HOW DO YOU MANAGE THE PRESSURE?

- How time, type, complexity and cultural diversity affects the relationship between leadership styles and project success

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ABSTRACT

The study examines the relationship between project leadership styles and success when affected by pressures such as time, project type, complexity and cultural diversity. The research examines the two well-known leadership approaches of transformational- and transactional leadership, and argues that transactional leadership, which has less focus on the leader-follower relationship, is more suitable and successful in projects with limited time. The transformational leadership style, which has more focus on vision and relationship between the followers takes time to build, and is therefore more successful for long-term projects. In order to examine this, a questionnaire was developed and sent out to 56 project leaders around the world. Findings indicate that time in projects have a negative effect on project success, and that both transformational and transactional leadership style has a dampening effect on this negative relationship, hence increasing the success. Furthermore, the study finds strong correlation between the two leadership styles, indicating that these should not be seen as two different attitudes, as leaders can show behaviors from both the transformational and transactional leadership style, possibly explaining the similar dampening effect. No further significant moderating effects were found in the variables project type, complexity and the project’s cultural diversity.

Keywords: Cultural Diversity; Complexity; Leadership; Project Management; Project Success; Project Type; Time Pressure; Transactional; Transformational
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1 INTRODUCTION

1.1 Background

“There is nothing more perishable than an airline seat – unless it is time on a project.”

- Joy Gumz

The area of Project Management has been a topic of academic research for several decades, but has become more popular during the last decade (Söderlund, 2004). This revived interest for Project Management could stem from the fact that more and more work in organizations are performed through the use of project teams (Söderlund, 2004), often solving specific tasks during a limited amount of time (Turner & Müller, 2010). However, how this limited time is connected to the leadership aspect, and how this affect project success has not been targeted extensively in academic research (Turner & Müller, 2005).

Due to the competitive environment, firms need to create and deliver new innovations, value for customers and stakeholders, and competitive advantage, within limited time and minimal budget in order to stay alive. Therefore, by reacting fast to the market demands and stay on the top, special workforces are often created with top talents from different backgrounds or skills, having one goal to achieve. These special workforces are referred to as project groups, “[…] 80 percent of global executives believed having project management as a core competency helped them remain competitive during the recession” (Das et al., 2013:23).

Although the concept of work performed in short-term projects has been a popular topic of research during the last decade, the leadership aspect in project management has not been targeted extensively in this specific field of research (see Turner & Müller, 2005 for a review). Academics have suggested that project managers competencies is related to projects success, that specific leadership styles is appropriate for multicultural project teams and that project managers prefer task-oriented leadership styles over people-oriented leaders, but these factors have not been studied extensively in the literature (Müller & Turner, 2007; Turner & Müller, 2005). These authors states three possible reasons for this neglect; (1) studies conducted did not include respondent impact, just project manager impact, (2) the studies did not actually measure project manager impact, thus were not recorded and (3) project managers simply have no impact (Turner & Müller, 2005 in Nixon et al., 2011). Researchers who have assessed the importance of
leadership style as an important factor for project success in recent years believe that project managers leadership style will have an effect on the outcomes of the project team (Geoghegan & Dulewicz, 2008; Müller & Turner, 2007, 2010), since “[...] the overwhelming view in the literature is that leadership performance is significantly important in determining project outcome” (Nixon et al., 2011:213).

Certain leadership styles have proved to be efficient in more normal, continuous work environments, however, it is unclear how these styles could be efficient in work performed in project teams. For example, academic research has shown that the positive effects of transformational leadership, where the leader focuses on enhancing the relationship with the followers (Bass, 1990), has been hard to prove in project settings (Keegan & den Hartog, 2004), whereas other studies has shown that project managers often adopt a people-focus (Mäkilouko, 2004) or relationship-oriented leadership style (Lee-Kelley et al., 2003), which have much in common with the transformational approach. Although some leadership styles have proved to be more efficient than others in specific project teams, this research area has often been inconclusive (House & Podsakoff, 1994; Müller & Turner, 2007).

An important difference between work performed in projects as compared to regular work settings is the limited time frame in projects. Time perspectives have been a part of the leadership research (see Bluedorn & Jaussi, 2008 for a review), but this research has generally focused on the more continuous work settings. The notion of time pressure in project leadership on the other hand, has not been targeted explicitly in the project leadership literature. Many studies of leadership have not considered how the time pressure can influence, for instance, transformational leadership, where the leader-follower relationships could be different depending on the period of time the individuals have been working together, hence “[...] the time period during which the leadership takes place will influence the type of leadership viewed as most effective and/or needed” (Bluedorn & Jaussi, 2008:655). Recent studies have to a greater extent focused on organizational context and which leadership styles is the most appropriate depending on the complexity of the organization or task (Dulewicz & Higgs, 2005). While it is important to consider the organizational factors such as project type and project complexity (Müller & Turner, 2007), these studies do not consider the time dimension explicitly, a factor that is critical, especially in projects that are often performed on a short-term basis (Turner & Müller, 2003). Becoming an efficient leader often means developing more personal relationships with the
followers, a prerequisite of being a transformational leader, and these relationships takes time to develop. Furthermore, since individuals from different nationalities and cultures often have different perceptions of an effective leader (Ergeneli et al., 2007; House et al., 2004; Zander & Butler, 2010), the multicultural aspect on the project team puts a greater pressure on the leader, requiring him/her to become more involved on an individual level.

1.2 Research Problem

One cannot justify an ‘ideal’ leadership style when managing a project team, since there are often several factors that can have a significant impact on the preferred leadership style in order to meet the project's targets (Müller & Turner, 2007). Much research has been focused on non-project based organizations, regarding the relationship between leaders and followers given different leadership styles. The most common results indicate that a transformational leadership style fosters and improves the leader-follower relationship, thereby improving the employee motivation and efficiency, thus reaching success (Barling et al., 1996; Dvir et al., 2002; Lowe et al., 1996; Waldman et al., 2001). Since most of these earlier studies have focused on non-project settings, many of the advantages of a transformational leader have been hard to prove in project settings, thus there has been lack of empirical evidence supporting the transformational leadership style in project groups as favorable (Keegan & den Hartog, 2004). Therefore, the positive effects on transformational leadership in project can only be assumed due to the previous research indicating transformational leadership as beneficial.

The time in a project and how this will affect the relationship between leadership style and project success has not been examined explicitly in the academic literature, and is therefore an important aspect to address. Furthermore, aspects such as project type, complexity, and cultural diversity of the project team has an impact on how the leader should behave in order to meet demands (Amabile et al., 2002; Brett et al., 2006; Zander & Butler, 2010; Zander et al., 2012). Previous studies has shown that different leadership styles fits different project types, and that the most suitable leadership style depends on the complexity of the project (Müller & Turner, 2007; Thite, 1999), factors which can affect the relationship between leadership style and project success. In addition, since organizations expansion across borders is becoming an increasingly natural part of organizational growth today, as compared to a couple of decades ago, multicultural teams are more commonly used in organizations (Brett et al., 2006; Connaughton
& Shuffler, 2007; Stahl et al., 2009). The cultural diversity of the project team creates difficulties for the project leader as the team members’ national-, individual-, and group-culture can influence their work behavior (Erez & Gati, 2004). The work behavior will be affected in terms of team members having different perceptions on communication styles, working methods, attitudes toward reward systems, and ways of measuring success (House et al., 2004). The project leader needs to be aware of these cultural differences in order to be an efficient and successful leader.

Therefore the question remains if leaders with limited time in projects always have sufficient time to develop these relationships in order to act as fully transformational leaders and reach high project success. Perhaps a more efficient approach to leadership in time constrained projects would be to act more transactional, which would not require as much time and effort as compared to a transformational approach, and reach the targets more efficiently.

1.3 Research Purpose

The research purpose is to examine how each of the following aspects; time, project type, complexity and cultural diversity, will affect the relationship between leadership style and project success.

There is a lack of previous studies examining how the time aspect affects the relationship between leadership style and project success, this study will argue that transactional leaders will be more successful than transformational leaders in projects with high time pressure. Therefore, the central aim and contribution of this research is to examine how the time pressure combined with leadership style will affect the project success. Furthermore, the study will also investigate if project type, complexity, and cultural diversity will affect the relationship between the leadership style and project success.
2 THEORETICAL BACKGROUND AND HYPOTHESES

2.1 Research Model

The theory section of the study will be based on a research model originating from Müller and Turner’s (2007) study, shown in Figure 1. The model has been modified for this study, and represents the different variables that will be presented. The model consists of; (1) leadership style (transactional and transformational) as the independent variable, (2) project success as the dependent variable, and (3) time, project type, complexity, and cultural diversity as the moderating variables.

![Research model showing the moderating effects on the relationship between the independent and dependent variables (based on Müller and Turner, 2007)](image)

The theory section will follow the structure of Figure 1 and define each variable that the research model is made up of. First, an introduction to project management will be given, as the project setting has some unique characteristics that make work under these conditions different from more continuous work settings. Second, leadership will be defined in order to
know what leadership styles will be examined in project management. Third, since project success can be interpreted differently depending on who is defining ‘success’, the definition of project success factors will be presented according to this study. The last segment presents the moderating variables; time, type, complexity and cultural diversity, which potentially will affect the relationship between leadership style and project success, followed by the proposed hypotheses that will be tested.

2.2 Project Management

It is important to know what distinguishes work in projects and make it different from more regular continuous operations in organizations. The UK Association of Project Management (APM) defines project management as “The planning, organisation, monitoring and control of all aspects of a project and the motivation of all involved to achieve the project objectives safely and within agreed time, cost and performance criteria. The project manager is the single point of responsibility for achieving this” (Atkinson, 1999:8). Furthermore, according to Cohen & Bailey (1997), a project group can be seen as a temporary work force, with individuals uniquely brought together to solve a specific task. Normally these individuals are coming from different divisions, backgrounds, and cultures, and therefore they have never worked together. Project groups have unique goals, where the primary focus is to create an organizational change or add value. Project groups are constantly changing, hence, when a new project is proposed, new talents might replace old talents (Lawler & Cohen, 1992). Since these projects are temporary and have unique goals, they have clear defined start- and end-times, budgets, and resources (Atkinson, 1999; Turner & Müller, 2003).

2.3 Leadership Styles

The topic of leadership is an area that has been under academic study for several decades and is a topic that is subject to trends to a large degree. There are almost as many definitions of leadership as there are people trying to conceptualize the term (Jago, 1982). There are some schools that have gained greater attention in the academic world as compared to others, and these different schools of leadership has been popular during different decades, however, they are often supplements of previous theories. This paper will not describe all the different schools but
only focus on the visionary school of leadership as it is the conceptualization of leadership that this study will apply.

Barnard (1938) was among the first authors to make a distinction between the managerial and the emotional functions of the leader. He proposed two broad dimensions, cognitive and cathetic functions, the first dealing with managerial issues such as guiding and directing while the latter focuses on emotional and motivational functions such as goal-setting and building commitment to a larger moral purpose. The visionary school of leadership is very much a development of the groundbreaking ideas put forth by Barnard. The groundwork for the visionary, or charismatic, school was conceptually developed by Burns (1978) and has been extensively studied during the 80's and 90's (see Bass; 1985; Bass 1990; Judge & Piccolo, 2004). This school distinguishes between two broad dimensions of leadership, the transactional and the transformational approach. There is a strong link between the transactional approach and Barnard's cognitive aspects and between the transformational and the cathetic aspects (Turner & Müller, 2005). The transactional and transformational dimensions of the visionary school will be described further below.

2.3.1 Transactional Leadership

The theory of transactional leadership was first introduced, together with the transformational leadership theory, by Burns (1978), considering political leadership. Since then, this concept has been extensively researched by academics (Judge & Piccolo, 2004). The concept of transactional leadership builds upon an exchange between the leader and the followers, where the leader gives the followers something they want, in exchange for something the leader wants (Kuhnert & Lewis, 1987). The nature of exchange between followers and leaders is what distinguishes transactional leaders from transformational (Conger and Kanungo, 1998). Transactional leadership is therefore an approach where the leader offers wage increases, advancement and/or other rewards to followers when they do a good job, and penalize bad work (Bass, 1990 in Vecchio, 2007).

When assessing transactional leadership there are three dimensions one should consider; contingent reward, management by exception - active, and management by exception - passive (Judge & Piccolo, 2004). Contingent reward is the most important aspect of transactional leadership theory, and can be explained by the leaders behavior to “[...] emphasize and clarify
role and task requirements, and provide followers with material or psychological rewards contingent on the fulfillment of contractual obligations” (Bass, 1998 in Camps & Torres, 2011). The leader discusses with followers what is being expected from them, clarifies how to reach the goals, and the reward for successfully achieving them (Walumbwa et al., 2008).

The second and third dimension, management by exception, is a leadership approach where the leader is focusing on followers’ mistakes, on delaying decisions and/or avoiding decisions until something has gone wrong in the project (Howell & Avolio, 1993). Management by exception can therefore be divided into two different aspects, active and passive (Hater & Bass, 1988). Active management by exception refers to situations where the leader monitors the followers’ performance in order to be able to step in and make corrections before problems occur, hence a proactive approach (Avolio et al., 1988; Howell & Avolio, 1993). In contrast, passive management by exception refers to situations where the leader steps in and intervenes only after mistakes have been made and the leader recognizes that standards are not met, often when the task is already completed (Howell & Avolio, 1993), hence the perceived feedback for the followers will usually consist of punishment.

2.3.2 Transformational Leadership

The transformational theory has similarities with the charismatic leadership theory that was provided by House (1977) who argued that charismatic leaders has the ability to influence followers through behaviors that increases trust and confidence in the leader among followers. Bass (1985) built upon Burns’ (1978) conceptualization but opposed the notion that a leader exists somewhere on a continuum from a transactional to a transformational approach, and argued that the two styles are separate concepts, and that the best leaders adopts behaviors from both concepts in order to become effective. Bass introduced the concept of multifactor leadership (Bass, 1985; Bass et al., 2003), upon which most studies in the field of this leadership approach is based upon (Woerkom & de Reuver, 2009) and research has shown four components of transformational leadership (Antonakis, 2001; Avolio et al., 1999; Bass et al., 2003). The first component is idealized influence, which means that followers admire, respect and trust the leader and identify with him/her. A part of this is the leaders ability to put the followers needs in front of his/her own. Second, a leader whose behavior motivates the followers by providing meaningful challenge to the work is engaging in inspirational motivation. In its optimal form this
will lead to team spirit, enthusiasm and optimism through a positive vision of the future state. The third component is intellectual motivation, where the leader stimulates the followers’ to be innovative and creative, through ways of approaching situations in new ways and not afraid of thinking outside the box. The last component of transformational leadership is individualized consideration, whereas the leader considers each individual follower's need for achievement and growth through acting as a coach/mentor, which should develop followers to higher levels of potential (Bass et al., 2003).

Transformational leadership was first studied in an organizational change context, where the transformational approach was found to be efficient when guiding individuals in an organization through a change process (Bass, 1985). Although this was the initial setting in which the leadership style was studied, research has also proved the approach to be efficient in other settings. Transformational leadership has proved to be positively related to subordinates' extra effort and satisfaction (Yammarino & Bass, 1990), on direct followers’ development and indirect followers’ performance (Dvir et al., 2002) and team effectiveness (Özaralli, 2003). Transformational leadership has also been theorized to be efficient in multicultural settings for several reasons, since this style is associated with a sense of social responsibility and focus on the interests of the collective rather than the self-interest of the leader (House & Aditya, 1997). Leaders who adopt this thinking can be expected to function well across different cultures (Woerkom & de Reuver, 2009). Woerkom & de Reuver (2009) showed that traits such as cultural empathy, open-mindedness and social initiative proved to be strong positive predictors of transformational leadership.

2.3.3 Leadership in Project Groups

Previous research regarding leadership in projects and how the leadership styles affect project success has pointed towards the importance of distinguishing between project leadership and project management (Nixon et al., 2011). Project management has often been referred to the broader context of variations of planning, organizing, leading, controlling, and staffing (Strang, 2007). More specifically, project management is often defined as the planning and organizing of the project activities through decision making processes that should improve the efficiency and effectiveness of the projects (Anantatmula, 2010). Leadership is a part of management, but is defined as the process of guiding others towards the attainment of project objectives (Nixon et al.,
and follower motivation (Strang, 2007). In the achievement of successful project outcomes, project management always involves effective leadership (Nixon et al., 2011).

Much of the research referred to in earlier sections of the paper has been focused on non-project based organizations, and although the positive effects of transformational leadership in projects can be stated in theory, there has been a lack of empirical studies proving this relationship (Keegan & den Hartog, 2004). It is possible that a transformational approach can lead to different outcomes when studied in project groups as compared to more traditional, long-term, leadership situations. As project groups operate under short periods of time, with new individuals and leaders for each project, this could undermine a strong identification between the leader and the followers according to Keegan and den Hartog (2004). As this identification is an important aspect of transformational leadership, this style would be harder to adopt in project settings. Keegan and den Hartog (2004) showed that relationships between this leadership approach and the outcomes tend to be less strong among followers in project teams as compared to followers in more regular business settings. Prabhakar (2005) showed empirically that leaders who score high on transformational dimensions such as inspirational motivation, indicate successful results in projects, which is also true for idealized influence. On the contrary, Strang (2005) presented results showing that transformational leadership was not necessary in order to reach positive outcomes in projects, but that transformational characteristics had a positive impact on leader-follower relationships and follower satisfaction. Müller and Turner (2007) reached the conclusion that vision, a fundamental part of transformational leadership, could be detrimental for project success in some project types. They explain this by arguing that the project leaders need to focus on the task in order to achieve the targets of the project. However, there seems to be some contradiction in this study, as transformational competencies such as sensitivity and communication was found to be important factors for project success (Müller & Turner, 2007). In summary, the relationship between leadership and successful projects has been hard to prove empirically and the findings have been inconclusive in the academic research on the topic.
2.4 Project Success Factors

A string of research that has been widely discussed in the academic literature concerning project team management is how success in projects should be measured (Ika, 2009). The academic research regarding critical success factors in projects is still developing (Müller & Judgev, 2012), and no common denominators for project success has been absolutely defined. Project management success is a vague concept to measure since each individual involved in the project have a different perception and understanding of what success is. Furthermore, some authors argue for the need to have a distinction between project success and project management success (Cooke-Davies, 2002). Whereas project success is measured upon the overall objectives of the project, the latter is measured on the widespread and traditional measures of performance such as cost, time and quality. Furthermore, some authors argue that there is a distinction between project success criteria, on which success or failure of the project will be measured, and success factors, where the inputs to the management system that directly or indirectly leads to the success of the project is studied (Cooke-Davies, 2002).

The oldest used criteria for project success has been the “iron-triangle”, consisting of time, cost and quality (Atkinson, 1999; Cooke-Davies, 2002; de Wit, 1988; Ika, 2009; Jugdev & Müller, 2005; Jugdev et al., 2001). Although these measures are important, they do not cover the full range of factors needed to measure success in modern projects (Atkinson, 1999; Ika, 2009). According to Macleod et al. (2012), the measures are ambiguous and success on the factors is not always connected with success in the project, and vice versa, in addition, significant aspects, such as internal and external stakeholders, are not considered. One can define success both internally, in terms that the project was successfully finished before the deadline, and externally, where the focus is on the consumer, public, or the stakeholders, which follows a user satisfaction approach (Cleland & Ireland, 2004). When evaluating a project, one must consider the overall objectives of the particular project (Baccarini, 1999; Ika, 2009), with a distinction between project’s success and the success of the end product. Focusing on the outcome of the project will make it possible to consider more external factors, such as product use, user or client satisfaction and benefits to users or clients (MacLeod et al., 2012). Pinto and Slevin, two of the most important researchers in this area (Müller & Judgev, 2012) were among the first researchers stating that success had to be measured in two key themes, the project and the client (Pinto &
Slevin, 1988). These external stakeholders will have different subjective measures of success, depending on the area of operations and critical factors for the specific company (MacLeod et al., 2012). Therefore, the art of success, in addition of having the external stakeholders in mind, is to efficiently use the allocated resources, wisely use the assigned budget, and reach the goals before the deadlines, therefore all of these elements are always interdependent, and creates a complex reality for the project leader (Atkinson, 1999). This interdependency usually creates a challenge for the project manager to efficiently manage the project team members in order to achieve the pre-set goal on time. Project managers need to understand the complexities and the several barriers that can appear so that they can develop a leadership style that can efficiently manage the team having these elements in mind in order to create success (Turner & Müller, 2003).

To summarize, based on the presented theory, this study will measure success both from an internal and an external perspective, which defines success on the following criteria; project being on budget and on time, in addition considering the end-user of the project and the usability of the projects outcomes among these actors.

2.5 Moderating Factors

The three moderating variables in the research model will be theorized below, beginning with the time variable, followed by the type and complexity and lastly the cultural diversity. The hypotheses are presented after each moderating variable.

2.5.1 Leadership and Time

A large body of research has provided evidence for the gains of the transformational leadership approach, both in culturally homogeneous and heterogeneous groups of followers, however, the findings are very inconclusive in projects settings. In addition, what is important to be remembered, which does not appear to have been considered in academic research explicitly, is that in order to be effective, this approach demands a considerable amount of time in order to work well.

The four components of transformational leadership does all demand that the leader knows his/hers follower well. Idealized influence requires the leader to know what traits are considered admirable and trustworthy, inspirational motivation demands that the leader realizes what motivates the individual and what actually constitutes a positive future vision. Furthermore,
intellectual motivation does also require leaders to know their followers and their respective cultures well in order to stimulate them in an efficient way. Lastly, individualized consideration, requires the leader to think of each individual follower as a unique human being and consider their individual needs in order to make them develop. All these aspects take time to achieve, and this time is needed in order to become an efficient transformational leader. As work performed in project groups is subject to limited time, the leader might feel stressed and unable to take the time to consider and motivate each individual on a deeper level. Halverson et al. (2004), showed in an experiment that leaders who were subject to stress factors did experience a decrease in charismatic behaviors and task performance, and the opposite occurred for individuals in non-stress conditions. As charismatic leadership shares some dimensions with transformational leadership, such as sensitivity to followers’ needs and expectations, formulation of an idealized future vision and providing strong articulation, one could assume that stress would have detrimental effects on transformational leaders as well. Other academics (Sosik, 1995 in Jung & Avolio, 2000) have reported a negative relationship between transformational leadership and performance regarding an idea generation task with a short time frame. In this case, the introduction of transformational leadership might have produced conflicting goals between generating a great number of total ideas in a short amount of time or a smaller number of high quality ideas. This suggests that transformational leaders need longer time in order to be successful, therefore the moderating hypothesis will be the following:

Hypothesis 1: A transformational leadership style in combination with time pressure has a negative effect on project success.

Contrasting this to the transactional approach, finding out what rewards are necessary in order to motivate individuals should take less time, and does not require as much individual consideration. Bryman et al. (1988) found that leaders in construction projects adopted a more transactional leadership approach when time was short in projects, empirical results that give support to the theoretical stance that transactional leadership might be more efficient when time in projects is insufficient. Kerr et al. (1974) proposed that the greater the amount of pressure, for example because of limited time, “[…] the greater will be subordinate tolerance of Structure and the greater will be the (positive) relationships between Structure and satisfaction and performance.
This proposition is based on a leadership framework based on two different dimensions, consideration and initiating structure. Consideration could be linked to the transformational approach as it conceptually requires mutual trust and consideration of follower’s feelings. Initiating structure requires the individual to define and structure his role and those of his followers toward the attainment of goals, more similar to the transactional approach. This also implies that a transactional approach could be efficient and more tolerated by followers when there is a big time pressure in projects. Stordeur et al. (2001) showed that contingent reward, a strong predictor of transactional leadership, was associated with lower levels of burnout, together with the dimensions of transformational leadership, which implies that when there is a time pressure, a transactional approach could have similar effects as the transformational style, although not requiring as much time to develop. However, Bass (1998) argued that transactional behaviors might be unlikely to reduce stress among followers in the long run. Considering the fact that projects often are limited in time, a transactional approach might be favorable in this setting. Podsakoff et al. (1990) argued that the intellectual stimulation dimension of transformational leadership might produce good results in the long run, but in the short run, leaders who urge or exhort his/her followers to search for new ways and better methods of doing their job can create ambiguity, conflict and other sorts of stress among followers. This would imply that projects with a short time frame, transformational leadership might be detrimental, whereas a transactional approach might be more practical. In line with these findings, Podsakoff et al. (1996) found that contingent reward behavior can reduce uncertainty, raise efficacy expectations and help reach agreement on what needs to be done by clarifying performance expectations in the short run. Therefore, considering short-term projects, transactional leaders are argued to be more successful than transformational leaders, hence the moderating hypothesis is:

**Hypothesis 2**: A transactional leadership style in combination with time pressure has a positive effect on project success.

### 2.5.2 Type

Keller (1992) studied leadership in R&D projects and found that transformational leadership was more efficient in research projects as compared to projects that focused on development. Müller
and Turner (2007) argued that although vision would be detrimental for IT projects, a transformational leadership style could still be suitable since self-awareness and communication are important factors. Furthermore, Thite (1999) tested the visionary school of leadership on leaders of IT-projects and found that both transformational and transactional leadership was positively connected with projects success. This study did also show that leaders in IT projects might need to adopt other leadership styles, such as technological leadership, in order to develop the followers full potential (Thite, 1999). As transformational leadership is a concept that from the beginning has been developed in an organizational change context, this style has been proposed to be most efficient in organizations going through a change process. Therefore, more complex projects that deal with change aspects should require a more transformational approach (Eisenbach et al., 1999) as opposed to more standardized and simple projects where a transactional approach might be more practical. Viator (1991) showed that transformational leadership was more common in public accounting functions that were less standard intensive. Therefore, the following hypothesis is stated, which examines the moderating effect on success for each leadership style in combination with each project type:

**Hypothesis 3:** Different leadership styles in combination with different project types have an effect on project success.

### 2.5.3 Complexity

Müller and Turner (2007) conducted interviews in their study, which showed that complexity of the project was an issue when choosing leaders for more complex projects. Thite (1999) interviewed top managers, where the majority felt that there was no ‘ideal’ leadership style that was suitable for all projects, and that it should vary depending on the complexity of the project. Yang et al. (2011) found that project complexity had a moderating effect on the relationship between team communication and cohesiveness, and overall project success. These aspects are closely connected to several dimensions of transformational leadership (Dionne et al., 2004). Furthermore, previous studies have indicated that leadership style and followers creativity are connected, where Jung (2001) showed that transformational leadership was closely associated with higher follower creativity. Highly complex projects would require more creativity among the followers as compared to simpler projects thus a transformational leadership approach would
be more practical in highly complex projects. Therefore, transformational leaders are more suitable in projects that are highly complex, hence the following hypothesis is stated:

**Hypothesis 4:** A transformational leadership style in combination with projects with high complexity has a positive effect on project success.

### 2.5.4 Cultural Diversity

Multinational corporations using projects might often put together a project team with individuals from different parts of the organization, and since these corporations have a multinational scope, these teams could consist of team members with different national and cultural backgrounds. Some authors argue that the increasing use of multinational projects teams is due to the fact that they often outperform monoculture teams (Earley & Mosakowski, 2000). Multicultural teams have been shown to generate more ideas of higher quality in brainstorming tasks (McLeod & Lobel, 1992) and identifying problems and generating solutions (Watson et al., 1993). The better performance of multicultural teams does to a large extent depend on the appropriate management (Ochieng & Price, 2009) and leadership (Mäkilouko, 2004) of these teams. Gassman (2001) also argues that cultural diversity increase innovativeness, but only if the management is culturally sensitive. Cultural diversity has also been argued to bring some negative consequences. Multicultural teams can experience mistrust, stereotyping, communication problems, and stress (Adler, 1991 in Iles & Hayers, 1997) much depending on the leadership of these teams. Stahl et al. (2009) performed a meta-analysis and found that cultural diversity increased creativity but could lead to increased conflict. Furthermore, in an international setting, English is most often used as lingua franca, which is “[...] the common language of choice, among speakers who come from different linguacultural backgrounds” (Jenkins, 2009:200). This could create problems in a multicultural team because of cultural barriers that occur from the language differences (Brett et al., 2006), something that leaders needs to be aware of and take into consideration.

Ochieng and Price (2009) performed a study in multicultural project groups consisting of individuals from the United Kingdom and Kenya. This study found that responsive, inspirational, participative, and charismatic leadership styles in projects were preferred by many respondents. All these styles could be seen as similar to transformational leadership in the broader visionary...
school. Mäkilouko (2004) argues that leaders of multicultural project teams who are relationship-oriented functioned better in project teams as compared to task-oriented leaders. Relationship-oriented leadership is closely connected to transformational leadership, while the task-oriented approach share many similarities with the transactional approach.

An individual who are leading a multicultural team needs to be aware of these issues in the everyday work, therefore handling these issues will require a transformational leader, thus the following hypothesis is proposed:

**Hypothesis 5:** A transformational leadership style in combination with cultural diversity has a positive effect on project success
3 METHOD

3.1 Quantitative Research and Questionnaire Studies

The research is explanatory in nature since the purpose is to show how the variables time, project type, complexity, and cultural diversity of the project team, moderates the relationship between leadership style and project success. The stated hypotheses in the paper require statistical analysis of several variables and their connection with each other, therefore quantitative data collection is needed. An advantage of quantitative measures is that it provides the researcher with data that could show patterns that extends across a large number of situations (Firestone, 1987). Furthermore, “[...] the use of many sites increases confidence in the generalizability of results although technically generalizability depends upon the randomness and representativeness of the sample selected” (Firestone, 1987:20). Moreover, quantitative studies allow the investigator and the investigated phenomena to be independent entities (Sale et al., 2002). The goal of quantitative studies is therefore to measure and analyze the causal relationships between variables within a value-free framework (Denzin & Lincoln, 1994).

The quantitative data collection for this research will be done through a self-administered web-based questionnaire. The target population is project leaders in general, and the sample was gathered by contacting Project Management Institute (PMI) and individual firms in order to send the questionnaire to a suitable subset of the population. The use of a questionnaire is a good way to collect data since “[...] it provides an efficient way of collecting responses from a large sample prior to quantitative analysis” (Saunders et al., 2009:361). In addition, a positive aspect of web-based questionnaires is that there is a greater chance of targeting the right person, since it is sent to the individuals personal e-mail address (Witmer et al., 1999 in Saunders et al., 2009). However, although a questionnaire is an efficient tool for collecting a large amount of data in an efficient method, one should be careful when designing the questionnaire in order to avoid pitfalls (Boynton & Greenhalgh, 2004), such as problems with the validity of the different measures (Saunders et al., 2009). Some academics have expressed concerns regarding web-based surveys, for instance that individuals in Internet samples are unmotivated (Buchanan, 2000), something that has however proven to be wrong (Gosling et al., 2004). Considering that the
questionnaire in the study is partly based on existing so called pen-and-pencil questionnaires, it is important to notice that some authors have expressed concerns about web-based questionnaires (Epstein et al., 2001) regarding problems when transforming a pen-and-pencil questionnaire into a web-based questionnaire, believing that it would still be the same questionnaire (Buchanan et al., 2005). These authors provide empirical evidence suggesting that some questionnaires psychometric properties cannot be taken for granted when doing a transition from pen-and-pencil formats to a web-based format (Buchanan, 2002; Buchanan & Smith, 1999; Fouladi et al., 2002). Epstein et al. (2001) tested this in a psychological research setting and did not find any differences in responses when comparing pen-and-pencil surveys to web-based surveys. Olsen (2009) found no differences between web-based surveys and mail-surveys and argued for the benefits of surveys conducted through a web-based format. Similarly, Cole et al. (2006) tested this argument for the Multifactor Leadership Questionnaire (MLQ), which is a well known questionnaire measuring the leadership styles developed by Bass & Avolio (1995), in a statistical study of the instrument. Their findings show that the psychometric properties did not change in any major way when transferring the MLQ from a pen-and-pencil format to a web-based platform. Their results suggest that “[...] there are minimal measurement differences for well-developed, psychometrically sound instruments whether administered in a paper-and-pencil or online format” (Cole et al., 2006:364), thus the web-based survey format in this study should not affect the findings of the questionnaire.
3.2 Method Process

The data design and collection process is divided into three parts, Figure 2 is presented below in order to show a clear overview of the method process:

**Part 1** The first part describes how the different variables are conducted for the study, how and why the questions have been created in according to the five dimensions (leadership, project success, time aspect, project setting, and culture).

**Part 2** The second part describes the developed questionnaire from the five aspects stated in Part 1. This evolved questionnaire that will be used for the research is called the Leadership and Time Dimension Questionnaire (LTDQ), which consist of 67 questions.

**Part 3** The third part will describe how the data gathering process was executed and how the questionnaire was distributed to the individual firms and PMI chapters and how they provided it to their members/employees.

*Figure 2: Method process*
3.3 Part 1

3.3.1 Leadership

In order to assess the leadership style of project leaders in the study, a questionnaire was developed that measures transactional and transformational leadership in eight different dimensions suggested by Bass et al. (2003), presented in Table 1. The questions can be found on Appendix 1. Transactional leadership is measured through contingent reward behaviors (questions 23, 34, 39 and 43) and behaviors that would suggest active transactional management by exception (questions 22, 40, 42 and 48) as well as passive management by exception (questions 26, 32, 35, and 41). Transformational leadership was measured through five dimensions; Idealized Attributes (questions 20, 31, 33 and 38), Idealized Behaviors (questions 21, 25, 28 and 37), Inspirational Motivation (questions 27, 36, 44, and 50), Intellectual Stimulation (questions 45, 47, 52 and 53) and Individual Consideration (questions 29, 30, 46 and 51). This section in the questionnaire consists of 35 questions on a 5-point Likert-scale, which is a measure from ‘not at all’ to ‘frequently, if not always’. The ratings on each answer in the different dimensions were added together and divided by the number of questions in order to get a mean score, indicating if the leader shows transactional or transformational behaviors.

The leadership questionnaire in this research was influenced by the Multifactor Leadership Questionnaire (Bass & Avolio, 1995). The insights from the MLQ have fostered the ideas to generate leadership questions with more focus on project settings. The MLQ has been extensively used in different studies and the validity of the instrument and its sub-scales has been tested in the academic literature with good results (Antonakis et al., 2003) and “[...] is considered the best validated measure of transformational and transactional leadership” (Ozaralli, 2003:338).
Table 1: Leadership dimensions measuring the leadership styles (Bass et al., 2003)

<table>
<thead>
<tr>
<th>Leadership Style</th>
<th>Dimensions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational</td>
<td>Individual Consideration</td>
<td>29, 30, 46, 51</td>
</tr>
<tr>
<td></td>
<td>Intellectual Stimulation</td>
<td>45, 47, 52, 53</td>
</tr>
<tr>
<td></td>
<td>Inspirational Motivation</td>
<td>27, 36, 44, 50</td>
</tr>
<tr>
<td></td>
<td>Idealized Behaviors</td>
<td>21, 25, 28, 37</td>
</tr>
<tr>
<td></td>
<td>Idealized Attributes</td>
<td>20, 31, 33, 38</td>
</tr>
<tr>
<td>Transactional</td>
<td>Contingent Reward</td>
<td>23, 34, 39, 43</td>
</tr>
<tr>
<td></td>
<td>Management by Exception Active</td>
<td>22, 40, 42, 48</td>
</tr>
<tr>
<td></td>
<td>Management by Exception Passive</td>
<td>26, 32, 35, 41</td>
</tr>
</tbody>
</table>

3.3.2 Project Success

Pinto and Slevin (1988) stated that success had to be measured in two key themes, the project and the client (Müller & Judgev, 2012; Pinto & Slevin, 1988). These authors developed the Project Implementation Profile (PIF), a questionnaire taking these two themes into consideration. The project theme was covered by the most common measures of project success, being on schedule, on budget and the performance of the end product. Client measures included the usage of the project, client satisfaction with the performance of the project and the impact of the project on organizational effectiveness. This questionnaire has later been elaborated upon by other authors (Geoghegan & Dulewicz, 2008) who developed a Project Success Questionnaire (PSQ), consisting of 12 measures taking both the project and the clients into consideration, which is the measurement of success that will be used in this study. Questions 54, 55, 63 and 67 (Appendix 1) measures success from an internal perspective and the other questions in the project success part of the questionnaire takes the stakeholders’ perspective into consideration. The internal validity of the PSQ is measured through Cronbach Alpha, which is a measurement assessing if the different questions is measuring the same construct (Cronbach, 1951; Tavakol & Dennick, 2011). The PSQ used in Geoghegan & Dulewicz’s (2008) study showed a Cronbach Alpha coefficient of 0,810, which indicate a strong association between the measures (Hair et al., 2003; Nunnally, 1978), since a Cronbach Alpha above 0,7 has been deemed satisfactory, and a result between 0,8 and 0,9 indicate a good strength. Geoghegan (2005) performed a factor analysis on the 12 questions of the instrument. This analysis showed the twelve questions measuring three different factors, the first relating to usability, the second client performance improvement and the third project delivery (Geoghegan, 2005). In the study performed by the aforementioned author, these three factors all showed a Cronbach Alpha between 0,804 and 0,871
The measurements in this model are in many parts similar to the success criteria identified by Müller and Turner (2007, 2010). These authors conducted a survey studying how leadership styles affect the success of projects. In their study, they identified several dimensions that worked as independent variables and influenced results in projects. These dimensions were identified through previous studies and interviews with managers of projects (Müller & Turner, 2007). The dimensions include; overall project performance, meeting user requirements and the projects purpose and the satisfaction of clients, end-users, the project team and other stakeholders. The fit between the factors identified by Müller and Turner (2007) and Geoghegan and Dulewicz (2008) shows that the questionnaire is an efficient way of measuring project success.

### 3.3.3 Time Aspect

The time dimension is the novel moderating variable in this study, thus probably the most important aspect. In order to measure the time pressure in the project, several questions regarding the time aspects were added to the LTDQ. First, respondents were asked to answer how long the project planned time was (question 8, Appendix 1), and how long it actually took to complete (question 9), in order to study whether the planned time was sufficient or insufficient for the project. In addition, questions were added regarding if the given time was sufficient in order to reach the project’s goals efficiently, and if the project would have produced better results if more time had been given (question 10 and 11, Appendix 1).

Furthermore, questions regarding the project leaders perceived stress were added to the questionnaire in questions 15-19. If the leader felt stressed during the project, this could indicate that time was perceived as limited. The questions regarding stress was adopted from the Perceived Stress Scale (PSS), and re-formulated to fit more specifically to the project setting, since the initial questions were of a general construct. Cohen et al. (1983, 2012) developed the PSS in order to measure how unpredictable, uncontrollable and overloading respondents find their lives in general. The PSS originally consists of ten items but only five were used in the LTDQ, since the other five questions did not relate to the time aspect purpose. The Cronbach alpha level has indicated to be between 0.78 and 0.91 in samples tested (Cohen & Janicki-Deverts, 2012). To conclude, the time variable in this study is a composite measure computed
from the above questions, and is therefore a combination of both project time and the stress aspect (PSS).

### 3.3.4 Project Setting

The project setting consists of project type and complexity. Müller and Turner (2007) suggested project type as a moderating variable, largely based on research done by Crawford et al. (2005) and included several project attributes in their study in order to be able to measure the impact of the different project types on leadership style and project success. The questions used in this study will adopt a similar measurement of type of project in order to assess how this might moderate the relationship between leadership style and project success, although it will not be as extensive as the one used in Müller and Turner’s (2007) study. Project type was measured by question 5 (Appendix 1), where the available options were engineering and construction, marketing, organizational change, IT and other.

Complexity of the project considered was also added as a moderating variable by question 7 (Appendix 1), adopted from Müller and Turner (2007). In their interviews they found that the interviewees reported that the project manager's leadership style was an issue when choosing managers for complex projects but not for simple ones (Müller & Turner, 2007). The respondent is asked to rate the complexity of the project on a 3-point scale, low, medium, or high complexity, based on personal opinions on how they felt the level was during the project. This 3-point scale is also used in Müller & Turner’s (2007) study.

### 3.3.5 Culture

Another moderating variable is the cultural factor of the project team. This study will consider culture on a team level, since multicultural teams bring some important implications for the leader that will influence the efficiency of the different leadership styles. Müller and Turner (2007) proposed culture as a moderating variable in their study, but did only measure it in two dimensions, host- and expatriate projects. Therefore, in order to assess how this variable affects the results from the project, questions were added rating the multicultural diversity within the team, if the leader was of the same nationality as the team members, and if differences in nationality created any problems during the project (question 12 and 13, Appendix 1). The respondents can rate the cultural diversity on a 1-10 rating scale, where 1 indicates a cultural
homogenous team, and 10 is highly cultural heterogeneous. This 1-10 rating system is used since there are only two questions in the questionnaire measuring the cultural diversity, hence this scale aims to give more appropriate answers.

3.4 Part 2

3.4.1 Leadership and Time Dimension Questionnaire (LTDQ)

To summarize, LTDQ is the end product specifically created for this research, which was developed from the five aspects in order to create one questionnaire. This questionnaire will be used for the research and will be sent to the sample population. To summarize, the leadership style was examined by questions using the leadership dimension framework. The project success factors are measured by using questions taken from the PSQ with minor wording adjustments to fit the study. Furthermore, the time aspect consisted of questions regarding project time and questions from the PSS, which were modified in order to fit the time purpose. The cultural aspect was generated with general questions about the cultural diversity within the project. To conclude, the final LTDQ questionnaire consists of 5 categories with a total of 67 questions. In order to increase the response rate, comparisons were made between the LTDQ and other questionnaires used in similar studies. The LTDQ was made comparatively shorter than these, for instance Müller & Turner (2010) had 168 questions.

The questionnaire structure is based on a one-page approach, with multiple-choice answers formed on a 5-point Likert scale (Likert, 1932). Research has shown that these scales should be between 5 and 11 categories long (Busch, 1993), but no matter of how many categories are chosen, “Likert-type scales will ultimately yield information concerning the general direction and intensity of respondents' opinions” (Matell & Jacoby, 1971 in Busch, 1993:735). The scale format differs depending on the subject measured in the questionnaire, although all are labeled explicitly, which studies prove to be preferred by respondents (Armstrong, 1987). Furthermore, structuring the answers in this way makes the questionnaire easy to answer for the respondents and makes the time required to complete the questionnaire shorter than if open-ended questions would have been used. In addition, Likert-scale questions are easy to code in order to perform the statistical calculations after the data gathering has been completed. In the design of the questionnaire, a choice was made to provide an odd number of
categories, thus allowing the respondent to be undecided in some parts of the questionnaire. Although this has been theorized to potentially lead to indecisive and muddled data (Busch, 1993), the choice was made in order not to force respondents to answer in a positive or negative direction.

3.5 Part 3

3.5.1 Data Gathering

Since the objective is to focus on project leaders, the main target was to establish initial contact with PMI, “PMI is one of the world’s largest not-for-profit membership associations for the project management profession” (PMI, 2013). PMI consist of different ‘chapters’ representing a country, therefore several chapters were contacted in order to distribute the questionnaire. An introductory e-mail was sent to these chapters, requesting them to collaborate in the study by publishing and distributing the questionnaire among their members, through weekly newsletters, social media sites, and official websites. This method of data gathering is referred to as chain-referral sampling or snowball sampling (Penrod et al., 2003). In addition, in order to avoid sampling only from a professional interest organization, contact was taken with several private firms, providing project leadership services.

However, before publishing the final survey to the PMI chapters and the private companies, a pilot testing was conducted. A consulting firm in Sweden was contacted for the pilot run which included 7 respondents in order to test the survey and receive feedback for possible confusions and difficulties with the questions (Saunders et al., 2009). The consulting firm was chosen since they have many project leaders with defined deadlines, and because personal connections granted access early in the process. In addition, an average survey completion time could be received due to the pilot study, which gave insights to the length of the questionnaire. The pilot testing gave insights on further improvements before the distribution of the surveys, hence some minor adjustments on the questionnaire were made, such as changes in structure/layout, question formulations, and some questions were removed and replaced with new ones.

Once the final survey was completed, it was sent to the PMI Chapters, and became published and distributed among their members. The questionnaire was also sent to gatekeepers
at the private firms, who were given responsibility to distribute it to their employees. The questionnaire was then active for one month.

3.6 Sampling Reliability

The chain-referral sampling method used in this study has been used in several studies published in high ranked project management journals such as International Journal of Project Management (Müller & Turner, 2007; Müller & Turner, 2010). Although this method does not provide the researcher with much control over the sampled population, it is a good way of achieving a large and diverse sample. Since this study does not aim to investigate specific industries or sectors, but to find a general relationship between variables, the chosen sample method is practical for this study. Also, by using this sampling method, it is not possible to establish a response rate in a more efficient approach than stating ‘X’ percent of the individuals who opened the questionnaire completed it.

The initial sampling method is chain-referral sampling (Penrod et al., 2003), a method similar to snowballing (Coleman, 1958), as representatives of PMI chapters and the private firms were asked to distribute the questionnaire to their members and employees. Although chain-referral samples and snowball samples have been argued to be quite similar (Biernacki & Waldorf, 1981) there are some important differences. When using chain-referral sampling “[...] multiple networks are strategically accessed to expand the scope of investigation beyond one social network” (Penrod et al., 2003:102). As both several national chapters of PMI as well as private companies consulting in project management were contacted, the issue of only sampling one narrow network was avoided. This does also limit the problem with bias in the initial source-selection (Penrod et al., 2003), which could cause the sample to become non-representative of the population. Using chain-referral sampling from both interest organizations and private companies reduces the risk of the sample becoming biased towards individuals who have paid money to register a membership in a professional organization. Furthermore, as the population consists of project leaders in general, and not project leaders in specific industries or organizations, using branch organizations to select the sample does not create a bias as they represent project leaders from all sectors. Furthermore, the population does not come from a specific area or nationality and thus the sample can be chosen across national borders and contact was taken with PMI chapters on different continents. Due to these factors, the risk of the sample
becoming too homogeneous is eliminated. Finally, using the project organizations and firms specialized in project management as gatekeepers to the questionnaire, this minimizes the risk of having individuals that are not project leaders answering the questionnaire.

As the data collection is done quantitatively through a questionnaire, the second sample method becomes self-selection sampling, as the individuals who receive the questionnaire either by newsletters, e-mail or through the organization’s web page chose themselves if they want to participate or not. Participation is therefore based on the individuals’ interest in the topic studied and its results (Saunders et al., 2009). Hence there exists a risk of self-selection bias from these kinds of samples. For instance, project leaders that have led unsuccessful projects might be reluctant to respond, or consider a successful project when completing the questionnaire, although asked to consider the last project, whether successful or unsuccessful. This could cause problems as project success is the dependent variable in the study, which potentially could affect the results (Collier, 1995). Guaranteeing the anonymity of the respondents minimizes the problem of self-selection bias, however it cannot be fully eliminated. Furthermore, self-selection bias is most often considered a problem in non-random samples (Collier, 1995), but as the sample of the population in this study is chosen randomly, the problem is further reduced.

3.7 Linear Regression Model

In order to analyze the effects of the moderating variables on the dependent and independent variables, the method suggested by Kenny and Judd (1984) will be used. They propose analyzing moderation interaction effects by linear regressions where an interaction variable has been computed by multiplying the independent variable with each of the moderating variables, however, before doing this, all variables were standardized. According to Jaccard et al. (1990), standardizing the variables will help avoid multicollinearity in the moderating variable. The formula for interpreting the variables is presented below. In this study, Y represents the dependent variable project success, X1 represents the independent variable leadership style and X2 the moderating variable (time, type, complexity or cultural diversity). Beta 0 is an intercept term that will not be interpreted in this study. Beta 1, 2 and 3 are important values in the regression outputs that will be presented as they show the slope of the line representing the change of Y in regard to X. The error term is a measure of variability and will not be interpreted further in the results or analysis. When analyzing the variable type of project, dummy variables
were coded and the moderating variables were computed by multiplying the dummy variable for each project type with the leadership style.

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2 + \epsilon \]

where \( Y \) is the dependent variable

\( \beta_0 \) is the intercept term

\( \beta_x \) are the coefficients for the independent variables

\( X_1 \) is the dependent variable

\( X_2 \) is the moderating variable

\( \epsilon \) is the error term
4 RESULTS

This section will provide the results from the empirical data that has been gathered through the questionnaire. First, general descriptive data regarding the sample will be presented, followed by descriptive data of the different variables in the model. Finally, the correlation analysis data will be provided, followed by the results from the regression analysis.

4.1 Descriptive Data

The overall surveys opened (respondents who clicked on the provided link) were 178, of that sample, a total of 91 started the survey and 56 completed surveys, which results in a response rate of 32%. Of the 56 completed surveys, the sample consisted of 36 male respondents (64%) and 20 female (36%), which is shown in Figure 3. The majority of the respondents’ ages were between 35-44 (37%), with a standard deviation of 1,03, which is relatively low since not many respondents were below 24 or above 55, Figure 4 presents the overall results of the age.

![Figure 3: Respondents Gender](image)

![Figure 4: Respondents Age](image)

The most common size of the project groups were 4-6 members (29%), however the results varied and resulted in a moderately equal distribution of team sizes, which can be seen in Figure 5. Furthermore, the cultural diversity within the project groups was low (mean value of m=2,6),
on a scale of 1 as not diversified, and 10 as highly diversified. This low cultural diversity could also stem from the fact that the majority of respondents (75%) were Swedish.

![Size of project team](image1)

**Figure 5: Project Size**

![Country of residence](image2)

**Figure 6: Country of residence**

The projects of the respondents answering the questionnaire were mainly executed on external clients, since 81% of the respondents considered external projects and 19% were internal within the firm. Regarding complexity and type of projects, Figure 8 shows that the complexity of the projects in the sample was mostly medium (48%) to high (46%), and only 3 (6%) respondents rated the complexity as low. Figure 7 shows the types of projects, where respondents had five different categories to choose from, and the results indicates that the majority of the projects were ‘Engineering and construction’, whereas none of the respondents project were marketing, hence marketing is excluded and does not appear in Figure 7.

![Type of project](image3)

**Figure 7: Type of project**

![Complexity of project](image4)

**Figure 8: Project complexity**
4.1.1 Leadership

The leadership part of the questionnaire consisted of 32 questions measuring 8 dimensions of leadership, which together measures the two different leadership styles; Transactional and Transformational. The mean score of the questions measuring each dimension was derived from the data in order to be used in the analysis. Furthermore, in order to test the internal validity of the instrument, Cronbach Alpha’s was calculated for the questions measuring each dimension. Appendix 2 shows the Alpha’s of the 8 different dimensions. Contingent Reward shows an extremely low Alpha and thus one should be careful drawing strong conclusions from this dimension alone. The five dimensions measuring transformational leadership shows Alpha’s of 0.605 to 0.665. These numbers are relatively low which could be explained by the relatively small sample size relative to the number of questions measuring each dimension. Grouping all the questions measuring the five dimensions of transformational leadership results in an Alpha of 0.809, which is satisfactory, and thus stronger conclusions could be drawn from this aggregated level, and a composite score of these dimensions was calculated. The same grouping of the questions measuring transactional leadership results in an Alpha of 0.756 showing a moderately good strength in this style. The results indicates that leaders in project settings appears to have a more transformational leadership, since the mean value for transformational leadership resulted in m=3.68, however still having some characteristics of transactional leadership, with a score of m=2.78.

Table 2: Alpha- and mean scores on Leadership Styles

<table>
<thead>
<tr>
<th></th>
<th>Transactional</th>
<th>Transformational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach-Alpha</td>
<td>0.756</td>
<td>0.809</td>
</tr>
<tr>
<td>Mean (Scale 1-5)</td>
<td>2.78</td>
<td>3.68</td>
</tr>
</tbody>
</table>

4.1.2 Project Success

The results shows project success Alpha of 0.832, which indicates a good internal validity. Grouping the questions into the three factors similar to previous studies (Geoghegan, 2005), results in Alphas of 0.804; 0.474 and 0.772 (Table 3). However, since one of these factors shows a very low Alpha, one should be careful in interpreting results derived from this factor. Therefore, the project success is aggregated into one single level, for which a composite score was computed and which the analysis will be performed upon. This composite score show that most
of the respondents rated their projects as largely successful, which is indicated by a mean score of \( m = 3.85 \), on a scale of 1-5.

**Table 3: Alpha scores on Project Success**

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<thead>
<tr>
<th>Cronbach-Alpha</th>
<th>Project success All</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.832</td>
<td>0.804</td>
<td>0.474</td>
<td>0.772</td>
</tr>
</tbody>
</table>

### 4.2 Correlations

In order to further analyze the moderating effects, a correlation analysis will first be made to gain a broad background on how the variables correlate. An important aspect to observe when analyzing the correlations between the variables is that there are no way of knowing in which direction the causality goes. Therefore, one should be careful in making too rigid conclusions solitary from these statistics. However, there are still insightful clues to be found within these correlations.

When analyzing the leadership styles and project success, a positive and significant correlation was found between transformational style and project success. Leaders who have rated themselves high on transformational dimensions also have reported successful projects to a large degree. No significant correlations were found between project success and the transactional leadership style. A significant negative correlation can be seen between the transformational style and the time aspect. This implies that leaders who have rated themselves high on transformational dimensions have reported higher levels of stress and being less able to stay within the assigned time frame of the project.

Moreover, positive correlations were found between a transformational leadership style and two moderating variables, cultural diversity and complexity. These correlations suggest that project leaders who have rated their projects as complex or their teams as multicultural, seem to rate themselves high on transformational dimensions. The transactional leadership style showed low positive correlations with cultural diversity and complexity, however not on a significant level, and a very low, but insignificant, negative correlation was found between transactional leadership and the time dimension. Furthermore, no significant correlations were found between the leadership styles and project type. These correlations can be found in Table 4.

Furthermore, a correlation analysis was performed in order to see how the leadership dimensions compare to each other. The transactional leadership dimensions correlates strongly
with many of the transformational leadership dimensions on a significant level. The results show that respondents who rate themselves highly on transformational dimensions also tend to rate themselves high on the transactional dimension contingent reward (Appendix 3). Therefore, examinations have to be made on more aggregated level, comparing the transactional and transformational leadership styles to each other using the composite scores computed from the dimensions. The finding that transformational and transactional leadership correlates has important implications, which will be further discussed.

There is a significant negative correlation between project success and the time dimension, implying that projects with time pressure has lower success as compared to projects with a more sufficient time frame. Furthermore, no significant correlations were found between project success and the other moderating variables, project type, complexity, and cultural diversity (Table 4).
<table>
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<tr>
<th></th>
<th>Transf</th>
<th>Transac</th>
<th>Time Pressure</th>
<th>Complexity</th>
<th>Type: Organizational Change</th>
<th>Type: IT</th>
<th>Type: Other</th>
<th>Cultural Diversity</th>
<th>Success</th>
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</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
4.3 Regression Analysis

Before running the regressions, all variables were checked for normality. All variables showed skewness that are in the range of +/- 2, which is deemed acceptable (Curran et al., 1996). However, project type, complexity and cultural diversity showed significant positive values on the Kolmogorov-Smirnoff test of normality, which indicates that one should be careful with drawing strong conclusions from regressions with these variables (Field, 2009).

A few extreme outliers were also removed prior to running the regressions and missing values were replaced list wise, meaning that the observations containing missing values was automatically removed before the regression was computed. One extreme outlier was removed from the project success variable and two outliers in the transactional leadership variable were removed. No other variables showed any extreme outliers.

4.3.1 Moderator Interaction Effects between Transformational Leadership and Success

Table 5 to 7 summarizes the first regression model, which analyzes the moderating effect of time pressure on the relationship between transformational leadership and project success. Table 7 presents the multicollinearity of the moderating variable in the significant model, which is very low, indicated by the variance inflation factor (VIF), which is close to 1 (Field, 2009).

Table 5 summarizes the regression model of the time variable and shows that 29% (R Square=0.290) of the variance between success, transformational leadership style and time pressure is explained by the model. Although the adjusted R Square is lower, an effect of having a small sample, the model shows a high significance (less than 0.01, Table 5). The Durbin-Watson tests for serial correlations between errors in the regression model has a value close to 2, which indicates that the residuals in the model are uncorrelated (Durbin & Watson, 1951 in Field, 2009). When analyzing the individual significance levels of the model, the interaction variable shows a significant beta value, which implies that there is an interaction effect between the variables. The Beta value of 0.280 indicates that the interaction variable has a positive effect on the negative relationship between time pressure and project success. This finding means that a transformational leadership style reduces the negative effect of time pressure on project success. The transformational leadership style shows no significance in the model, however, Irwin and
McClelland (2001) argues that direct effects should be included in the model although they are not significant.

The regression models from the analysis of project type, complexity, and cultural diversity can be found in Appendix 4. However, the results indicate no significant interaction effects of project type, or complexity, on the relationship between leadership style and project success. As shown in the correlation Table 4, a significant positive relationship between a transformational leadership style and cultural diversity was found, but no interaction effect of cultural diversity could be shown.

Table 5: Regression model summary: Dependent: Project Success, Independent: Transformational, Moderator: Time Pressure

![Table 5: Regression model summary]

Table 6: ANOVA summary: Dependent: Project Success, Independent: Transformational, Moderator: Time Pressure

![Table 6: ANOVA summary]

Table 7: Coefficients summary: Dependent: Project Success, Independent: Transformational, Moderator: Time Pressure

![Table 7: Coefficients summary]
4.3.2 Moderators Interaction Effects between Transactional Leadership and Success

When analyzing the moderators’ interaction effects on the relationship between transactional leadership and project success, the same effect as in the previous regression regarding transformational leadership can be found. The model is significant and time pressure shows a significant negative influence on project success, and the moderating effect of time pressure and a transactional leadership style shows a significant interaction effect (Table 10). This means that transactional leadership has a reducing effect on the negative relationship between project success and time pressure. The results from the regressions with project type, complexity and cultural diversity can be found in Appendix 5. These regressions did not show any significant effects between the variables. Table 8 to 10 summarizes the regression models.

Table 8: Regression model summary: Dependent: Project Success, Independent: Transactional, Moderator: Time Pressure

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>.529*</td>
<td>.280</td>
<td>.236</td>
<td>.75210769</td>
<td>2.407</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Transac\_x\_TimePressure, Transac, TimePressure
b. Dependent Variable: Success

Table 9: ANOVA summary: Dependent: Project Success, Independent: Transactional, Moderator: Time Pressure

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>3</td>
<td>3.587</td>
<td>6.341</td>
<td>.001*</td>
</tr>
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<td>Residual</td>
<td>27.718</td>
<td>49</td>
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<tr>
<td>Total</td>
<td>38.478</td>
<td>52</td>
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</tbody>
</table>

a. Dependent Variable: Success
b. Predictors: (Constant), Transac\_x\_TimePressure, Transac, TimePressure

c. Predictors: (Constant), TimePressure

Table 10: Coefficients summary: Dependent: Project Success, Independent: Transactional, Moderator: Time Pressure

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized coefficients</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
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</table>

a. Dependent Variable: Success

S. CHERRO & P. JOHANSSON 38(70)
4.4 Findings Summary

Figure 9 and 10 below summarizes the findings of the empirical results regarding the leadership styles, time pressure and success. The line named “initial relationship” represents the negative relationship between time pressure and success that was shown in the regressions. The slightly curved line represents the dampening effect that occurs when the project leader uses either a transformational or a transactional leadership style. The gap that occurs between these two lines represents the positive dampening effect of the leadership style.

Figure 9: Success vs. Time

Figure 10: Success vs. Time with leadership effect
5 DISCUSSION

This section will analyze and discuss the results from the study and their connection to each of the stated hypotheses.

**Hypothesis 1**: A transformational leadership style in combination with time pressure has a negative effect on project success.

The results indicate that hypothesis 1 is not supported, which means that there are no evidence supporting that time pressure will have a negative effect on the relationship between transformational leadership and project success. However, transformational leadership shows a significant negative correlation with time pressure in projects. This negative correlation between transformational leadership and time pressure indicates that the leader needs time in order to develop the transformational leadership relations with the followers, however, important to note is that this result does not include the project success factor, hence the success can either be positive or negative. Halverson et al. (2004) presented result showing that charisma and performance decreased under stressful conditions, which could explain the significant negative correlation between transformational leadership and the time pressure. However, a significant finding that is contrary to the stated hypothesis is that a transformational leadership style dampens the negative effect of the time pressure in the project. This is contradictory considering that time pressure and transformational leadership style are negatively correlated, however, since the causal direction cannot be interpreted, the correlations should be taken with caution. One possible reason for this dampening effect is that research has shown that a transformational leadership style can reduce stress among the followers in teams (Bass, 1998). Furthermore, this dampening effect is also supported by Lyons and Schneider’s (2009) study, which showed that followers to transformational leaders performed better under stressful conditions as compared to transactional leaders. Butler and Chinowsky (2006) showed that tolerance for stress is a strong part of emotional intelligence, which in turn is a strong predictor of transformational leadership. The time variable in this study (time pressure) does to a large extent take the leaders perceived stress into consideration. If the leader feels stress from the time pressure in the project, there is a
risk that the followers does as well. Therefore the result indicates that a transformational leader would reduce the stress among the followers in the team, and increase the project success. A transformational leader could therefore handle stress better, and despite the time pressure take the time to consider each individual team member, this would reduce the stress among the members of the project group and reduce the negative relationship between time pressure and successful projects.

**Hypothesis 2:** A transactional leadership style in combination with time pressure has a positive effect on project success.

The results shows support for hypothesis 2, since there is evidence that transactional leadership style dampens the negative effect between time pressure and project success. Therefore the results support previous findings, where Sims and Lorenzi (1992) showed that a transactional dimension, contingent reward behavior, could reduce uncertainty, raise efficacy expectations and help reach agreement on what needs to be done by clarifying performance expectations. This supports the hypothesis and indicates the positive effect on project success for transactional leaders under time pressure. However, this short-term perspective could be harmful in the long run, since according to Bass (1998) there can be difficulties in establishing long-term positive effectiveness in coping with stress among the followers, but since projects are mostly limited in time, this should not be harmful. Furthermore, the finding also supports the study of Stordeur et al. (2001), where they found that contingent reward was associated with lower levels of burnout among the followers, hence reducing the time pressure on a transactional leader. However, the results indicate that both transactional and transformational leadership dampens the negative effect of time pressure on project success. A possible explanation for this finding is that a large part of the sample rated highly on both transactional and transformational dimensions, and that few respondents rated higher on the transactional dimensions. Although Burns’ (1978) argued that transformational and transactional leadership exists on extreme ends of a continuum, the results from this study support Bass’ (1985) findings that leaders show behaviors from both constructs, therefore not drawing too strong separations between the leadership styles. The strong correlation between the two styles and their dimensions makes it questionable if transformational and transactional styles are two different constructs. Taking a closer look at the dimensions...
making up each leadership style, the contingent reward dimension of transactional leadership show strong correlations with the transformational dimensions. A test of scale validity shows that adding this dimension to the five dimensions of transformational leadership produces a relatively high Cronbach Alpha, indicating that contingent reward to a large extent measures transformational behaviors as well. This is in line with previous findings, which states that when performing confirmatory factor analysis, contingent reward seems to load on transformational dimensions (Bycio et al., 1995; Carless, 1998). Also Barling et al. (2000) argued that the behaviors in contingent reward are positive and discretionary, more similar to the behaviors in the transformational dimensions than management-by-exception behaviors. This could explain the similar results of the two regressions regarding the moderating effect of time on the relationship between leadership style and project success. However, with a relatively small sample and a questionnaire that assess leader behavior based on self-rating one should be careful with drawing to stern conclusions from these findings.

**Hypothesis 3:** Different leadership styles in combination with different project types have an effect on project success.

Hypothesis 3 is not supported, since the regression analysis did not show any significant moderating effects of project type on the relationship between leadership style and project success. There were no significant effects between any leadership style and project types, which does not support previous studies that state that different leadership styles are needed for different project types, for instance that engineering or repositioning projects would be more efficient with a transactional leader, or that projects where communication and vision is important would be more efficient with a transformational leader (Müller & Turner, 2007). However, since the sample can be seen as relatively small and dividing it into four different project types, the number of observations in each group becomes very small, hence one should not draw too strong conclusions regarding these findings. In addition, since the predicted project types added on the questionnaire were not highly chosen among the respondents, hence further investigations could not be made on a deeper level, since project type ‘other’ could be very diverse. Therefore, there is a lack of information in order to fully support these findings for further analysis.
**Hypothesis 4:** A transformational leadership style in combination with projects with high complexity has a positive effect on project success.

From the results, there is no support for hypothesis 4, as the findings did not show a significant effect of complexity on the relationship between leadership style and project success. The majority of the respondents rated the project complexity level mostly between medium and high which makes it difficult to analyze the low level of complexity since only a fraction of the respondents rated the complexity as low, which makes this variable non-normally distributed. However, positive correlations were found between transformational leadership and project complexity, which indicate that for more complex projects, transformational leadership style has been preferred and used, although, there are no significant results about the success of these projects. This supports previous studies (Müller & Turner, 2007) that have indicated that more complex projects are often in need of a transformational leadership style. However, the regression analysis did not show any significant moderating effects of transformational leadership and complexity on project success, and therefore the stated hypothesis is not supported.

**Hypothesis 5:** A transformational leadership style in combination with cultural diversity has a positive effect on project success.

The research expected that transformational leaders in combination with cultural diversity have a positive effect on project success. However, since the sample results were mostly culturally homogeneous, where the majority of the respondents were located in Sweden and rated the cultural diversity within the project low, there were no findings that could support hypothesis 5. The reasons why the majority of the respondents were mostly Swedish is mainly since the response rate among the respondents gained from the individual firms were significantly higher than the response rate gained among the PMI Chapters respondents. These individual firms were located in Sweden, hence the response sample were mostly Swedish. The high response rate from the individual firms can be since personal relationships were established with key personnel.
among the individual firms fast through both email and telephone contact. The reasons for the low response rate among the PMI chapters can be diverse, first, this is an external organization consisting of project leaders working in different firms, which means that the target sample is a further step away in comparison to contacting the firm directly. Second, it was more difficult to contact the PMI chapter’s presidents since contact was taken mainly through personal emails and there were no telephone numbers to use for easy and fast follow-ups. However, establishing a relationship with the PMI organization is essential and an efficient way of acquiring the multicultural diversity aspect for the projects, which would have given insights about the multicultural aspect within the project.
6 CONCLUSION

6.1 Concluding Remarks

The purpose of this study was to examine how each of the aspects, time, project type, complexity, and cultural diversity, would affect the relationship between leadership style and project success. The findings support Bass’ notion that transactional leadership and transformational leadership are two different constructs and that leaders, when asked to assess their own leadership style, seem to rate themselves high on both the transactional and transformational dimensions, as there is a significant positive correlation between the two styles. Furthermore, in line with this result, the transactional dimension contingent reward was found to be highly correlated with transformational leadership dimensions. Furthermore, the study shows that both transformational and transactional leadership style dampens the negative effect of time pressure on project success. Moreover, a transformational leadership style was shown to be significantly and positively correlated with project success. These findings support the large theoretical research showing transformational leadership being a fundamental positive approach, and also indicate that is applicable on work performed in project settings. Therefore it seems that it still can be argued that transformational leadership style can be a medicine to solve all problems, since this leadership style is mostly used and preferred, disregarding the short-term and/or long-term perspectives.

6.2 Managerial Implications and Literature Contributions

The study has shown that the time aspect is an important aspect that one can benefit from, this implies that, from an internal perspective within the firm, managers and HR-representatives can use this aspect when choosing leaders for projects, depending on the project time and factors that would result in stress. Therefore, individuals showing more transactional abilities will be less affected by the stress although the outcome of the project might not be as great as for a transformational leader. However, for projects with an in advance known time frame that suggest sufficient time, transformational leaders should be chosen as this style is connected with greater
success of projects. Furthermore, in order to know what type of leadership style the project leader is, firms should investigate factors that indicate certain leadership styles in order to identify the style that would match the project type. Although the result showed that most of the project leaders showed behaviors from the transformational leadership style with some transactional characteristics, an internal 360-degree assessment should be carried out in order to assess the leadership style from the team members’ perspective, which then should indicate the appropriate style, since the leader is not self rating himself/herself. From an external perspective, since most of the projects were made for external clients, this information can be used for clients in order to prospect the project success. Depending on the planned project time, clients can use this information when assessing project leaders. Therefore, if they have an urgent project that needs to be done effectively and in limited time, one should prefer a transactional leader.

From a literature perspective, this research has been focusing on how the time aspect affects the results in project groups, which often seemed to have been neglected in previous studies. The contribution to the literature has been by bridging the theories of leadership styles together with the time aspect, and how this affects the results in the projects. This study laid the foundation of this perspective, where the results have shown the importance of raising the issue regarding how the time aspect affects the relationship between projects success and leadership style in projects. The study also supports previous academic literature that suggested that some important dimensions of transactional leadership seem to be similar to many of the transformational dimensions. This indicates that there is a need for reassessment of the visionary school and its leadership dimensions and the way they are measured.

Furthermore, the LTDQ has been developed in this research with purpose to study the time aspect, this questionnaire can be used for future studies where practitioners want to examine the same phenomena. However, as indicated earlier, one should not draw too strong conclusions about the results and solely base judgments on these findings, but the results show that one should have knowledge concerning this aspect when time is limited.
6.3 Limitations and Suggestions for Future Studies

This study forms a good basis for future research, where practitioners can build upon the limitations within the study. The research sample in the study is probably not large enough for the results to be representative of the entire population. Future studies should assess the time aspects of leadership in projects with larger sample sizes in order to reach more generalizable findings. Also, the present study, together with many of the previous studies regarding the same topic, have assessed leadership from the perspective of the leader, relying on self-rating of behaviors. This could lead to some biases, in this case for example, the sample consisted of largely successful projects and leaders rating themselves as transformational. Therefore, future studies should assess leadership from a 360-degree perspective, assessing the leadership style of the project leader from the team members’ perspective. Allowing team members to rate the leaders would most probably lead to a more diverse sample where some leaders would be more transactional than transformational. This would allow a better comparison between the two leadership styles. In addition, the aspects considered in this paper should be studied using other conceptualizations of leadership, such as the competency theory, in order to see if different competencies affect the different variables in the study.

Furthermore, the sample in the present study did not contain a great number of multicultural teams. Future studies should target more cultural diversified teams in order to investigate the project success when the cultural aspects affect the leadership styles under time pressure.
7 REFERENCES


Antonakis, J. (2001). The validity of the transformational, transactional, and laissez-faire leadership model as measured by the multifactor leadership questionnaire (MLQ 5X) (Doctoral dissertation, ProQuest Information & Learning).


8 APPENDICES

Appendix 1

Questionnaire
1. Age
2. Gender
3. Country of Residence
4. Size of project team
5. Type of project
6. Who is the end-user of the project?
7. Complexity of project
8. Planned project time frame
9. If project took longer/shorter time than planned, how long did it take?
10. I had enough time to reach the project's goals efficiently
11. If given more time, the project would have produced better results
12. To what extent does the team consist of members from other nationalities?
13. The cultural differences within the team created difficulties during the project
14. Can you please rate the team members overall performance during the project

Stress Factors
15. During the last project, I felt that I could not cope with all the things that I had to do
16. During the last project, I felt nervous and “stressed”
17. During the last project, I felt that I am on top of things
18. During the last project, I was angered because of things that were outside of my control
19. During the last project, I felt difficulties were piling up so high that I could not overcome them

Leadership
20. I show a sense of power and confidence to my team
21. My team knows my most important values and beliefs
22. My attention is focused on mistakes, exceptions and/or deviations from standards
23. When my team meets the expectations I express my satisfaction
24. I had sufficient time to get to know each member of my project-team individually
25. I take moral and ethical questions into consideration when making decisions
26. I let my team know that I will not interfere unless things go wrong
27. I talk enthusiastically to my team about what needs to be done in the project
28. I let my team know the importance of having a strong sense of purpose in the
29. I help each member of the team to develop his or her strengths  
30. I treat the members of my team as unique individuals and not just members of a team  
31. I instill pride in my team members for being associated with me  
32. I do not take action in the project-teams work unless things go wrong  
33. I set my self-interests aside for the good of the team and the project  
34. I let my team know what rewards they can expect for achieving the projects performance targets  
35. I let my team know that problems in the project must become chronic before I take action  
36. I let my team know that I am confident that the projects goals will be achieved  
37. I let my team know the importance of having a collective sense of mission  
38. I act in a way that increase the team members respect for me  
39. I provide assistance to my team in exchange for their efforts  
40. I keep track of all mistakes made by the team members  
41. I do not interfere in the team’s work until problems become serious  
42. My full attention is concentrated on dealing with mistakes, complaints and failures of the project-team  
43. I am specific about who is responsible for achieving the projects performance targets  
44. I express a positive and compelling vision of the future to my team  
45. When solving problems, I seek different perspectives  
46. I consider each team member as having unique abilities, needs and goals separate from other team members  
47. I re-evaluate critical assumptions in order to question if they are appropriate  
48. My attention is focused on my team members’ failures to meet standards  
49. I felt that the time during the project was too short to develop more personal relationships with my team members  
50. I show my team that I am optimistic about the future of the project  
51. I make sure to spend time teaching and coaching my team members  
52. I get my team-members to approach problems from many different angels  
53. I suggest new ways of looking at how to complete tasks in the project  

Project Success  
54. The project came in on schedule  
55. The project came in on budget  
56. What the project delivered works  
57. Given the problem for which it was created, the project seems to solve that problem i.e., it was the best choice among the set of alternatives  
58. The results of the project represent a definite improvement in performance over the way clients used to perform these activities  
59. The project is used by its intended clients
60. Important clients, directly affected by the project, made use of it
61. The start up problems was minimal because the project was readily accepted by its intended users
62. The end-user has shown further interest in our services
63. I am satisfied with the process by which this project was completed
64. The project will directly benefit the intended users: either through increasing efficiency or employee effectiveness
65. Use of the project will directly lead to improved or more effective decision making or performance for the clients
66. The project had positive impact on those who made use of it
67. The project team was satisfied by the project outcome
## Appendix 2

### Cronbach Alpha

<table>
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<tr>
<th></th>
<th>Contingent Reward</th>
<th>Management by Exception – Passive</th>
<th>Management by Exception – Active</th>
<th>Individual Consideration</th>
<th>Intellectual Stimulation</th>
<th>Inspirational Motivation</th>
<th>Idealized Behaviors</th>
<th>Idealized Attributes</th>
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* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Appendix 4

Regressions for Transformational Leadership Style

Complexity as Moderator between Transformational Leadership and Success

Model Summary*

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<th>Std. Error of Estimate</th>
<th>Durbin-Watson</th>
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a. Predictors: (Constant), Transf_x_Complexity, Complexity, Transf
b. Dependent Variable: Success

ANOVA*

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a. Dependent Variable: Success
b. Predictors: (Constant), Transf_x_Complexity, Complexity, Transf

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a. Dependent Variable: Success
Type of Project as Moderator between Transformational Leadership and Success

Organizational Change

Model Summary

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a. Predictors: (Constant), Transf_x_TypeOrg, Constr_vs_Org, Transf

b. Dependent Variable: Success

ANOVA

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a. Dependent Variable: Success

b. Predictors: (Constant), Transf_x_TypeOrg, Constr_vs_Org, Transf

Coefficients

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IT

Model Summary

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a. Predictors: (Constant), Transf_x_TypeIT, Constr_vs_IT, Transf

b. Dependent Variable: Success

ANOVA

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a. Dependent Variable: Success

b. Predictors: (Constant), Transf_x_TypeIT, Constr_vs_IT, Transf
Other

Cultural Diversity as Moderator between Transformational Leadership and Success
### ANOVA

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a. Dependent Variable: Success  
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### Coefficients

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a. Dependent Variable: Success
Appendix 5

Regressions for Transactional Leadership Style

Complexity as a Moderator between Transactional Leadership and Success

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<td>Regression</td>
<td>.133</td>
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<td>.044</td>
<td>.042</td>
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<td>Residual</td>
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<td>Total</td>
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</table>

a. Dependent Variable: Success
b. Predictors: (Constant), Transac_x_Complexity, Zscore(Transac), Complexity

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>.327</td>
<td>Tolerance = 930, VIF = 1.079</td>
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<tr>
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<td>.023</td>
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<tr>
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a. Dependent Variable: Success
Type of Project as a Moderator between Transactional Leadership and Success

Organizational Change

Model Summary

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<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
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<tbody>
<tr>
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a. Predictors: (Constant), Transac_x_TypeOrg, Zscore(Transac), Constr_vs_Org
b. Dependent Variable: Success

ANOVA

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<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>.445</td>
<td>.825</td>
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<tr>
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<td>47</td>
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a. Dependent Variable: Success
b. Predictors: (Constant), Transac_x_TypeOrg, Zscore(Transac), Constr_vs_Org

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
<th>Collinearity Statistics</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>1.155</td>
<td>.253</td>
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<td>Zscore(Transac) -.003</td>
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<td>-0.003</td>
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<td>-.0003</td>
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<td>Transac_x_TypeOrg .542</td>
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a. Dependent Variable: Success

IT

Model Summary

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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
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a. Predictors: (Constant), Transac_x_TypeIT, Zscore(Transac), Constr_vs_IT
b. Dependent Variable: Success

ANOVA

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<th>Model</th>
<th>Sum of Squares</th>
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<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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a. Dependent Variable: Success
b. Predictors: (Constant), Transac_x_TypeIT, Zscore(Transac), Constr_vs_IT
### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<th>Sig.</th>
<th>Collinearity Statistics</th>
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<tr>
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- a. Dependent Variable: Success

### Model Summary

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<thead>
<tr>
<th>Model</th>
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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
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<tbody>
<tr>
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- a. Predictors: (Constant), Transac_x_TypeOther, Constr_vs_Other, Zscore(Transac)
- b. Dependent Variable: Success

### ANOVA

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<tr>
<th>Model</th>
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<th>Mean Square</th>
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<th>Sig.</th>
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- a. Dependent Variable: Success
- b. Predictors: (Constant), Transac_x_TypeOther, Constr_vs_Other, Zscore(Transac)

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
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<tr>
<td></td>
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- a. Dependent Variable: Success
Cultural Diversity as a Moderator between Transactional Leadership and Success

Model Summary

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<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Durbin-Watson</th>
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<tbody>
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a. Predictors: (Constant), Transac_x_Culture, Zscore(Transac), Cultural Diversity
b. Dependent Variable: Success

ANOVA

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<tr>
<th>Model</th>
<th>Sum of Squares</th>
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<th>Mean Square</th>
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</thead>
<tbody>
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a. Dependent Variable: Success
b. Predictors: (Constant), Transac_x_Culture, Zscore(Transac), Cultural Diversity

d. Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
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a. Dependent Variable: Success