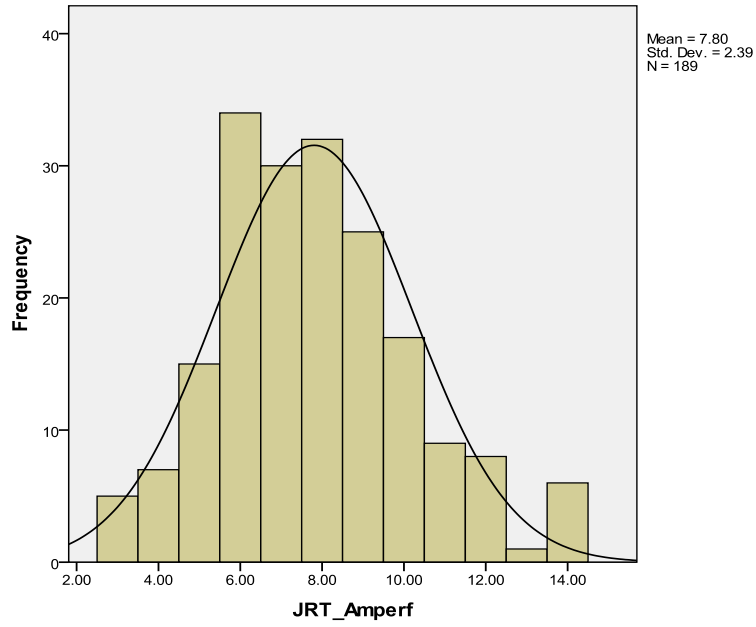
Multiple performance measures



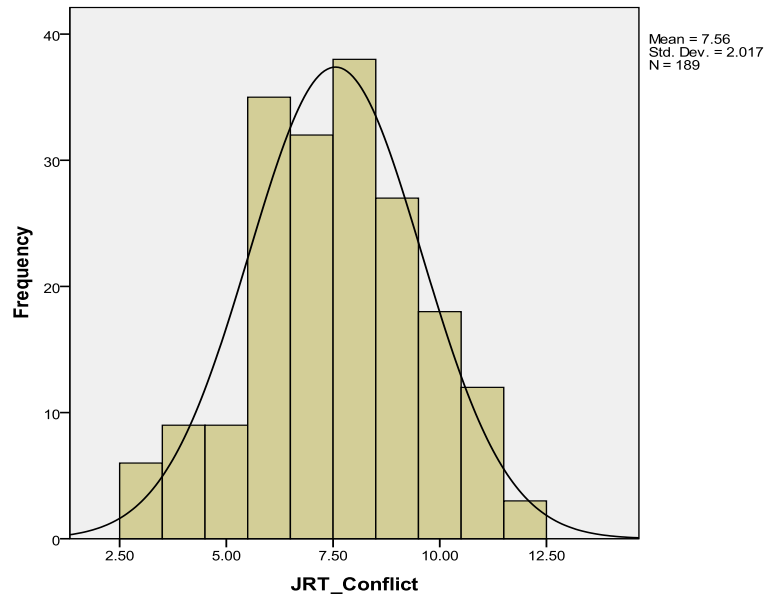
Job-related Tension - Work overload



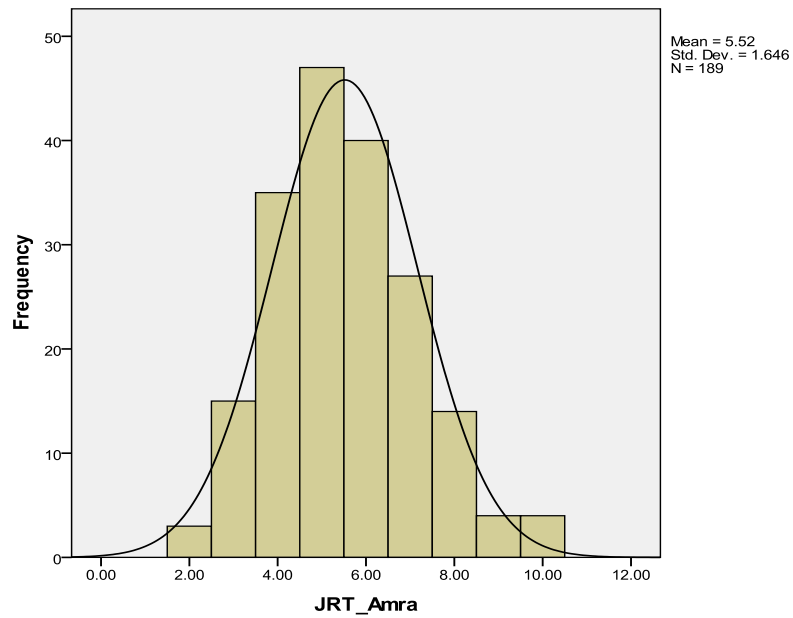
Job-related Tension - Ambiguity Concerning Performance



Job-related Tension - Interpersonal Conflict



Job-related Tension - Ambiguity Concerning Authority and Responsibility



2. Multicollinearity (Variance Inflation Factor/VIF)

The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimensions

Variable	Collinearity Statistics	
	Tolerance	VIF
MPM use	.383	2.610
LO use	.753	1.329
(MPM Use) (LO use)	.419	2.388

The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimensions

Variable	Collinearity Statistics	
	Tolerance	VIF
MPM use	.871	1.148
Org.Cult.	.948	1.055
(MPM Use) (Org.Cult)	.904	1.107

The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on Job-related Tension Dimensions

Variable	Collinearity Statistics	
	Tolerance	VIF
MPM use	.355	2.817
LO use	.662	1.510
Org. Cult.	.360	2.779
(MPM use)(LO use)	.324	3.085
(MPM use)(Org.Cult)	.501	1.995
(LO use)(Org.Cult)	.335	2.983
(MPM use)(Org.Cult)(LO use)	.388	2.576

3. Homoscedasticity (Park test)

Park Test - The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimensions

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.937	.348		2.692	.008
1 MPM use	.007	.066	.013	.108	.914
LO use	.040	.138	.024	.290	.772
(MPM use) (LO use)	-.026	.028	-.107	-.944	.346

Dependent Variable: LnU²1 (work overload)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-2.709	.259		-10.451	.000
1 MPM use	-.030	.049	-.071	-.603	.547
LO use	-.123	.103	-.100	-1.198	.233
(MPM use) (LO use)	.001	.021	.004	.034	.973

Dependent Variable: LnU²2 (Amperf)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.156	.299		.522	.602
1 MPM use	.003	.057	.006	.047	.963
LO use	.036	.119	.026	.304	.761
(MPM use) (LO use)	-.018	.024	-.087	-.767	.444

Dependent Variable: LnU²3 (Conflict)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-.681	.283		-2.406	.017
1 MPM use	-.079	.054	-.173	-1.474	.142
LO use	.175	.112	.131	1.560	.121
(MPM use) (LO use)	.001	.022	.005	.040	.968

Dependent Variable: LnU²4 (Amra)

Park Test - The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimensions

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	1.028	.206		4.999	.000
1 MPM use	.012	.045	.021	.273	.785
Org.Cult.	-.009	.005	-.132	-1.763	.080
(MPM use) (Org.Cult)	-6.417E-005	.001	-.004	-.054	.957

Dependent Variable: LnU²5 (Workload)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-2.930	.153		-19.209	.000
1 MPM use	-.033	.034	-.077	-.989	.324
Org.Cult	-.007	.004	-.126	-1.694	.092
(MPM use) (Org.Cult)	-6.680E-005	.001	-.006	-.076	.939

Dependent Variable: LnU²6 (Amperf)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.155	.175		.883	.378
1 MPM use	-.030	.039	-.061	-.771	.441
Org.Cult.	-.002	.005	-.040	-.526	.600
(MPM use) (Org.Cult.)	8.094E-005	.001	.006	.080	.936

Dependent Variable: LnU²7 (Conflict)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-.220	.149		-1.479	.141
1 MPM use	-.040	.033	-.095	-1.214	.226
Org.Cult	.000	.004	.008	.110	.913
(MPM use) (Org.Cult)	.000	.001	-.039	-.502	.616

Dependent Variable: LnU²8 (Amra)

Park Test - The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on Job-related Tension Dimensions

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.975	.308		3.168	.002
MPM use	.012	.059	.026	.210	.834
LO use	.129	.126	.092	1.025	.307
1 Org.Cult.	-.009	.007	-.157	-1.285	.201
(MPM use) (LO use)	-.024	.027	-.114	-.889	.375
(MPM use) (Org.Cult)	.000	.001	.020	.194	.847
(LO use) (Org.Cult)	.001	.003	.033	.258	.797
(MPM use)(LO use)(Org.Cult.)	.000	.001	-.025	-.214	.831

Dependent Variable: LnU²9 (Workload)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-2.854	.293		-9.741	.000
MPM use	-.025	.056	-.055	-.448	.655
LO use	-.093	.120	-.069	-.776	.439
1 Org.Cult.	-.002	.007	-.035	-.287	.774
(MPM use) (LO use)	.008	.026	.041	.320	.749
(MPM use) (Org.Cult)	.001	.001	.075	.735	.463
(LO use) (Org.Cult)	-.002	.003	-.087	-.695	.488
(MPM use) (LO use)(Org.Cult.)	-.001	.001	-.129	-1.111	.268

Dependent Variable: LnU²10 (Amperf)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.023	.343		.067	.947
MPM use	-.017	.066	-.033	-.264	.792
LO use	.005	.141	.003	.035	.972
Org.Cult.	.001	.008	.023	.188	.851
1 (MPM use) (LO use)	.003	.030	.013	.097	.923
(MPM use) (Org.Cult)	.001	.001	.097	.930	.354
(LO use) (Org.Cult)	-8.480E-005	.003	-.003	-.024	.981
(MPM use) (LO use)(Org.Cult.)	-.001	.001	-.104	-.872	.384

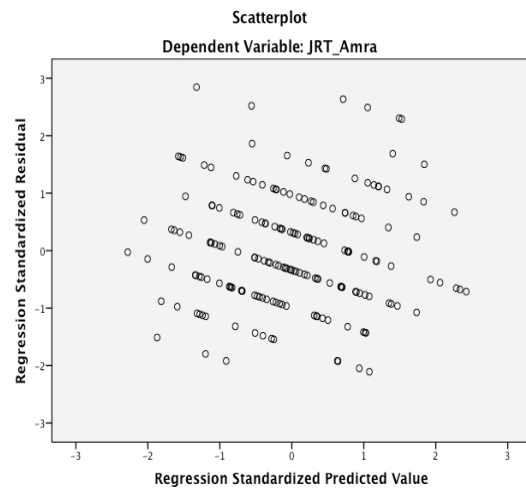
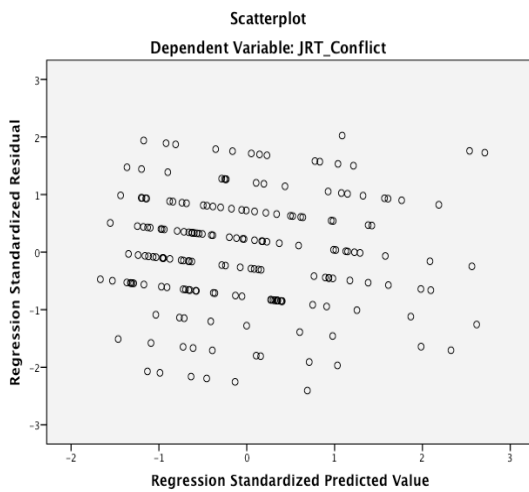
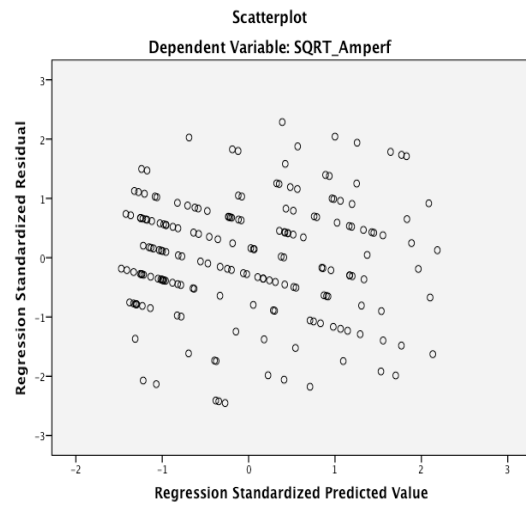
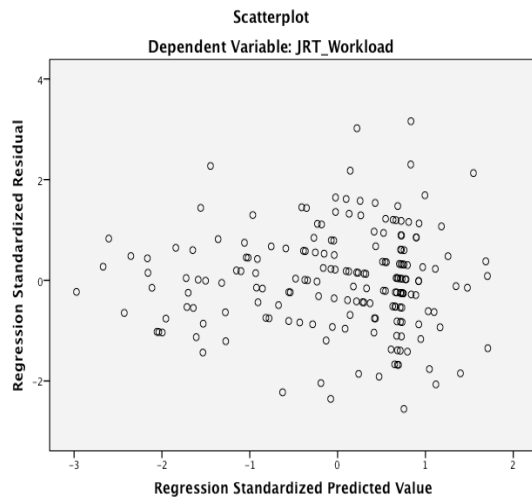
Dependent Variable: LnU² 11 (Conflict)

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-3.684	.291		-12.643	.000
MPM use	-.071	.056	-.157	-1.278	.203
LO use	.053	.119	.040	.440	.660
Org.Cult.	-.005	.007	-.088	-.726	.469
1 (MPM use) (LO use)	.025	.025	.124	.968	.334
(MPM use) (Org.Cult)	.000	.001	-.036	-.353	.725
(LO use) (Org.Cult)	.005	.003	.203	1.608	.110
(MPM use) (LO use)(Org.Cult.)	.000	.001	-.061	-.519	.605

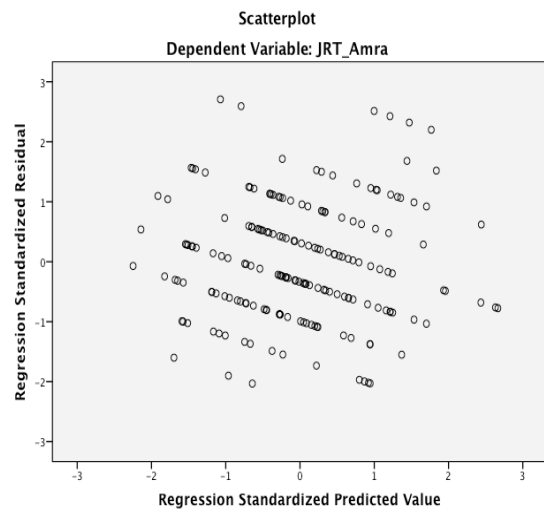
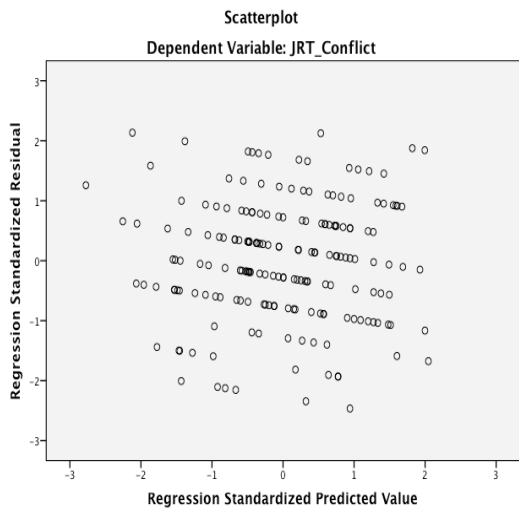
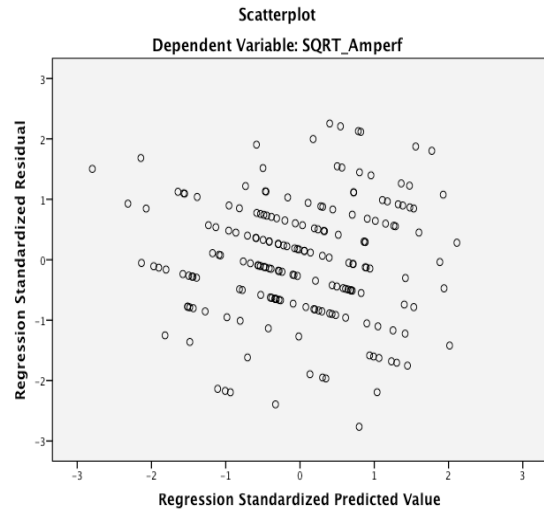
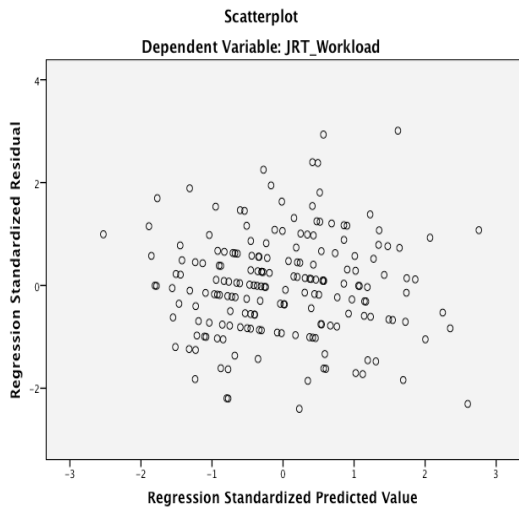
Dependent Variable: LnU² 12 (Amra)

4. Linearity (Residual Scatterplots)

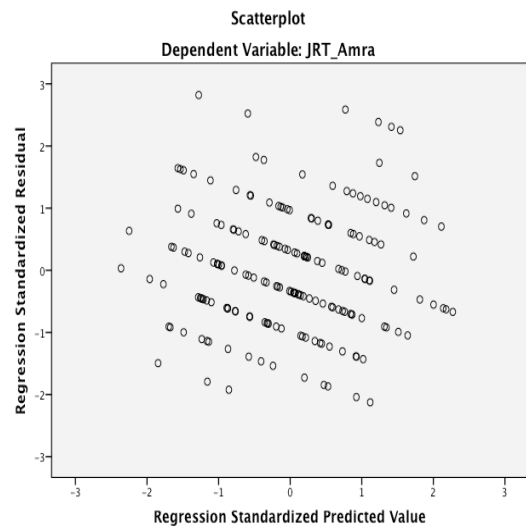
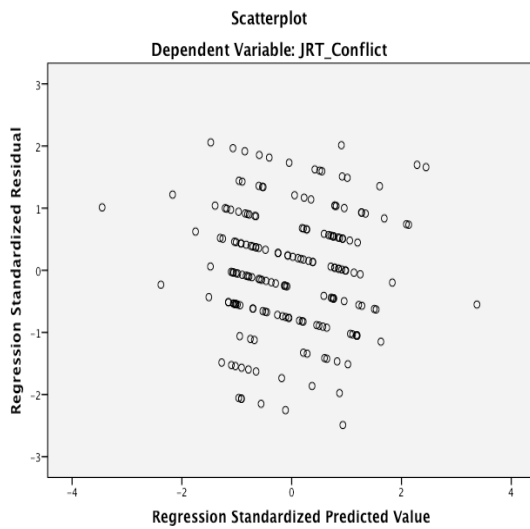
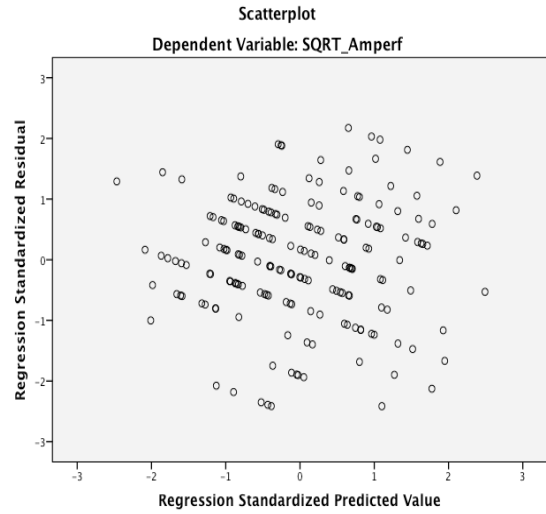
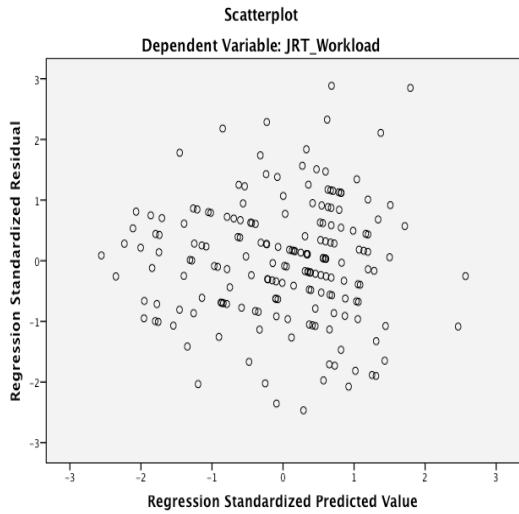
The Two-way Interaction between Multiple Performance Measures Use and Leadership Orientations Use on Job-related Tension Dimensions



The Two-way Interaction between Multiple Performance Measures Use and Organizational Culture on Job-related Tension Dimensions



The Three-way Interaction between Multiple Performance Measures Use, Leadership Orientations Use, and Organizational Culture on Job-related Tension Dimensions



Appendix 8 Correlations between Variables

		Correlations						
		JRT_	JRT_	JRT_	JRT_	MPM	LO	Org.Cult.
		Workload	Amperf	Conflict	Amra	use	use	
JRT_Workload	Pearson	1	.337**	.458**	.266**	-.131	-.179*	-.171*
	Correlation							
	Sig. (2-tailed)		.000	.000	.000	.073	.014	.019
	N	189	189	189	189	189	189	189
JRT_Amperf	Pearson	.337**	1	.367**	.445**	-.272**	-.356**	-.199**
	Correlation							
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.006
	N	189	189	189	189	189	189	189
JRT_Conflict	Pearson	.458**	.367**	1	.228**	-.161*	-.151*	-.128
	Correlation							
	Sig. (2-tailed)	.000	.000		.002	.027	.039	.079
	N	189	189	189	189	189	189	189
JRT_Amra	Pearson	.266**	.445**	.228**	1	-.376**	-.283**	-.119
	Correlation							
	Sig. (2-tailed)	.000	.000	.002		.000	.000	.103
	N	189	189	189	189	189	189	189
MPM use	Pearson	-.131	-.272**	-.161*	-	1	.493**	.198**
	Correlation				.376**			
	Sig. (2-tailed)	.073	.000	.027	.000		.000	.006
	N	189	189	189	189	189	189	189
LO use	Pearson	-.179*	-.356**	-.151*	-	.493**	1	.227**
	Correlation				.283**			
	Sig. (2-tailed)	.014	.000	.039	.000	.000		.002
	N	189	189	189	189	189	189	189
Org.Cult.	Pearson	-.171*	-.199**	-.128	-.119	.198**	.227**	1
	Correlation							
	Sig. (2-tailed)	.019	.006	.079	.103	.006	.002	
	N	189	189	189	189	189	189	189

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).