AMERICAN UNIVERSITY OF BEIRUT

THE ROLE OF THE PROJECT MANAGER'S
TRANSFORMATIONAL LEADERSHIP STYLE IN
MOTIVATING THE CONSTRUCTION SITE TEAM

by
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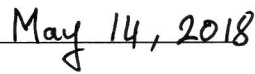
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AN ABSTRACT OF THE THESIS OF

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Title: The Role of the Project Manager's Transformational Leadership Style in Motivating the Construction Site Team

Construction projects require the combined effort of professionals from different firms and different backgrounds in order to achieve success. This, in turn, is hard to materialize without the efforts and skills of project management professionals working as part of each of such concerned firms. Participants of the construction project setting are diverse and of various backgrounds, they invest in their skills for temporary basis with the aim of reaching a common goal.

The contracting firm's site team is the largest of all the other teams assigned to the construction site. While this team's project manager reports to his/her corresponding head-office function (i.e. operations), the members of the other site-office units and their tiers of subordinates report to both the project manager's office on site and to the counterpart units at the firm's head office.

The objective of this study is to examine the applicability of motivation theories in relation to enhancing the ability of the project manager to exercise a transformational leadership style. More specifically, the aim is to investigate whether (a) it is possible for transformational leadership to exist in such a short-lived temporary project organization, given the various existing constraint, and (b) there exists a link between the project manager's transformational leadership style and the construction site personnel's motives, in a way that improves their work efficiency and influences their career path development.

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CHAPTER 1

INTRODUCTION

1.1 Background

Construction projects require the combined effort of professionals from different firms and different backgrounds (architecture, engineering, quantity surveying, as well as contracting and subcontracting of different specializations) in order to achieve success. This, in turn, is hard to materialize without the efforts and skills of project management professionals working as part of each of such concerned firms. Furthermore, the employment of some appropriate leadership style by these professionals is critical to the achievement of needed output from subordinates, understanding their needs and goals, and positively influencing project outcomes (Akhavan Tabassi & Hassan Abu Bakar, 2010).

Leadership is both art and science; it is an art since this skill cannot be learned from books, and it is science since literature describes leadership process through a path that allows one to reach organizational objectives (Akhavan Tabassi & Hassan Abu Bakar, 2010). Chun et al. (2009) found that leadership at different organizational levels is positively related. In addition; it is argued that "the leader-to-subordinates distance has an impact on leadership mechanism" (Wu, Li, & Fang, 2017). This distance is expressed in terms of "leader–follower physical distance, perceived social distance, and perceived task interaction frequency" (Antonakis & Atwater, 2002).

Transformational leadership is observed as the most active and effective leadership style and includes five facets: attributed idealized influence, behavioral

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idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Antonakis & Atwater, 2002). This leadership style looks beyond providing contingent rewards to followers, such as the case of transactional leadership style. Rather, transformational leadership looks into a strong leader-follower connection and a common shared vision for the future (Keegan & Den Hartog, 2004). Moreover, due to its unique features that are more on a person-to-person level, transformational leadership works best in situations of uncertainty and change (Waldman, Ramírez, House, & Puranam, 2001, cited in (Tyssen, Wald, & Heidenreich, 2014).

Motivation theories started to appear in the 1950's, and they are today categorized under two main groups: content and process theories. Content theories of motivation, also known as need-based theories, revolve around the concept of employee's needs and further explain the factors that boost or stop behavior (Ruthankoon & Olu Ogunlana, 2003). These include theories such as Maslow's hierarchy of needs (in 1943 and 1954), Herzberg et al.'s two factor theory (in 1959), McClelland's three needs theory (in 1961), and Alderfer's ERG theory (in 1972). Process theories look into the reasons behind the human behavior's choice of action in their work environment (Ruthankoon & Olu Ogunlana, 2003). They include Adams' equity theory (in 1963), Vroom's expectancy theory (in 1964), Locke's goal setting theory (in 1968), and Skinner's reinforcement theory (in 1969) (Seiler, Lent, Pinkowska, & Pinazza, 2012).

Motivation is one reason behind a person's action; one approach would be looking at behavior as intrinsic or extrinsic. On one hand, intrinsic motivation is defined as "the pursuit of an interesting task without expecting or receiving a tangible payoff for one's actions" (Covington and Mueller, 2001). On the other hand, extrinsic motivation "requires an instrumentality between the activity and some separable consequences such

as tangible or verbal rewards," and "satisfaction comes not from the activity itself but rather from the extrinsic consequences to which the activity leads" (Al-Khaza'aleh, Abbasi, & Alahmer, 2016). Motivation concepts are numerous, and, as such, there is not only one way for motivating employees and applying easy solutions for motivation problems in the project setting (Ellemers, De Gilder, & Haslam, 2004).

1.2   Construction project team setting

"Construction project teams are considered temporary organizations" (Cornick and Mather 1999). To this end, (Turner & Müller, 2003) stated the definition of a project as follows: "A project is a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavor." That is, in the context of the construction project, diverse organizations assign representatives and staff to work on a temporary basis within a project team, with the aim of achieving the common project's goal (Son & Rojas, 2010). The contracting firm's site team is the largest of all the other teams assigned to the construction site. While this team's project manager reports to his/her corresponding head-office function (i.e. operations), the members of the other site-office units and their tiers of subordinates report both to the project manager's office on site and to the counterpart units at the firm's head office. Under such a setting, it is probable that the organization reassigns some members of the construction team and/or the project manager to new projects at other locations, upon the completion of a project in question. Also another characteristic of this setting is the likely turnover of members on a certain project along the length of the construction duration. As such, team members enter and leave the project at different times, and they may as well be replaced at any point in time. Their stay may be continuous or intermittent over the full, or part(s) of the,

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construction duration. In contrast with the case of permanent organizations, this kind of setting is dynamic, and it is difficult to predict the ways with which it may evolve over the course of the construction duration.

1.3   Problem Statement

Given the previously mentioned project setting, the project team is eventually expected to accomplish the works. However, it remains unanswered as to how to get the project staff to be motivated, and the extent to which the project manager can exhibit a transformational leadership style that can have a positive effect on the staff's career path. Also of interest is the effect, if any, of the existence of two superiors, at both the site-office, and head-office levels, to whom the senior site staff report to.

1.4   Research Objective

The objective of this study is to examine the applicability of motivation theories in relation to enhancing the ability of the project manager to exercise a transformational leadership style. More specifically, the aim is to investigate whether (a) it is possible for transformational leadership to exist in such a short-lived temporary project organization, given the various existing constraint, and (b) there exists a link between the project manager's transformational leadership style and the construction site personnel's motives, in a way that improves their work efficiency and influences their career path development.

1.5   Methodology

This study's methodology is expected to include the following steps:

1. Reviewing the project manager's transactional and transformational leadership styles, with the purpose of validating leadership as an influencing process in the context of temporary organizations;

2. Specifying the unique construction project setting dimensions, to assist with the identification of the struggle that the project manager faces while applying his motivation roles;

3. Scrutinizing the main concepts related to the process and content motivation theories, for the purpose of inspecting the influence of these theories on extrinsic and intrinsic motivation and determining when these theories could be applied or disregarded;

4. Proposing a theoretical framework for the construction project site-team setting, relating the project manager's transformational leadership style to the staff's potential motivation; and

5. Offering conclusions, as well as recommendations as to how to validate the proposed theoretical framework.

1.6   Research Contribution

The contribution from this research will be in the development of a framework that conceptualizes how the project managers' transformational leadership style can be triggered or promoted in short-lived organizations, such as those employed on construction sites. The analysis of the applicability of available motivation theories from the perspective of the construction-site organization setting shall be of value, by indicating where the adoption of each theory is expected to be more effective.

A construction project in its context (modified from Dubois and Gadde 2000)

CHAPTER 2

LITERATURE REVIEW

2.1 Preamble

This chapter provides the relevant literature review to help apprehend the construction setting, justify the importance for the role of the project manager's transformational leadership style, and the need for motivation in the construction setting. In addition, a general background about the organizational behavior motivation theories is provided.

2.2 Construction project setting

The construction industry is composed of firms which participate in operations for one or more construction projects, where the project is a temporary network consisting of resources from these firms (Dubois & Gadde, 2002). Referring to Figure 1 we observe that Firm A is participating in two distinct projects, in one project the firm is responsible for providing all resources, whereas for another project it offers one specific
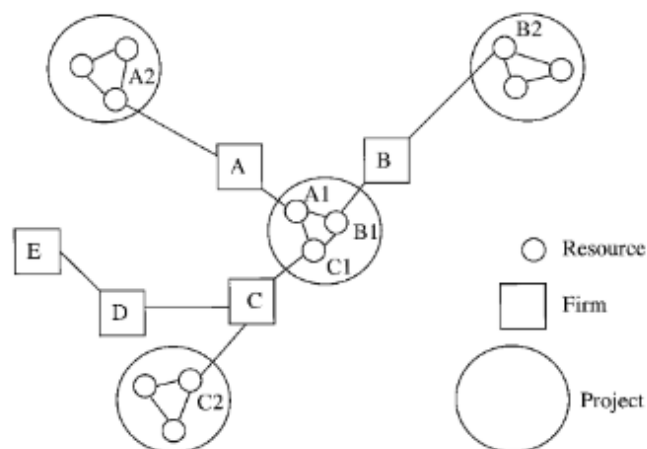
Figure 2.1 A construction project in its context. Modified from Dubois and Gadde (2000)

type of resource in coordination with the activities and resources of other firms. Moreover, the short market exchange and adaptation constantly exists between firms, and within the construction industry, and leads to continual renewal of teams on different projects (Dubois & Gadde, 2002). Projects are uniquely built according to customer needs, in addition, projects vary in types such as residential, transportation, industrial, water and water treatment plants, energy production and distribution, recreation facility, communication, and special construction projects. A project also requires adjusting to the local area and procuring material from nearby locations; this is mainly necessary because there are always unexpected variation of orders and uncertain factors (Dubois & Gadde, 2002).

2.1.1 *Participants of the construction project*

The Head Office team of the construction project is composed of smaller teams of different specializations with corresponding leaders, their roles include managing processes and subordinate teams, being involved through all phases of the project, being responsible for transferring skills, and sharing knowledge with other members that arrive during later phases (Spatz, 2000).

As for the Site Office team, they are composed of various Site Office functions, they work on a certain project, and they are located in hierarchy beneath the project manager's Site Office team. Since a finished project is built each time in a new geographic location (Bresnen, 1990), the site office team could be near or far from the Head Office. Physical distance from Head Office could be far or close, and even on a close physical distance, social distance with Head Office could be distant.

Nevertheless, this Site Office team composition is managed by the project manager's team who is on a closer connection with Head Office. Due to the large scale

of projects in the construction industry and its involvement with a range of projects and specialized firms, the subordinate teams tend to be isolated from each other even with the addressing of communication and knowledge sharing, and transfer of skills - improvement is limited (Spatz, 2000).

2.1.2 *Features of the construction project*

Teams of the construction industry are best described as a combination of individuals who work together in a particular environment, for the purpose of a specific goal, and their behavior is affected by their interaction with other individuals in that setting (Bertelsen, 2003). Team members are either permanent or temporary, they provide knowledge and previously learned experiences to their teams, they have a general idea about all project phases, they follow a sequential order of tasks, and they are able to identify the roles and responsibilities of other members (Spatz, 2000).

Research has shown positive results for the presence of temporary team members within the team; furthermore, the narrow time perspective on a project allows them to focus on the present situation and to immediately complete and deliver a project (Bakker, Boroş, Kenis, & Oerlemans, 2013). Also the selection process of temporary members is of great value; consequently, any shortage in available employees at any of the project stages could lead to harmful delays for project completion (Raiden et al., 2004).

Moreover, due to increasing complexities in the construction industry, multiple stakeholders other than core members such as city urban planners, government members, vendors, politicians, business analysts, are joining the team and that requires additional attention on devising methods that can manage teamwork from a wider perspective (Raiden et al., 2004).

Finally, collaboration between team members has been the interest of several researchers, such as Son and Rojas (2010) who developed an agent based model where agents are the different members of the industry involved. They explored the collaboration between team members on temporary teams and suggested the need for creating from the start a collaborative atmosphere that would facilitate the development of the different layers of networks.

2.1.3 *Construction industry: a project based organization*

Remarkable growth has been observed in literature on the topic of temporary organizations since 1960 till the year 2008 (Bakker, 2010). A temporary organization is one that not only embraces project based organizations but also programs, task forces, and all systems that depend on temporary collaborations (Tyssen, Wald, & Spieth, 2013) such as the construction industry, software engineering, film-making, sports, fashion (Bakker, 2010) and industries of international projects (Tyssen et al., 2013). A temporary organization is characterized by: limited and predefined duration, missing hierarchies effect, unique project outcome, higher uncertainty, and low commitment of project members (Tyssen, Wald, & Spieth, 2014).

On the other hand; a project based organization is one that views itself as being project oriented, meaning that its business transactions occur through managing projects, programs, and portfolios; where projects and portfolios are temporary structures (Miterev, Mancini, & Turner, 2017). These organizations usually perform critical work, and assist one or more customers to reach the execution or creation of the final product; examples of such organizations are the construction industry, shipbuilding industry, large capital projects, and high tech industries (Hobday, 2000).

Organizations referred to as project based organizations are created on temporary bases to execute a project or project tasks (Thiry & Deguire, 2007). Project based organizations are described as innovative since they constantly adapt their structure to customer and project requirements (Hobday, 2000). For every project assigned, a project based organization tailors a unique system, which is set aside as soon as the project is complete (Miterev et al., 2017). A project based organization has characteristics similar to those of the management system of a temporary organization due to the similar challenges and dynamic environment setting existing in both organizations (Huemann, Keegan, & Turner, 2007).

Furthermore; as a result of increasing competition and complexity in the market, the construction industry is leaning towards the systems used in project based organization that are proving to be efficient for the delivery of complex projects (Wen & Qiang, 2016). Specifically, the construction industry faces several challenges from technical to managerial; as a result, researchers are now studying temporary factors and social interactions between leader and follower within the construction industry for the purpose of managing difficulties (Tyssen et al., 2013).

2.2   Construction setting in the context of project management

Managing a project requires communicating with stakeholders along with addressing their needs related to project activities (Institute, Project, Project Management, & Books24x, 2012). The Project Management Book of Knowledge has found the construction industry unique enough to have its own construction extension in order to cover management practices specific to this industry, and mentions the diverse existing areas of management such as scope, time, cost, quality, project integration,

human resources, communications, risk, procurement, safety, environment, financial and claim management.

Belassi and Tukel (1996) conducted a study classifying the different factors related to project management into four groups and found that success factors related to the project manager ranked lowest; they further explained that this was due to the fact that project managers underestimate the importance of their role in achieving a successful and complete project. Another study conducted by Demirkesen and Ozorhon (2017) tackled the availability of diverse management areas in the construction setting. They pointed out the importance of engineering managers in getting familiar with the setting and understanding the unique components of project management in order to integrate them into the management of the construction project. However, it is worth pointing out that much specialization of models and detailing of factors would worsen the process rather than aim for a smooth flowing project (Thiry & Deguire, 2007). Given the previously mentioned setting, the project manager is to have a certain leadership role to influence the project site team.

Leadership is best described as "the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization" (Tyssen et al., 2013). More specifically, when describing leadership as an influencing factor, it is to describe the effect of follower perceptions and attribution of leader behavior and dispositional characteristics (see Bass, 1990; Conger & Kanugo, 1998; House, 1977; Shamir, 1995; Waldman & Yammarino, 1999). Leadership could occur on multiple levels, between leaders on different hierarchal levels or between teams and the organization itself (Dionne et al., 2012). Moreover, the project manager is observed as the one most involved in the process of a project from beginning to end,

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and leads ''groups of talented people in an environment of collaborative bureaucracy'' (Carpenter, 2002). Thus as an effective team leader recognizes the relation between organizational and behavioral variables, and provides the desired environment for team members to effectively reach project completion (Thamhain, 2004). Moreover, a project manager resolves several project complications during a construction project such as completion on time, extra costs, and functionality which if not recognized early on might hinder achieving a complete project by the established time (Henderson, 2008).

One factor that affects the leadership style is "leader-to-subordinates distance" (Wu, Li, & Fang, 2017), which comprises "leader–follower physical distance, perceived social distance, and perceived task interaction frequency" (Antonakis & Atwater, 2002). Physical distance could be described as the spatial distance in work locations between subordinate and leader. However, we could further note that it is possible for a leader to be on a proximal location to his subordinates but socially far (Howell et al. 2002). Social distance in leadership or psychological distance (Napier & Ferris, 1993) is different from physical distance. In psychology it refers to "the degree of overlap between the self and some other person, place, or point in time"(Williams & Bargh, 2008) where in the setting of the organization it is defined as the "perceived differences in status, rank, authority, social standing, and power, which affect the degree of intimacy and social contact that develop between followers and their leader" (Antonakis & Atwater, 2002). Psychological distance between leader and subordinate could be further divided into two dimensions, spatial and social, where spatial distance is related to the location, from the self, of an event in space and social distance describes the difference between the self and others such as social category and hierarchical rank (Berson, Halevy, Shamir, & Erez, 2015).

2.3 Transactional and transformational leadership styles

In this rapidly changing and competitive setting, leadership has become a fundamental issue for managing organizations and employees to working effectively and adapting to the ever changing project setting (Weinberger, 2009). To obtain expected outcomes from an employee, a leader uses transactional leadership skills, and conversely uses transformational style to lead the employee a step beyond what is expected (Akhavan Tabassi & Hassan Abu Bakar, 2010).

Following their empirical study (Avolio, Bass, & Jung, 1999), transformational and transactional leadership concepts show independence, meaning that any one of the two styles could be adopted by leaders independently. Furthermore, studies have shown that each of the two styles has more than one component that expands our understanding of each of the constructs. Also, actions of transformational leadership are interconnected with those of transactional leadership (Bass & Steidlmeier, 1999), in other words where one type of leadership doesn't work adequately, the other one could be employed to seek better results.

The use of contingent reward, a factor of transactional leadership, could be employed as a foundation to allow building trust between leader and follower, which then could be followed by the application of transformational leadership constructs (Bass, 1985). Transactional behavior emphasizes on maintaining stability in the work environment and focusing on task related activities; a transactional approach in leadership would be to reward the employee for accomplishing the duties or tasks required (Lussier & Achua, 2009). Furthermore, Tyssen and colleagues (2013) propose that transactional leadership is better employed on projects of short duration, clear goals, and on a low task innovative environment. They also add that transformational

leadership is more effective if employed on projects of long duration, an environment

coupled with ambiguous hierarchy and high task innovation. In addition, the leader

could augment the use of any one of the two leadership styles depending on which of

the project characteristics is dominant at the time (Tyssen, Wald, & Spieth, 2014).

Transformational leadership aims at understanding leader effectiveness and

looks into ways to enhance followers' commitment and inspire them to tackle complex

work related problems, as such leaders influence followers to offer extra efforts because

the success of the company is directly affecting their own success (Piccolo & Colquitt,

2006). Transformational leadership is concerned with intangible concepts such as

vision, values, morals, and beliefs between leader and follower (Akhavan Tabassi &

Hassan Abu Bakar, 2010). Moreover, this style revolves around the idea of an

employee's intention and behavior toward achieving the project goals. In addition,

Tyssen, Wald and Heidenreich (2014) showed in their research that both

transformational and transactional leadership have a positive impact on employees

commitment to a project.

2.3.1 *Emotional intelligence and leadership*

Increased attention recently is being pointed towards transformational

leadership in the temporary setting but due to some inconsistent findings, researchers

have begun to highlight the connection between transformational leadership and the

emotional intelligence of the leader – researchers are shifting towards linking

transformational leadership with the scope of social interaction (Tyssen et al., 2013).

Evidence from Ayoko and Callan (2010) shows the existence of a positive relation

between the leader's emotions, management behaviors, and team task performance.

Some sub dimensions of emotional intelligence include influence, motivation, and

conscientiousness, and are observed to be essential across all project types and characteristics (Müller & Turner, 2010). In addition results from Cavazotte, Moreno and Hickmann (2012), where the effect of emotional intelligence on transformational leadership was studied, show that conscientiousness – a sub dimension of emotional intelligence – is of value for transformational leadership. Furthermore, emotional intelligence under leadership shows a positive relation with team performance in the temporary setting of the construction industry, and emotional intelligence and charisma are both characteristics that focus on a leader's social communication that bring out the most effective results with subordinates. In their study on the impact of leadership behavior on team members Ayoko and Callan (2010) showed strong and positive relations between a leader's emotion management behavior and higher team task performance.

2.3.2 *Charismatic and transformational leadership*

Some authors believe that charisma is an essential part of a leader's characteristic to be successful in "situations of change or even crisis " (Bass 1990) and that charismatic leadership is a sub part of transformational leadership (Tyssen et al., 2013). Moreover, charismatic leadership "focuses on the mechanisms and interaction processes by which leaders exert their influence on follower's motivation" (Avolio et al., 2009). In addition a leader with charismatic characteristics is known to bring more sense to the goals to be attained, and has commitment from their followers (Lussier & Achua, 2009). Due to this fact (Tyssen et al., 2013), it follows that the problems triggered by authority gap and ambiguous hierarchies could be controlled. Moreover, Wang and colleagues (2005) found indications that positively connects charismatic

leadership to temporary and unacquainted team members' unity while working on projects.

Leadership theories according to Hernandez, Eberly, Avolio and Johnson (2011) are commonly devised under two main categories, the loci of leadership which includes the leader, follower, leader–follower dyad, collective, and context, and the mechanisms of leadership which include traits, behaviors, cognition, and affect. We observe that within the two dimensional framework of Hernandez and colleagues (2011), transformational & charismatic leadership theories fall under all the subcategories of the mechanism of leadership and under the second category locus of leadership in the subcategory "dyad" containing most number of subcategories among all other leadership theories. Moreover, Bass and Avolio (1997) also argued that a transformational leader concentrates on enriching the upper level needs of followers in order to motivate them on accomplishing superior goals, by means of his/her vision, charisma and inspirational characteristics (Antonakis & Atwater, 2002).

2.3.3 *Leadership in temporary organizations*

Project managers as leaders could choose to work on applying one of several streams of thought that could be applied to temporary settings. These theories include Person-Oriented Leadership, Situation-Oriented Leadership, and Interaction-Oriented Leadership (Tyssen et al., 2013).

- Person-Oriented Leadership: this type of leadership does not generally include project characteristics, such as emotional intelligence and charismatic leadership, but have been applied by researchers on temporary project environments (Tyssen et al., 2013).

- Situation-Oriented Leadership: the employment of contingency theories (also known as situational theories) emphasizes on the likelihood that a leader's characteristics match a certain project setting or even when leaders would fit their behavior in order to increase their influence; in addition, the variables are the characteristics of followers, the work environment, the project tasks and external environment (Akhavan Tabassi & Hassan Abu Bakar, 2010).

Fiedler, the founder of the contingency theory (1967), initially began building up his theory by asking employee to fill in a questionnaire that measured the characteristics of one's most preferred and least preferred co-worker, and if the scores are far apart then "assumed similarity" is minimum, but due to problems in interpreting the true meaning of results the theory was further developed and tested (Miner, 1980). Fiedler's contingency theory proposes the use of either a task or relation-oriented leadership style; moreover, a leader could choose to use the appropriate leadership style by following Fiedler's (1967) contingency designed questionnaire (Tyssen et al., 2013).

- Interaction-Oriented Leadership: this type of leadership includes transformational and transactional leadership theories. Furthermore, what gives us more reason to look into and find suitable in this theory of transactional and transformational theory is its empirical framework which, following the work of (Bass, 1985), is based on samples of multi-disciplinary views from various majors of students, undergraduates, educational administrators, and managers.

	1. Leader	2. Context	3. Followers	4. Collectives	5. Dyads
A. Traits "to be"	Trait Theories	Fiedler's Contingency Theory	Path-Goal Theory	Group Composition Trait Approach	
B. Behaviors "to do"	GLOBE / Spiritual Leadership Theory / Behavioral Theories / Ethical Leadership Theory / Transactional Leadership Theory / Paternalistic Leadership Theory	Path-Goal Theory / Performance-Maintenance Theory of Leadership / Complexity Leadership Theory	Substitutes for Leadership Theory	Network LMX Theory	Situational Leadership Theory / Transformational & Charismatic Leadership Theories / LMX Theory
C. Cognition "to think"	Leadership Complexity Theory	Paternalistic Leadership Theory / GLOBE	Romance of Leadership Theory / Implicit Leadership Theory	Social Identity Model of Leadership Effectiveness / Social Network Approach to Leadership	Authentic Leadership Theory
D. Affect "to feel"	Spiritual Leadership Theory				

Mechanisms of Leadership

Figure 2.2 Placing leadership theories within the two-dimensional framework. After Hernandez (2011)

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2.4   Motivation

Definitions of motivation tend to revolve around the concept of "how to provide something to a person to drive him (or her) to do something" (Ruthankoon & Olu Ogunlana, 2003). Authors suggest that a motivated person performs better than a person that is not motivated and that motivation is essential even for the most talented. Seiler, Lent, Pinkowska, & Pinazza (2012) specify that motivation varies in a) level: as in the amount of motivation, and b) orientation: as in the type of motivation. Orientation of motivation lies in the individual's motivating reason behind the action performed or goal pursued.

Moreover, a novel project, the load of tasks, new team members, deadlines, and little time for much work all make an individual's job at hand complicated, consequently influencing their performance and will to get the job done (Tyssen, Wald, & Heidenreich, 2014). A team working together will eventually finish the task appointed and deliver the project; however, the difference lies between a smooth progress and a complicated one. It is down to the leader's skill to provide the team with motivation and consequently make a key difference in the process of the task and the development of followers' skills (Schmid & Adams, 2008). Motivation theories are categorized under content and process theories. Also, a project manager has also to understand motivation theories and where they could be applied in order to effectively lead the team, accordingly we will be looking into available motivation theories.

2.4.1   *Needs theorem (1954)*

- The main motivators according to Maslow (1954) are a person's needs, and they are the ones that drive an individual. Maslow categorized the needs in a pyramid in hierarchical order into the following five levels, and when the lowest need is satisfied it

is replaced with the one above, correspondingly the needs are from lower to upper levels (Halepota, 2005).

- Physiological needs: include the chemical needs of the body. When these psychological needs are not satisfied the individual becomes totally preoccupied with the object involved (Miner, 1980).

- Safety needs: This need is about one having the need to be free of danger, it can have the same pervasive quality as the psychological needs (Miner, 1980).

- Social needs: which include affiliation and general belongingness (Miner, 1980).

- Esteem needs: Fall into two categories, first the type that is essentially internal in orientation – desires for such feelings as strength, achievement, adequacy, confidence, independence, and freedom. Second, esteem may be derived from external sources such as reputation, prestige, recognition, attention, importance, and appreciation (Miner, 1980).

- Self-actualization needs: It refers to the desire to realize or actualize one's full potential; in Maslow's words, "to become more and more what one is, to become everything that one is capable of becoming" (Miner, 1980).

Maslow's theory helps any leader to understand how to appropriately motivate the follower, depending on what level they are on at the pyramid of needs, since each individual is motivated in a different manner (Halepota, 2005). Maslow also suggested that the level an individual is located on is related to their experience in the field or work and not upon age (Kanfer & Ackerman, 2004).

A manager could choose, depending on the characteristic of an individual, years of experience in the company, and his location on the pyramid of needs (figure 2.3), which

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
							Company Perceived as Supportive
Conditions in the Work Group's Environment					Low Perceived Contribution Opportunity	High Perceived Contribution Opportunity	High Perceived Contribution Opportunity
				Production-Centered Leadership	Accommodative Leadership	Accommodative Leadership	Group-Centered Leadership
			Low-Status Congruence	High-Status Congruence	High-Status Congruence	High-Status Congruence	High-Status Congruence
		Low Interaction Opportunity	High Interaction Opportunity	High Interaction Opportunity	High Interaction Opportunity	High Interaction Opportunity	High Interaction Opportunity
	Low Employment Security	High Employment Security	High Employment Security	High Employment Security	High Employment Security	High Employment Security	High Employment Security

NEEDS (NEED ACTIVATION)

- Self-Actualization
- Status-Prestige
- Self-Esteem
- Membership
- Safety

(EFFECTS ON PRODUCTIVITY AND TURNOVER-ABSENTEEISM)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Productivity	High	Low	Low?	Low	Meets Minimum Requirements	High	High
Turnover-Abs.	Low	High	High	?	Average	Low	Low

Key: ☐ = need not activated; ▨ = need activated but relatively satisfied; ▨ = need activated but relatively frustrated

Figure 2.3 Some relations between conditions in the work group's environment. After James V. Clark (1960-61)

strategy to select in order to motivate the individual (Halepota, 2005). Furthermore, Jerome (2013) argues that this theory is reflected in both the organization which learns according to employee performance which aspect needs improvement in the company and for employees whose performance and finest service meets organization values. Nevertheless Clark (1960) was able to reflect in the graph above a connection between employee needs and its connection with an organizations' work group environment, motivation, satisfaction, productivity, and turnover.

2.4.2 *Motivation/Demotivation Theory (1959)*

Also known as the two factor theory, originally Herzberg conducted interviews with engineers and accountants to discover what motivates and demotivates them (Halepota, 2005). The main idea of this theory is to differentiate between motivation and hygiene factors (Ruthankoon & Olu Ogunlana, 2003). First the job enrichment factors (motivators) which are acts that enrich the job such as recognition, responsibility, and freedom (Halepota, 2005). Second hygiene factors or also known as demoivators, such as work conditions, policies, style of supervision, and relationship between employees. Furthermore, he adds that in the construction industry, management can use this theory's survey to identify motivators and demotivators and work accordingly (Halepota, 2005).

Herzberg categorized under each of the factors different sub dimensions: for job enrichment or motivation factors he added achievement, recognition, work itself, responsibility, advancement, and possibility of growth. As for hygiene factors he specified the descriptions as company policy, supervision, relationship with supervisors, work conditions, relationship with peers, salary, personal life, relationship with subordinates, status, and job security (Ruthankoon & Olu Ogunlana, 2003). Herzberg also argued that intrinsic work challenges and the providing of opportunities and reinforcement to employees influences employee motivation far more than any material items, or in other words hygiene factors, since these are temporary motivation factors (Steers, Mowday, & Shapiro, 2004).

Application:

Ruthankoon and Olu Ogunlana (2003) tested Herzberg's theory on all samples similar to Herzberg's original testing, and further they specifically tested construction

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engineers and foremen. In their study results revealed some of the sub dimensions such as recognition, work itself, and supervision to have different and influencing results on job satisfaction. Therefore these updated results revealed that Herzberg's theory is not entirely applicable to specifically the Thai construction industry. Furthermore, motivation factors for Thai construction engineers revealed to be responsibility on the job, advancement in their position, and possibility of growth in the organization. Results show that higher level managers are influenced and motivated by higher order needs such as the growth and achievement (Arnolds & Boshoff, 2002). It appears that the higher an employee's level, the higher order motivation factors would be required.

2.4.3 *X & Y Theory – Two Theories (1960)*

During the 1960's McGregor sought a different way of thinking for setting a theory to the organizational setting, his method was about categorizing how managers view employees and accordingly treat them ("Appendix - McGregor's Theories X and Y A2 - Kitchin, Duncan," 2010). McGregor's way of theorizing formed a turning point in managerial thinking, his theory formed a new outline for managers to follow in their jobs by having the role of guiding and assisting employees rather than imposing and controlling their careers; furthermore, a manager's appropriate method would be to provide opportunities for employee growth and by this they would give their full potential on the job (Kopelman, Prottas, & Davis, 2008). Social psychologist McGregor, the founder of theory X and Y, gathered what managers believed about employee attitude under two contrasting theories accordingly: Theory X, also labeled as cosmology, states that employees are lazy and irresponsible towards their job and better managed in a controlling and commanding environment. On the other hand, theory Y sates that employees seek to grow, carry responsibility, and can be motivated to work

hard towards a certain objective (Kopelman, Prottas, & Falk, 2010). Kopelman (2010) also adds that McGregor did not conduct tests that validate his theory, but only directed readers and researchers on the ways that a follower of theory Y could guide subordinates.

2.4.4 *Achievement Motivation Theory (1961)*

According to this theory behavior is the result of positive and negative past outcomes (Panda, Pradhan, & Mishra, 2014). McClelland's theory, also known as three level theory and Acquired Needs theory, was first initiated after a study he and his students conducted that showed a relation between hunger needs and individuals drive to describe imagery with food related vocabulary. Consequently, they developed the theory by studying drives related to achievement, power, and affiliation (Miner, 1980). Their theory was also a development from Muray's 1938 theory, what is distinct about this theory is not considering the hierarchy in achieving needs, but rather argued that at any time an individual can choose to activate any of the needs and it would consequently lead to motivating behavior (Steers et al., 2004). In addition McClelland believed that socialization plays a role in the amount of affiliation, power, and achievement needs an individual gains (Seiler et al., 2012).

- Achievement need: expressed through behavior of persons who always seek improvement in their career, and who aim at completing hard goals in order to feel satisfied with themselves (Panda et al., 2014), they are highly competitive individuals and always set high goals (Steers et al., 2004).

- Power motive need: may be expressed in different ways by the person responsible of managing a team and depends on the stage that one is undergoing, these stages vary from seeking to take strength from others that are stronger, seeking to help

others, and looking to influence individuals for the reason of reaching group success (Miner, 1980).

- Social affiliation need: expressed by one's effort to create friendships and social circles to influence others (Panda et al., 2014). McClelland's theory also includes a set of defined needs related to the workplace (Steers et al., 2004).

2.4.5 *Equity Theory (1963)*

The key about this theory is in the exchange that exists between two individuals, one gives an input and receives back a certain outcome in return for the service that he/she provides, also the input must be valued by the receiver and considered as significant or else there would exist a possibility for inequity (Miner, 2015). Adam's equity theory is actually based on perceived inequity's negative influence that affects an individual's motivation and in some cases leads employees to put in minimal effort or request better rewards (Seiler et al., 2012).There are three main ideas in this theory, the individual's input (e.g. effort placed for the completion of a task), the outcome (e.g. payment received at the end of the month), and referent selection (e.g. a coworker) (Miner, 2015). The third concept in this theory, the referent selection, could vary in a wide range of ways such as self-evaluation, comparing oneself with a coworker of the same field of work in the same or another company, people of same age or educational level. Furthermore, the third level is more precisely related to concept of pay and referent selection inequity (Scholl, Cooper, & McKenna, 1987).

2.4.6 *Expectancy-Valence Theory (1964)*

This theory revolved around studying the concept of why an individual tends to prefer an outcome over the other, and the main term used is valence: a certain emotional force, positive or negative, towards preferring to have an outcome or not (Miner, 1980).

Furthermore, according to this theory an individual is motivated towards a certain behavior and chooses to perform it, if they believe that doing the effort will be rewarded and valued by others (Seiler et al., 2012). Due to the belief that the extra effort will lead to rewards, the more the individual is rewarded the more effort will be put in (Halepota, 2005). Also we would like to add that Victor Vroom's theory sheds light on extrinsic and intrinsic motivation and viewed them as additive, and as a result they are indistinguishable. This was further developed by researchers into the intrinsic and extrinsic motivation approach (Miner, 2015).
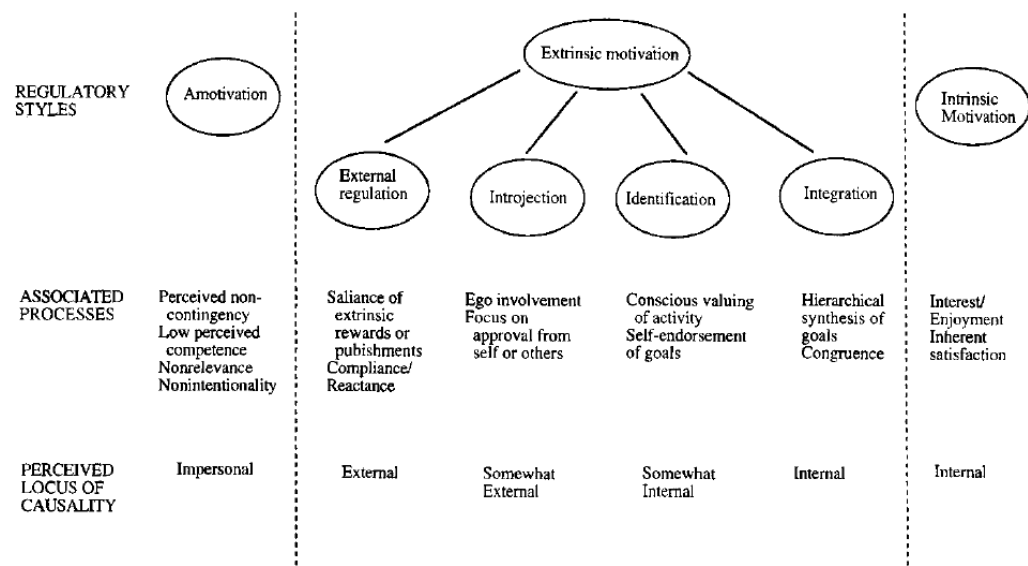
Figure 2.4: A taxonomy of human motivation attributed to Ryan and Deci (2000)

Motivation could be extrinsic or intrinsic, moreover, extrinsic motivation can be further divided into four types: external regulation, introjection, identification, and integration, in other words showing that a gradual move is occurring from external to internal motivation (Ryan & Deci, 2000). The most famous work that focuses on intrinsic / extrinsic sub systems of motivation is that of Edward Deci's cognitive evaluation theory (1975), that mainly argues that external factors affect the individual's autonomy and thus enhances and maintains intrinsic behavior (Zhang et al., 2016).

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Furthermore, Ryan and Deci (2000) explain that satisfying needs of an individual (in terms of competence, relatedness, and autonomy) would allow one to internalize external motivation and maintain internal motivation.

Whenever an individual performs a job for the main reason of obtaining something of value, such as pay and work security, a reward which is detached from the activity of the job itself, then one is extrinsically motivated (Ryan & Deci, 2000). Traditionally, extrinsically motivated individuals become controlled by the instrument of motivation (Vansteenkiste et al., 2006). However, in the field of education it is observed that students do not necessarily enjoy performing their work and are required to be extrinsically motivated, therefore teachers apply more active forms of extrinsic motivation as a key strategy for successful results with their students (Ryan & Deci, 2000). Also Chen and colleagues' (2017) research on motivation showed that the choice of applying one of the different sub categories of extrinsic motivation in firms reduced the amount of monitoring of temporary employees on the job.

Whenever an individual performs the activity for the sake of its own satisfaction, which could be for the enjoyment of it or the challenge connected to that activity, then one is intrinsically motivated (Ryan & Deci, 2000). Intrinsic motivation would be the presence of an individual's interest and willingness in performing the task that would consequently increase one's self-esteem and show signs of work enjoyment (Chen et al., 2017). Moreover, intrinsic motivation could be triggered by leaders using their emotional intelligence skills such as attracting an employee by describing the task from a more interesting perspective (Tyssen et al., 2013), in other words by connecting the task to the general vision and goals of the organization.

2.4.7 *Goal Setting Theory (1968)*

Edwin Locke based his theory on formerly existing concepts, mainly the management by objectives approach into what is known today as the goal setting theory, moreover he was joined by Gary Latham who worked on testing the theory in the field (Miner, 2015). In order to understand goal setting theory we need to understand the management by objectives approach which is mainly about setting objectives, working towards achieving the goals, and then evaluating and assessing performance and contribution of members (Miner, 2015).

As for goal setting theory, it zooms in on the specific measurable and moderately difficult goals, it assumes that the challenging aspects of goals motivates individuals and gains their interest (Seiler et al., 2012) by applying the high performance cycle framework (Latham, 1990) which was later tested in 2012 by Latham and showed to endure the test of time. The term goal covers two main aspects: content which refers to the nature of the task, and intensity which refers to the importance one affords a certain goal, moreover the goals which are considered important produce commitment and persistency in an individual (Miner, 2015).

Furthermore, this theory could be applied to several fields such as those mentioned by Locke and Latham (2013) through job analysis. By setting a vision for employees about the goals of the company as a whole they tend to contribute and not withhold knowledge from others. Performance management is conducted by training and appealing to employees to always aim for continuous improvement. Self-management is implemented by training employees on self-efficacy in reaching their goals and overcoming hard challenges. Steers and colleagues (2004) state that two dimensions were later added, the first was the dimension of time which was proposed

by Early and Erez in 1991, and the second dimension by Crown and Rosse (1995) who added the role of group goals effect on performance, this dimension became widely used later on in industry.

2.4.8 *Reinforcement Theory (1969)*

As its name states, Skinner's reinforcement theory, also known as operant conditioning in the field of psychology, states that reinforcing a behavior gives the individual one key reason to repeat it; moreover, if one is punished or not rewarded for their behavior this would be one reason for them not to repeat that behavior (Seiler et al., 2012). At the beginning Skinner found it most suitable to test his theory on lab rats and children, and his results showed that the earlier a desired behavior is rewarded, the stronger it becomes. Reward for an employee in an industrial sector would be financial reward, or a reward that is not in part of an employee's pay (Panda et al., 2014). Skinner and other theorists also reason that the factor of time allows an individual to learn the relation between the goal and reinforcement, which will guide one's behavior in the future (Katzell & Thompson, 1990). Several models based on the reinforcement theory where developed to clarify our understanding about the value of this theory on work motivation and performance (Steers et al., 2004). For example Fred Luthans, an engineer and mathematician, had interest in Skinner's theory and developed it into the Behavior Organization Modification theory (Miner, 2015). Other models such as management by objectives look at ways to improve motivation through the reinforcement of goals, by introducing the factor of participation and negotiation of objectives between leader and follower, giving employee feedback on their performance, and the fact of setting hard goals for the right type of self-confident employees allows space for better performance (Katzell & Thompson, 1990).

2.4.9 *ERG Theory (1972)*

Alderfer further added to Maslow's need hierarchy theory and called it the ERG theory, which is basically grouping the pyramid of needs into three categories: Existence (psychological and security needs), Relatedness (social belongingness and self-esteem needs), and Growth (self-actualization needs) and satisfying any one of these groups in any order could have a motivating influence on an individual (Seiler et al., 2012). The first group – existence – has to do with the basic human needs, the second group – relatedness – is concerned with an individual's social life and maintenance of that aspect, and the third group – growth – covers an individual's intrinsic need to improve and develop by accomplishing personal achievements (Panda et al., 2014).

After conducting an empirical study on Alderfer's ERG theory (Arnolds & Boshoff, 2002) by sending questionnaires to top managers and frontline employees in different business organizations such as manufacturing, trade, banking, and other service divisions, researchers found that satisfying growth needs of frontline employees had an indirect impact on employee intentions in performing well on a task. Also the satisfaction of relatedness needs from coworkers such as belonging within the team environment resulted with positive effects on employee intentions and performance to work well. However, results on existence needs did not show positive effects on performance intentions (Arnolds & Boshoff, 2002), which also agrees with Herzberg's theory that fringe benefits and pay are hygiene factors.

2.5   Applications of motivation theories

Motivation theories have been studied in the context of several organizations, including development of the public sector motivation construct (Anderfuhren-Biget,

Varone, Giauque, & Ritz, 2010), which builds upon the needs theory and tries to demonstrate that higher order needs are the most significant motivators to public sector employees. Their survey covered 279 municipalities and their results showed that employees valued supportive working environment and good relations with coworkers. Another survey employed to the healthcare work sector investigated 114 Physicians and 24 physician leaders to determine what motivators they perceived to work best in that field. Results for physicians showed that intrinsic motives such as enjoyment in the work itself was of highest importance, with other important motives being "interesting work (mean value 2.88), appreciation of work done (3.97), empowerment and autonomy (4.54) and work-life balance (Conrad, Ghosh, & Isaacson, 2015). Moreover; the product-service system industry has also utilized the extrinsic and intrinsic motivation approach to find out which factors most motivate their employees, by studying the case of a health care equipment surveys provider it was revealed that intrinsic factors such as skill development lead to pride in performing the job. In addition to positive administration was viewed as a significant motivating factor for employees (Kreye, 2016). As for educational institutions, a survey was conducted by Viswanathan and Devi (2015) for information technology (IT) students on what motivational approach affected faculty members, and the results turned out to include extrinsic motivation factors in addition to willingness and enjoyment of the work itself.

Several motivation methods could be applied to the construction setting, and researchers have constructed different methods for the applications on selected factors of the construction setting. Rose and Manley (2011) studied financial incentives compared with construction contracts by specifying three financial incentives with respect to four motivation factors from combined theories of motivation and sent

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surveys to four case projects. Results revealed that motivation drives were as follows: risk allocation, future work, relationship workshops, design involvement, value-driven selection, incentive flexibility, incentive goal opportunities, and reward distribution.

2.6 Leadership in the construction setting

Little attention has been paid to the topic of leadership in the construction industry (Giritli & Oraz, 2004), and to developing the leadership style of the construction project manager (Ofori, 2008). In order to understand how to efficiently lead the construction team one has to have a clear idea about the construction team members' abilities, how to use the characteristics of a construction setting positively to motivate the team members, to understand leadership and motivation styles, and to be able to recognize which style is better employed at what time and condition during the construction project.

The authority of leader in a temporary organization might decrease due to the semi-autonomous environment existing when the team is located away from the parent organization, and thus leads to project managers facing the "authority gap" that is caused by ambiguous hierarchies (Tyssen, Wald, & Heidenreich, 2014). We also add that working on and building a construction project is never the same and if a situation is treated well by the project manager and solved one time, this does not necessarily mean that the next time it would be solved the same way since construction projects are mostly unique as a project in terms of the combination of team members and location of the project. This gives us more reason to study our project setting and the different leadership styles that could be applicable to this setting.

Furthermore, an employee working in the temporary organization has to handle a given setting by putting in more effort, making use of previously gained skills and experiences to solve difficult tasks, and most important showing success at the task given in order to be recognized by the project manager and consequently the parent organization (Chen et al., 2017). As we are further looking into the temporary setting we realize that there are differences in the characteristics between the employees working in a temporary organization and ones in a permanent organization. The dynamic environment of a temporary organizations provides opportunities for individuals to move faster in their careers and reach higher positions in less time than they would have been able to in a stable environment (Raiden et al., 2004).

The construction site setting characteristics – such as temporariness, ambiguous hierarchies, varying work teams, members of various disciplines, and unique project outcome (Tyssen et al., 2013) – reflect those of a temporary organization. Consequently, we can suggest that leading in a construction site setting requires the leadership ability of the person most involved with the bundle of activities of the project from start till end: the project manager. Moreover, it is worth mentioning that there exists a difference in leadership approaches between leading a permanent organization settings and a temporary setting (Tyssen et al., 2013).

CHAPTER 3

CONSTRUCTION SETTING

3.1 Preamble

This chapter explains the tailored model for the site team in a construction setting, and also considers the characteristics of this setting such as the head office, site office participants, communication channels, and the temporary features present. Furthermore; the chapter highlights the project manager's participation in the construction site team.

3.2 Introducing the construction project setting

The construction industry setting features a simultaneous initiation of projects that depend on numerous activities and relationships between employers, contractors, and subcontractors. The construction project comprises functions such as engineering, finance, marketing, human resources, research and development, manufacturing, consulting, insurance, contracting, and safety specializations. When a construction firm wins a bid on a project or has been assigned a role on a project as employer's personnel or as a subcontractor, the organization's head office would compose specialized site office function teams. Also there exists the possibility that the employer lobbies for smaller organizations of specialized functions to take over the corresponding site office function. Site office teams are of various disciplines, might come from different locations, and are responsible for completing the number of tasks assigned by the corresponding head office engineering function.

The deliverables, procedures, and phases of a construction project are designed, managed, and implemented by key participants of the construction industry, starting from

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the designer who is responsible for rendering design plans and specifications to the contractor who has the responsibility of delivering the facility by executing the works during the construction phase and also follows up till the substantial completion phase. As for the project manager's team, they have to provide services during all phases of the project. The project manager communicates with upper management and the head office to strive to meet all objectives.

The execution of tasks is delegated to roles and organizations in the construction industry - those of the owner, designer, contractor, consultant, and sub consultants which assign individuals with tasks, missions, and requirements. The consultant organization takes on functions such as architectural, structural, mechanical, electrical, and finance departments, where the department board of directors at some point dispatches individuals and assigns them to work on the design of a specified project.
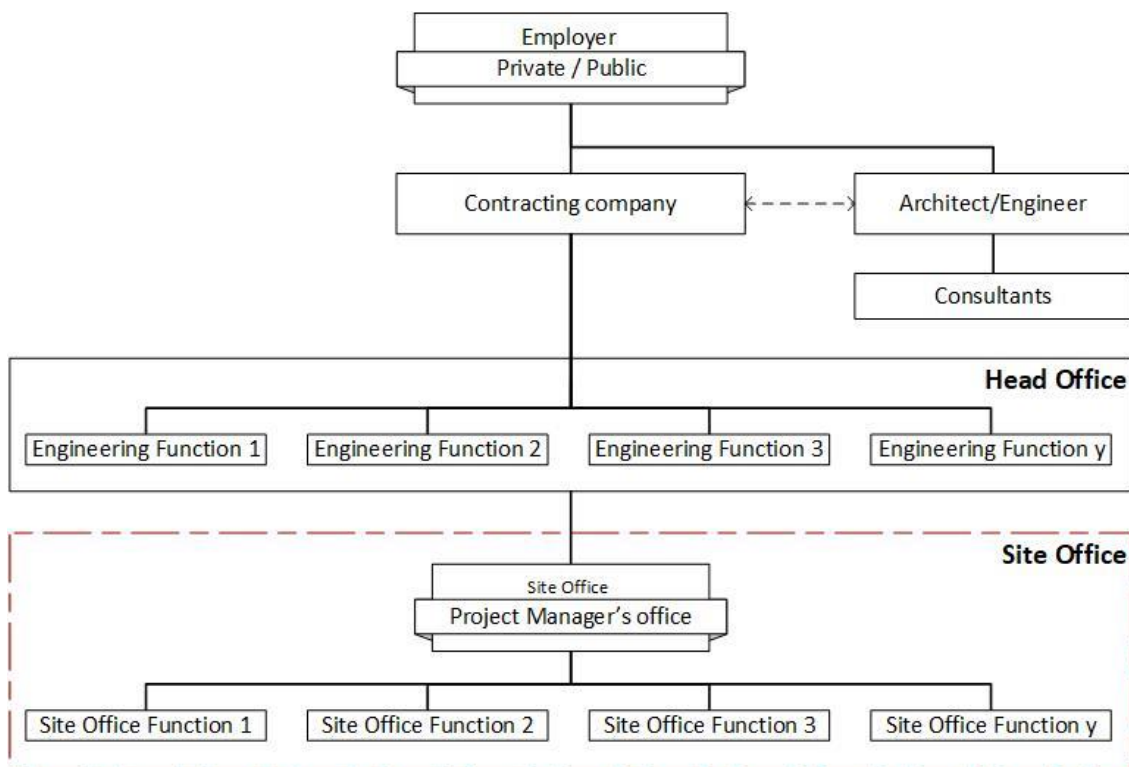
Figure 3.1 Construction project head and site office

3.3 Construction setting
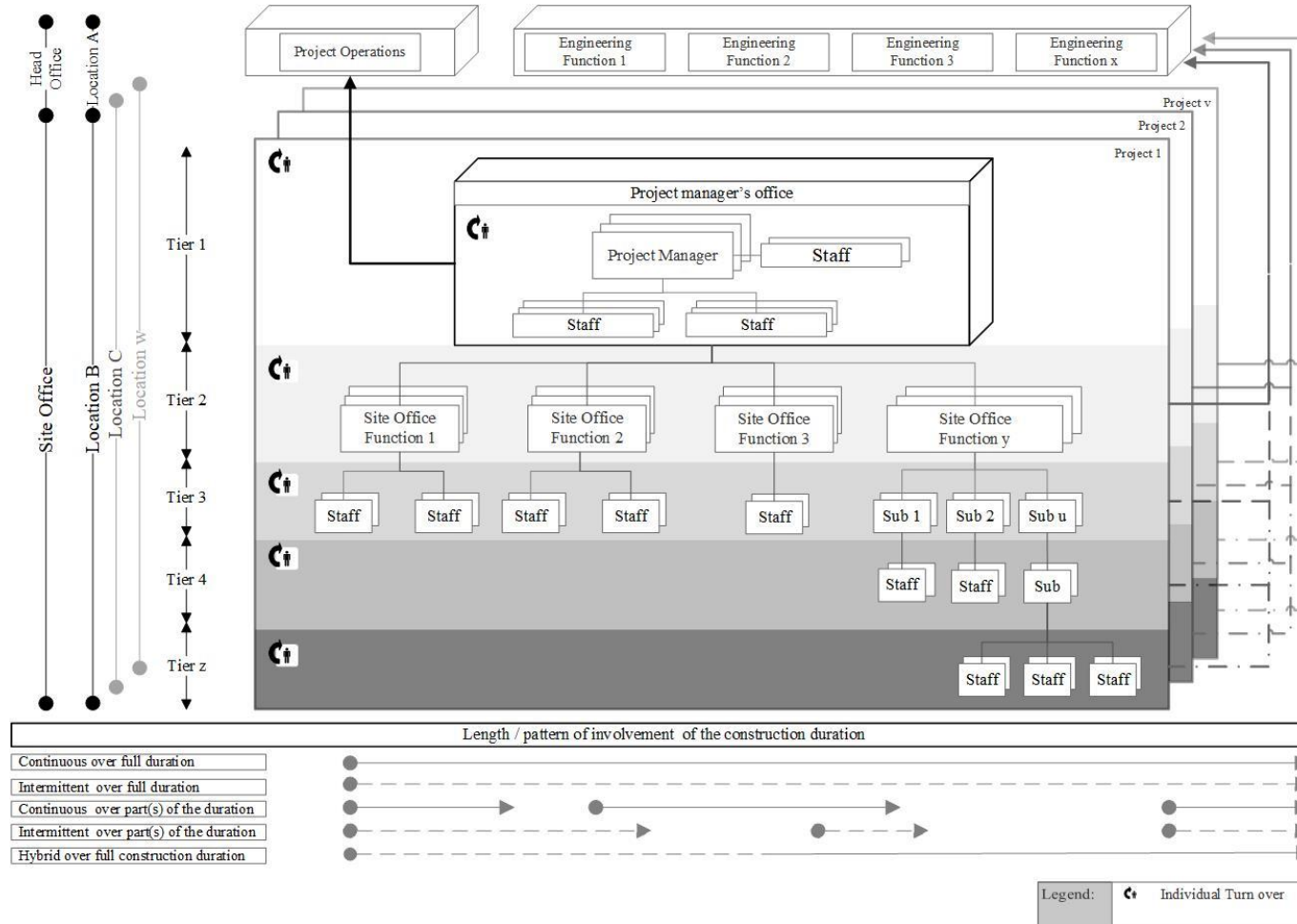
Figure 3.3 Construction project setting model

3.3.1 *Hierarchy and communication*

Site office functions mirror head office engineering functions. They include contract administration, health, safety and security, scheduling, quality assurance & quality control, architecture/engineering specialties, general contractor and sub-contractor teams. Accordingly, head office functions have high levels of authority over their corresponding site office function. As for the project manager's team being responsible for the site office functions the project manager also has authority over subordinate employees. Moreover, the site office is divided into tiers that range from Tier (*1*) being the project management team having the highest rank on site, reaching Tier (*z*) consisting of labor and office workers.
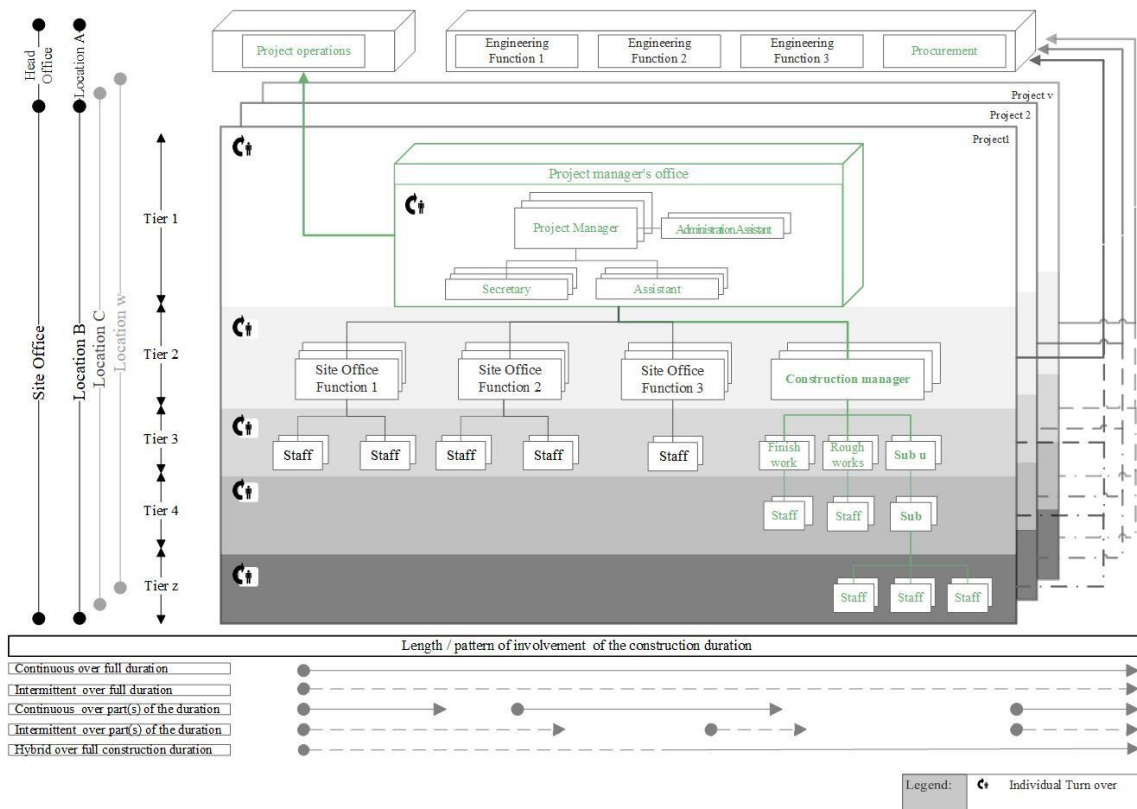
Figure 3.4 Project setting examples of engineering functions the construction manager

Employees working on duty – such as the mechanical, architecture, and landscaping site employees – report not only to their corresponding upper department function, but also to the project manager's team. Each tier of subordinates has a communication channel represented as dashed with the upper tier of employees, also a command or reporting channel with the project manager's team and head office corresponding function.

A project manager's career in the business of construction projects is reviewed by large client organization, thus when a project manager looks good on paper, the client competes for hiring that project manager to the team. Furthermore, the client organization looks into several names of project managers and their reputations and keep track of their status in the construction industry.
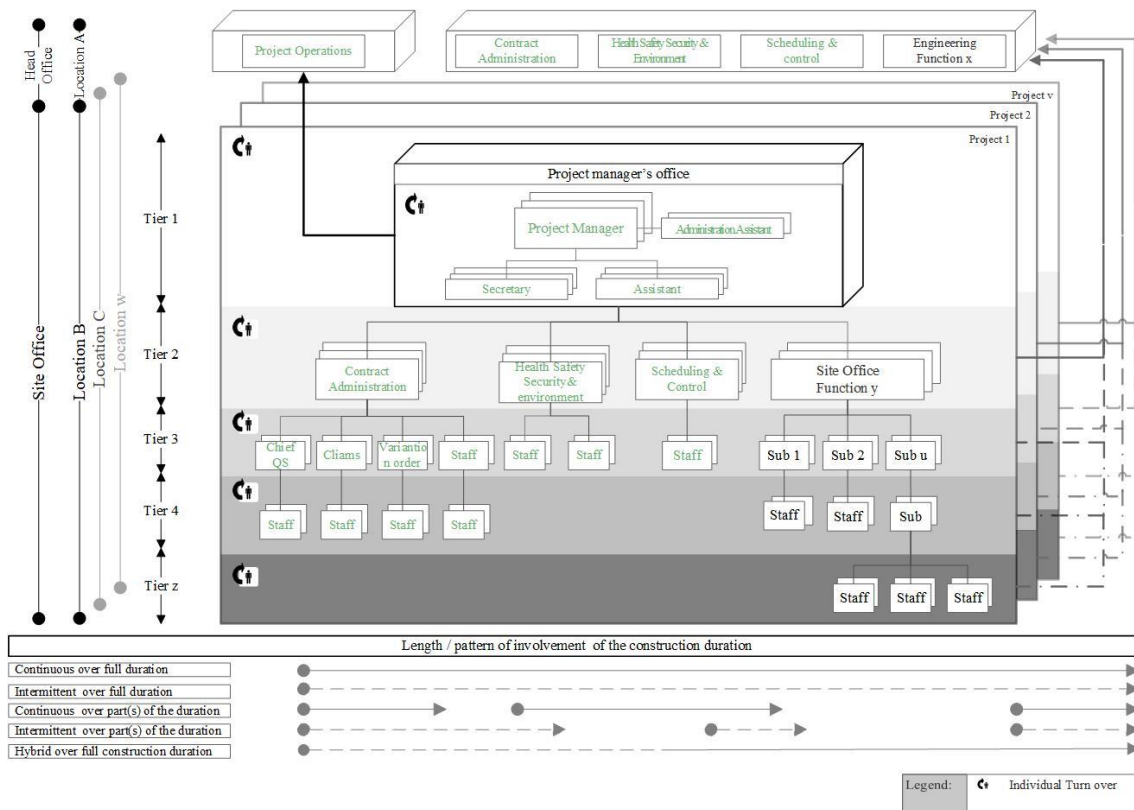
Figure 3.5 Project setting examples of engineering functions

3.3.2 *Project location*

The diversity of tasks in the construction profession demands the engagement and recruitment of individuals of diverse professions; furthermore, construction output is rarely transportable to be assembled on site, therefore construction organizations deploy individuals on their behalf to temporary project setting locations (Raiden et al., 2004). A construction organization could have several projects occurring at the same instance, and at several locations either in the same country or internationally. In some cases employees are transferred to different project locations due to reasons such as better wages, a preference in a certain country, interest in a more visible type of project, aspiration to be hired by a large client, or ambition in building a better career path.

Furthermore, projects could be simultaneously awarded to the same organization, Figure 3.2 shows a number of project layers, where Project 1 could be in the process of being built at the same time as Project 2, but the latter with a different combination of teams. Consequently, even though projects could have similar phases, it is never possible that one is identical to the other, or even occur under the same exact conditions.

3.3.3 *Turnover and employment*

Turnover is a common aspect on projects, and could occur on any level of the project organization. For the construction setting turnover of individuals could be due to several reasons such as "redundancy, retirement, dismissal, or voluntary exit" (Raiden et al., 2004). As for the project manager, more exposure leads to a higher percent of turnover, owing to his/her central role on a project, and connection with members of the head office as well as the site office. Project manager turnover could be due to reasons such as client preference to change due to complications between them, stepping away

and leaving the position for someone else. This occurs in cases when the client prohibits the project manager from attending meetings, indirectly asking him/her to leave the position. Also, turnover could be due to other reasons, such as sudden retirement (which could be the case due to having health problems or injury) dismissal (due to breaking regulations of the project contract), or intentional exit (due to previous engagement with another company). The likelihood of changing the project manager is higher than any other member on the project team, in some cases the process of firing and hiring a new project manager could reach up to one per year during a project's time frame.

As a result, researchers have become interested in the setup of the construction project setting, including Miterev and colleagues (2017) who built upon the human resource management traditional selection, employment, and release method a new model specifically for the project oriented organization. Their model considers the phase of employment the assignment, engagement, and dispersion of employees on a project, thus showing the differences in project oriented setting from most organizations, and the need to further explore the different aspects construction project settings.
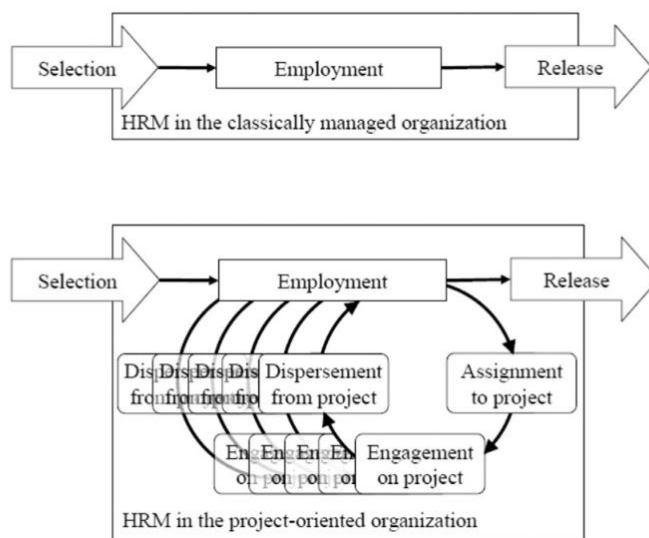

Figure 3.6 Classically managed organization vs. project oriented organization. After Huemann and colleagues (2007)

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3.3.4 *Time/length of involvement*

The construction site team is composed of a number of member involvement characteristics over a project time frame, multiple team members from different parent organizations are gathered together into different groups on a temporary bases to work on specified tasks (Giritli & Oraz, 2004). Furthermore, multiple stages of the construction project involve members of various skills (Wu et al., 2017), where some tasks cannot start until other individuals have finished their work. One example is the task of paint finishing when workers cannot proceed unless all engineering functions such as plumbing, electrical, and mechanical works are complete.

In addition, in the construction industry members enter and leave the site setting on different intervals and stay for a specified period of time. We divide them into five different layers of involvement over the construction duration: continuous over full project duration, continuous over part of the project duration, intermittent over full project duration, intermittent over part of the project duration, and hybrid over full construction duration.

- Continuous over full project duration: the project manager's team and the health, safety, security, and the environment professionals are involved in a project from day one till substantial completion of the project. It is possible that the project manager in person does not visit the site every day, but his assistants and team of employees keep their manager well-informed and updated on all activities occurring on the site. Thus a project manager has a core role in the process and is described in the chart above as continuous over full project duration.

- Continuous over part of the project duration: members of the quality assurance and quality control teams include site engineers of various specializations, and

visit the site depending on what phase of construction is being executed to make sure that tasks are properly implemented. This team of site engineers including civil, electromechanical and architecture professionals are considered core members on site, they are available from the start until the end of the project, but each site engineer visits the site intermittently. Visits depend on the phases of a project but as general examples a civil engineer visits the site during the excavation phase and a structural engineer visits during the concrete works and masonry phase. Later during the rough works phase civil, electrical, mechanical, and HVAC engineers visit the site intermittently. As for the architect and interior designers they visit during the finishes phase. Furthermore, the landscape architect visits the site during the exterior finishes phase for checking on landscaping of roads and green plants on site. Also the number of engineers that visit during concrete, masonry and rough works phase are more than those visiting during interior, exterior finishes and landscape phases. Hence we consider quality assurance and quality control professionals followed by procurement professionals to be under the category of continuous over part of the project duration.

• Intermittent over full project duration: members that work on project controls set a schedule related to the project, they also detail the cost of activities, and estimate a budgeted cost of work performed. Their job also entails obtaining a budget for the work schedule and weekly updating of their schedule according to the actual costs to make sure that current costs will remain below the project budget. As a result, scheduling and cost control individuals are present from start to finish of the project and intermittently check for updates on the construction project site, thus we locate them under intermittent over full project duration in the chart above.

- Intermittent over part of the project duration: members including government organizations also play a role in any project being built, by sending inspecting representatives such as those checking that a project provides an environment safe and free of danger. These government organization representatives or client representatives visit the site from time to time, as such they are involved intermittently over part of the project duration.

- Hybrid over full construction duration: contract administration individuals work from start to finish of the project, but as claims and variation orders increase and pile up their job demands increase at some point and involvement of the number of individuals on this team is hybrid during the project time frame.

3.4 The PM role in administrating team building & deployment

Choice is an inevitable factor when hiring individuals to work on a construction project setting, most of the time employees are "borrowed" from their corresponding department by the project manager who lobbies to have them on his team (Turner & Müller, 2003). The project manager also lobbies for certain individuals that he/she has previously worked with and finds suitable for the project. Therefore, before a project is initiated, the project manager would have prepared and allocated a certain number of individuals to activate the project. Furthermore, a project manager's role in advertising themselves is essential since the employee might not find it encouraging to work on the project. The role of the project manager is also to arrange for a strong project team environment, which will become the main foundation of the team, and increases with the addition of new members during later phases. Nevertheless, in cases when turnover of the
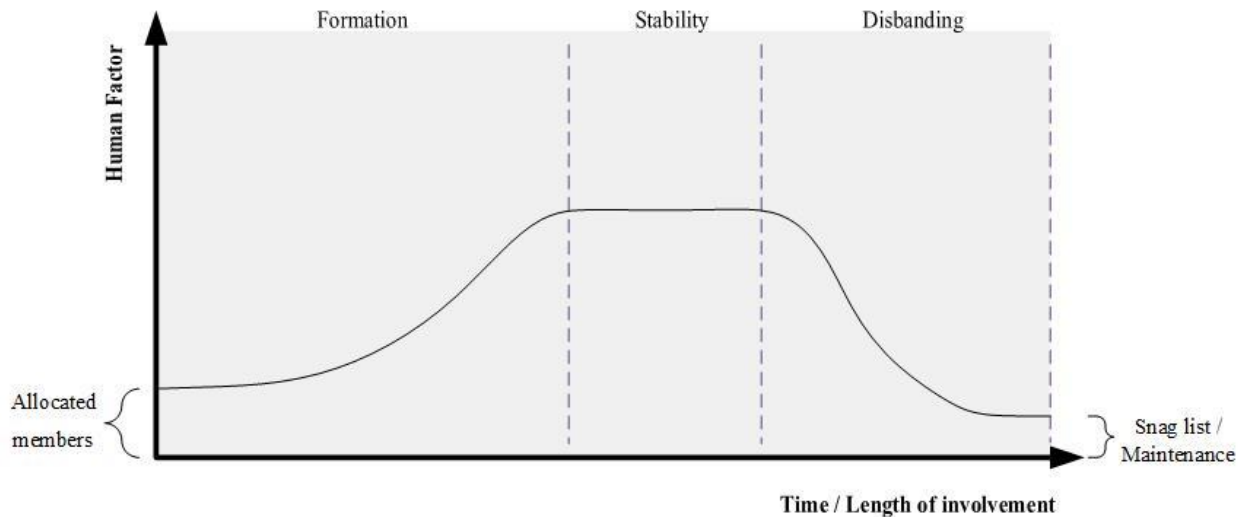
Figure 3.7 Human factor versus time and length of involvemnet

project manager occurs and teams remain the same, it is for the project manager to take over the work from where it was left off earlier.

During the first phases of the project – the formation stage – the number of employees is stable, equipped with the previously allocated members. Then the number of teams begins to grow as the project works proceed. As a result, the form of the curve for human factors with respect to time/length of involvement begins above zero, and begins to build up gradually as more members become involved in the project.

Then at a certain point the graph reaches a stable line which represents the time when members are proceeding to work on the tasks that they have been appointed to work on. Human factor indication reaches a level where all core and temporary individuals are working and no additional employees are required. Furthermore, the role of temporary members in the construction setting shows an essential role in maintaining a creative environment of learning that is extended from upper managers to project managers or from project managers to their corresponding teams (Spatz, 2000). Throughout the stable

stage team members join efforts together to accomplish their tasks within the specified period of time and for the purpose of completing the project.

The disbanding stage begins when tasks are concurrently being completed, teams are dispatching their employees on other projects or ending their contracts. The disbanding of team members occurs over a shorter period of time, at this stage the head office might decide owing to the project manager's recommendations to keep some members as permanent employees or to renew their contracts on other current or future projects. After project completion some employees would stay to complete snag list tasks, interview residents or users of a project, or keep on visiting for maintenance related issues. Furthermore, the graph represents an approximation of phase lengths, which in reality could be wider and depend on project nature.

3.5 The project manager's related leadership and motivation role

The majority of the project manager's work comprises paperwork, interpretation of reports, and reconsidering plans for the purpose of project objectives; moreover, their role is both cathectic and cognitive. A cognitive role is about leading subordinates by the use of experience and awareness, and the cathectic role by the use of emotions and motivation for the purpose of tying and developing commitment of subordinates to a larger organizational resolution (Turner & Müller, 2003). Nevertheless, the project manager's relationship is with both the upper board of directors and site office subordinates, which gives him/her a significant role and impact when leading to motivate the project team.

Members work together in teams, they develop friendships, get acquainted with each other, and could build, with the help of the project manager, a healthy working environment. The project manager could transfer knowledge, skills, and experience to senior employees by giving on the spot training. Onsite training could come from

coworkers of the same level, this environment leads to an increase of an employee's motivation, and might allow for improvement in performance and the will to work harder.

Furthermore, duality of reporting and leadership is a fact that exists on any construction project setting as such when employees are deployed on a project they report to their corresponding division in addition to the project manager's team. In these situations leaders could share leadership roles.

CHAPTER 4

LEADERSHIP AND MOTIVATION IN THE CONTEXT OF THE CONSTRUCTION SETTING

4.1   Preamble

In this chapter motivation and leadership theories are analyzed according to their respective factors. By specifying both characteristics of leadership styles and motivation theories, we link how leadership might serve motivation. In sum, the purpose of this chapter is to find to what extent the project manager could promote employee motivation. Furthermore, this chapter highlights the project manager's part in motivating the construction site team by taking in account the features of the construction setting model.

4.2   Transformational and transactional leadership

Construction projects present a challenging setting due to various project types, temporary settings, diversity of members, and multiple disciplines. Also, each time a project emerges it requires the combined effort of project teams to plan and implement related project scope, schedule, activity orders, cost control, quality assurance, human resources team compositions, safety and control, claims management, and project communication strategies. Furthermore, the situations encountered, location, and project duration always vary depending on the client requirements. A project manager's management behavior involves organizing, procuring, directing, and planning for project activities; nevertheless, leadership on a construction site is also part of a project manager's role. The project manager's leadership role is of interest to us, since it is key in controlling the factors that drive employees' will to perform better in this setting.

Leading subordinates could be by a transformational style where the charisma and emotional intelligence of the project manager plays a role in inspiring trust, locating potential, innovatively tackling complex situations, and encouraging subordinates to take challenges and visualize long term goals. Furthermore, a transformational leadership style complements transactional leadership style which is more about the leader and managing project resources. Hernandez and colleagues (2011) conducted a qualitative review of leadership literature and categorized transformational leadership and charisma under two dimensions. One dimension includes four mechanisms for transmitting a leadership role : traits, "to be"; behavior, "to do"; cognition, "to think"; and affect, "to feel". Another dimension is the Dyads which is the relation between leader and follower as a source of leadership.

4.2.1 *Transactional leadership style characteristics*

A transactional leadership style covers Contingent Reward (CR), Active Management-by-Exception (AM), and Passive management-by-Exception (PM) (Antonakis & Atwater, 2002).

- Contingent reward: this criteria could be a financial or non-financial reward that serves as a basis for building trust between leader and follower.

- Active management-by-exception: this criteria describes positive monitoring of subordinate work progress.

- Passive management-by-exception: this criteria describes a leader who avoids to fix an individual's mistake until after the mistake occurs.

4.2.2 *Transformational leadership style characteristics*

A transformational leadership style builds on transactional leadership, covering Idealized Influence (II), Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individualized Consideration (IC) (Piccolo & Colquitt, 2006).

- Idealized Influence: this relates to the charismatic aspect in a leaders behavior that allows them to identify with followers.

- Inspirational Motivation: this dimension describes the leader who draws an interesting global vision that attracts followers.

- Intellectual Stimulation: this dimension describes the aspect of a leader who encourages challenges, risks and benefits from an employee's problem-solving ideas.

- Individualized Consideration: this dimension describes the leader who acts as a guide, listens, and is concerned about followers needs and worries.

4.3 Motivation theories applied to the construction project setting

Motivation theories could be classified into two categories: content or need based theories and process theories. Content theories focus on human needs and on the ways of satisfying a need to improve performance on the job. Content theories of motivating include Maslow's hierarchy of needs theory (1954), Herzberg and colleagues' (1959) two factor theory, McClelland's (1961) achievement motivation theory, and Alderfer's (1972) ERG theory. Process theories look at motivation from a different perspective and define it as a mental process as such an individual is motivated by being appointed with a challenging goal (Seiler et al., 2012). Process theories include Adams' (1963) equity theory, Vroom's (1964) expectancy theory, Locke's (1968) goal setting theory, and Skinner's (1969) reinforcement theory (Seiler et al., 2012).

Figure 4.1 includes the relevant motivation theories that are applied to the organizational setting, some theories such as the goal setting theory were built on the management by objectives theory. Alderfer's ERG theory was built on Maslow's need hierarchy theory, which basically grouped the human needs into three categories of existence, relatedness, and growth. Herzberg's two factor theory builds up on Maslow's theory by grouping the needs into motivators and demotivators. Demotivators include physiological and safety needs, whereas hygiene group or motivators include social, esteem and self-actualization needs.
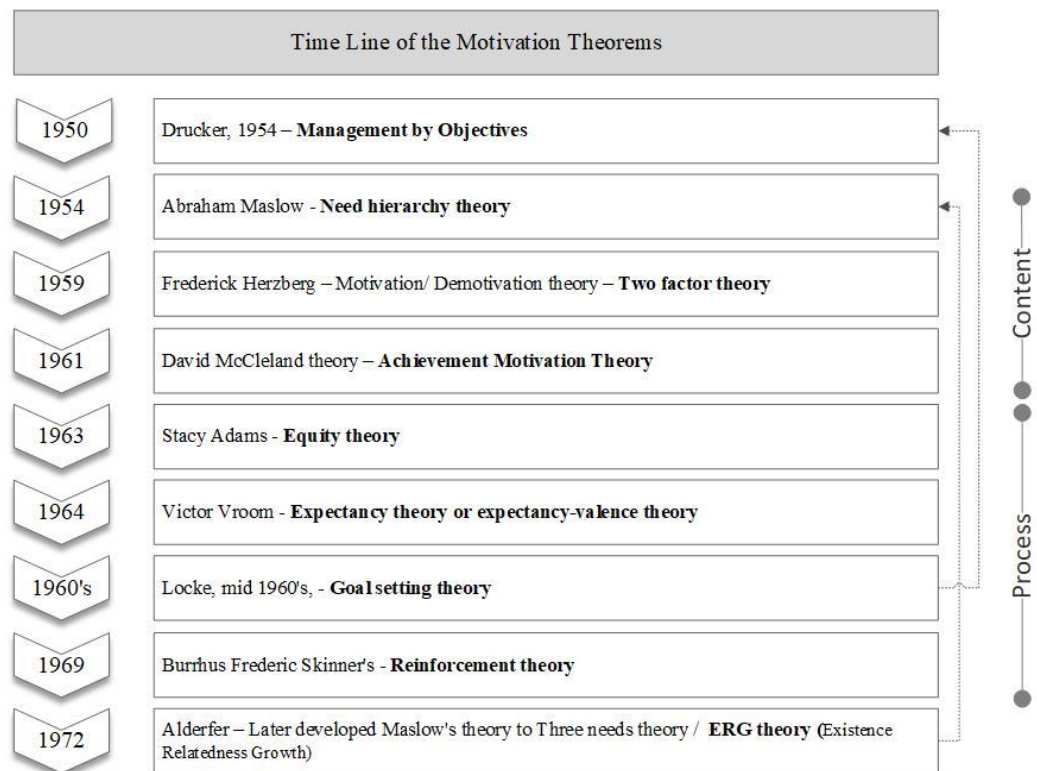
Figure 4.1 Timeline of motivation theories

4.4 The project manager's leadership influence

The project manager's leadership influence over the construction team varies along the time and length of the project duration due to characteristics such as

temporariness, existence of multiple tiers, and presence of two superiors (one at the site office and another at head office). Accordingly, we specify to the project manager four leadership influencing effects over project participants: close leadership, tiered leadership, dual leadership, and limited leadership. Close leadership influence exists when the project manager has direct and sole influence over the subordinate's motivation. Tiered leadership exists when there are a number of tiers, but the project manager has control over the individual through the subordinate, and could work on influencing that individual without the interference of the head office. Both close and tiered leadership have a direct influence over the individual. Dual leadership exists when both the project manager and the head office have control over influencing subordinate motivation. Finally, limited leadership exists when the project manager has limited control over the motivation of the employee since head office has control in that situation.

| LL : Limited Leadership | DL : Dual Leadership |
| TL : Tiered Leadership | CL : Close Leadership |

Figure 4.2 The project manager's leadership influence

The following tables scrutinize the effect of each of the project manager's transactional and transformational leadership styles that serve content and process theories of motivation. Under each leadership style a criterion, reasoning and extent of project manager influence is specified.
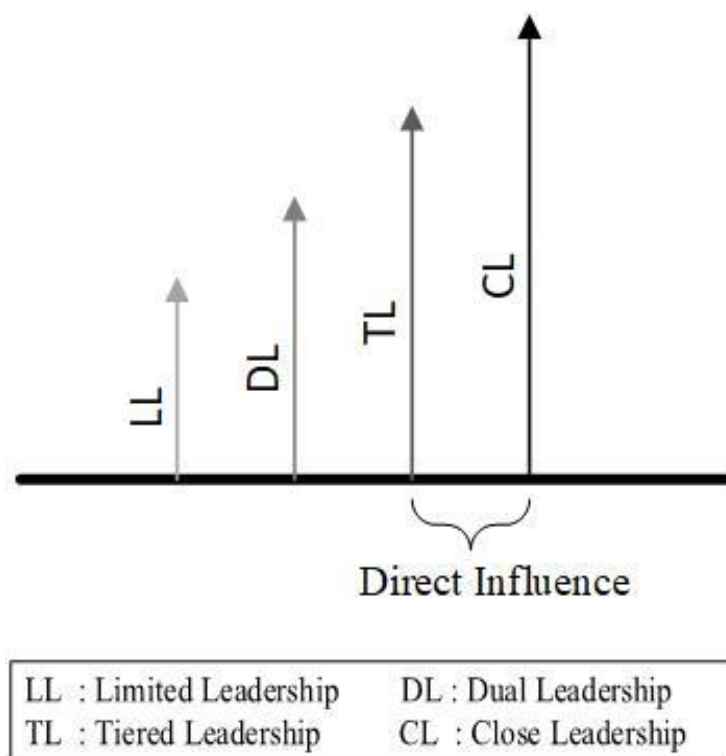
4.4.1 *Needs theory*

Abraham Maslow's needs theory classifies needs in a hierarchy of importance. Lower level needs the most basic of needs, and the upper level needs the ones harder to reach. As a result, lower needs should be satisfied before proceeding to upper level need. The needs are physiological, safety, social, esteem, and self-actualization needs;

- The leader projects transactional leadership (CR) when observing physiological needs by lobbying for site office expenses such as equipment, furniture, comfortable working site office setting, subscriptions and services for employees such as restrooms, cafeteria, and lounge area.

- The leader exercises transactional leadership (AM) when serving employee safety needs by assuring that site office professionals are provided with safety equipment and safe routes for moving on the site.

- The leader exercises transactional leadership (CR) when serving employee safety needs by assuring that health safety security and the environment team is properly implementing onsite safety procedures, are well-informed about their safety roles, and are properly trained for safety procedures.

- The leader projects transformational leadership (II) when observing social needs by giving subordinates opportunities to communicate with members from different disciplines thus creating links that allow a feeling belonging inside the network of the project. Also by inviting subordinates to participate in meetings and annual dinners.

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- The leader projects transformational leadership (IS) by observing esteem needs by providing new learning experiences such as training sessions and developing employee knowledge by sending them on training sessions for a new software or a skill relevant to the job. Also by sending subordinates to observe a methods of work on a similar projects.

- The leader projects transformational leadership (IS) by observing esteem needs in encouraging a team to set guidelines or brainstorm to solve a challenging task, such as the structural team solving implementing issues in a critical steel design of a tower envelope or finding the most efficient way in solving a foundation differential settlement issue. Also by encouraging risk taking and innovation and promising to avoid punishment in case of failure since not all innovative approaches lead to immediate or certain success. Allowing employees the opportunity to learn new skills to keep up with the fast developing industry by coordinating with human resources to send subordinates on training and workshops. Also by allocating interesting work by sending employees on workshops to learn about new systems, software, machinery, and connecting them with employees of different organization with similar interests.

Table 4.1 Needs theory of motivation served by transactional and transformational leadership

MOTIVATION THEORIES / LEADERSHIP STYLE		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Needs Theory	Physiological Needs	CR	PM providing for site office furniture HO providing monthly paycheck	DL	- - - - - - -	- - - - - - -	- - - -
	Safety Needs	CR	PM providing for onsite safety	CL	- - - - - - -	- - - - - - -	- - - -
		AM	PM implementing safety regulations	CL			
	Social Needs	- - - - - - -	- - - - - - -	- - - - - - -	I I	PM providing for social events such as a lunch for all project members on site as a project opening / Christmas dinner	CL
	Esteem Needs	- - - - - - -	- - - - - - -	- - - - - - -	IS	HO provides training and workshops to site office members PM sends employees to learn about an activity by sending them to a similar site PM brings over guests to perform workshops and training members PM could encourage innovation and risk taking to tackle a situation	DL
					IC	HO or PM could allow employees to schedule appointments with them to discuss any personal problem.	DL
	Self-Actualization Needs	- - - - - - -	- - - - - - -	- - - - - - -	IS	PM could challenge subordinates by allocating a relatively harder than usual task → success →self-actualization	TL

- The leader projects transformational leadership (IC) when observing esteem needs by guiding the subordinate, resolving or taking action regarding team concerns about for example an unproductive current method of work or unproductive individual on the team. Thus employees are allowed to schedule appointments with the leader to discuss any personal problem.

- The leader projects transformational leadership (IS) by observing self-actualization needs in challenging the employee to submitting a relatively hard or novel task within a short time duration. An example would be handing a design engineer the responsibility of a task which is usually handed for the level of a senior engineer.

4.4.2 *ERG theory*

The ERG theory (Existence, Relatedness, and Growth) builds upon Maslow's theory since existence needs combine both Maslow's physiological and safety needs. Relatedness needs combine both Maslow's social and esteem needs on an interpersonal level. Growth needs combine Maslow's esteem and self-actualization needs. Herzberg's ERG theory in contrast to Maslow's Needs theory does not contain the aspect of following any order in satisfying needs, any need could be satisfied at any time. In addition, an employee could choose to target any of the other needs if one is hard to be accomplished first.

Table 4.2 ERG theory of motivation served by transactional and transformational leadership

LEADERSHIP STYLE / MOTIVATION THEORIES		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
ERG Theory	Existence Needs	CR	PM and HO providing employees with reward equal to their amount of required efforts	DL	- - - - - - -	- - - - - - -	- - - -
		CR		CL			
		AM	Similar to serving for physiological and safety needs PM and HO	CL			
	Relatedness Needs	- - - - - - -	- - - - - - -	- - - - - - -	I I	Similar to serving for social and esteem needs	CL
					IS		DL
					IC		DL
	Growth Needs	- - - - - - -	- - - - - - -	- - - - - - -	IS	Similar to serving self-actualization needs	TL

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- The leader projects transactional leadership (CR) when observing existence needs by providing employees with reward equal to their amount of required efforts. This is similar to serving for physiological and safety needs

- The leader projects transformational leadership (II), (IC), and (IS) when observing relatedness needs. Similar to serving social and esteem needs.

- The leader projects transformational leadership (IS) when observing growth needs. Similar to serving self-actualization needs.

Table 4.3 Two factor theory of motivation served by transactional and transformational leadership

LEADERSHIP STYLE / MOTIVATION THEORIES		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Two Factor Theory	**Hygiene Factors** [Demotivators]	CR	Similar to serving for physiological, safety, and social needs	DL	I I	Similar to serving for social needs	CL
		CR		L			
		AM		L			
	Job Enrichment Factors [motivators]	- - - - - - -	- - - - - - -	- - - - - - -	I I	Similar to serving for relatedness needs	L
					IS		DL
					IC		DL
					IS	Similar to serving for growth needs	TL

4.4.3 *Two factor theory*

Mainly the dual factor theory or Herzberg's two factor theory differentiates between two main concepts: what motivates and demotivates an employee. This theory is also built on Maslow's needs theory where hygiene factors combine physiological, safety, and social needs; as for job enrichment factors or the motivators it combines the esteem and self-actualization needs. One factor that differentiates this theory from others is that certain factors are supposed to be present in the employment locale: hygiene factors such as work conditions, policies, job security, and style of supervision; otherwise the employee would be demotivated. Furthermore, in construction settings work conditions such as cooled and heated offices as well as helmets and safety parameters are hygiene factors that might not be considered as important in other domains of offices.

- The leader projects transactional leadership (CR) when observing hygiene factors by acknowledging that employees are demotivated when certain factors are not available at the workplace. Serving this factor is similar to serving for physiological, safety, and social needs.

- The leader projects transformational leadership style (II) when observing hygiene factors in a similar manner to serving for social needs.

- The leader projects transformational leadership (II), (IS), and (IC) when observing job enrichment factors (motivators) in a similar manner when serving relatedness needs and growth needs.

4.4.4 *Achievement motivation theory*

McClelland's achievement motivation theory revolves around the aspect of three needs: achievement, power motive and social affiliation needs. Achievement motive

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appears in individuals who set hard goals and are motivated by competition. Power motive need is expressed when one enjoys recognition. Power motive need is divided into three different levels. The first level is expressed by seeking power from supervisors and coworkers, second by assisting subordinates or coworkers, third to seek influencing others. Social affiliation need revolves around the idea of creating social circles similar to Maslow's social needs; furthermore, this need appears in individuals who favor collaboration over competition.

- The leader projects transactional leadership (AM) when observing achievement needs by measuring productivity of work by means of counting claims, variation orders, decisions, requests by the engineer, number of accidents, and the flow of negotiations between members.

- The leader projects transformational leadership (IC) when observing achievement needs by allowing the resident engineer to try and motivate labor force in the aim of reaching higher productivity which allows them to get back on schedule without the need to ask for extension of time from head office.

Table 4.4 Achievement motivation theory served by transactional and transformational leadership

LEADERSHIP STYLE / MOTIVATION THEORIES		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Achievement Motivation Theory	**Achievement Need**	AM	PM monitors productivity of work by measuring the number of claims, variation orders, or number of accidents on site.	CL	IC	PM provides the subordinate the chance for fulfilling achievement by allowing them to solve a problem before it is channeled to HO.	TL
					IS	PM lobbies for a subordinate due to excellence in performance providing him with an interesting vision for the future.	TL
	Power Motive Need	- - - - - - -	- - - - - - -	- - - - - - -	IC	PM and HO serve the subordinates need to "take power" by allowing them to seek guidance.	DL
		- - - - - - -	- - - - - - -	- - - - - - -	I I	PM and HO serve the subordinates need to "have power" by allowing for communication channels between coworkers → influence each other	CL
		- - - - - - -	- - - - - - -	- - - - - - -	IS	PM and HO serve the subordinates need to "give power" by allowing for satisfying self-actualization needs	TL
	Social Affiliation Need	- - - - - - -	- - - - - - -	- - - - - - -	I I	PM serves social needs	CL

- The leader projects transformational leadership (IS) when observing achievement needs of an individual by lobbying for a certain project manager due to his success on previous projects, and good reputation. Another example would be when a project manager lobbies for a specific contractor or senior engineer due to their exceptional performance and reputation on previous projects as a result providing him with an interesting vision for the future.

- The leader projects transformational leadership (IS) when observing power motive need by serving the subordinates need to "take power" and allowing them to seek guidance. Also, serving the subordinates need to "have power" by allowing for communication channels between coworkers as a result influencing each other. And serving the subordinates need to "give power" by allowing for satisfying self-actualization needs.

- The leader projects transformational leadership (II) when observing social affiliation need of a team in a similar manner to serving social needs.

Table 4.5 Equity theory of motivation served by transactional and transformational leadership

LEADERSHIP STYLE / MOTIVATION THEORIES		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Equity theory	Input	- - - - - - -	- - - - - - -	- - - - - - -	IC	PM and HO observe individual efforts of a subordinate who seeks to improve self-input.	TL
	Outcome	CR	HO and PM provide for fair distribution of rewards financial or nonfinancial	DL	IS	PM and HO recognize the members who put in more effort than others. Rewarding them with verbal appraise and giving them higher results on performance evaluation	DL

4.4.5 *Equity theory*

In the construction setting, equity theory is best understood when an imbalance in "outcome" such as inequity in payment scale, bonus amount, size of the office, or authority amount given to members of different hierarchal levels is unfairly distributed. If a design engineer has a larger well equipped office in comparison to a senior engineer member who is provided with a compact office, or even in recognizing the achievements of members who put in more effort compared to their coworkers by verbal appraisal from superiors or display better results on performance evaluation. Furthermore, inequity is also observed between members and teams of the same hierarchal level, compare "input" levels in reference to their coworkers. For example, in the construction setting inequity is observed in cases when a team of professionals of one department works double shifts on a project and compare the time they invested with other department who worked a normal day schedule and are rewarded with the same outcome.

- The leader projects transactional leadership (CR) when providing for outcome. Consequently, by providing pay rates for employees who give similar effort or type of work, as such a drafter in company A is paid a comparable rate to a drafter in company B. Also in the classification of paychecks for drafter, senior drafter, associate engineer, senior engineer, staff engineer, senior staff engineer. Also by providing employees with paychecks similar to other companies of the same domain. Similarly by providing senior engineer or senior project engineer with benefits that relate to their corresponding status as senior employees.

- The Leader projects transformational leadership (IC) when observing input by recognizing the employee. Such as the engineer who invests in themselves by pursuing a Master's degree.

- The Leader projects transformational leadership (IS) when observing input by recognizing the members who put in more effort than others, rewarding them with verbal appraise and giving them higher results on performance evaluation.

4.4.6 *Expectancy theory*

Equity and expectancy theory are similar in the part that is related to an individual's perception of believing that the effort performed will lead to desired outcome. Expectancy theory is described by three main points which are valence, expectancy, and instrumentality. Valence is an emotional force towards an outcome that could be positive or negative. A working mother might value day care provided by the company and she might not value or avoid travelling to work on an offshore project even for double the monthly wage. Expectancy is believing that increased effort will lead to increased performance. Expectancy also depends on the importance (valence) that one places on the effort, and if it one expects to be rewarded and valued by others.

- The leader projects transactional leadership (CR) when providing for extrinsic valence such as payment and promotions.

- The leader projects transactional leadership (CR) when providing for extrinsic instrumentality by making the company policy clear and transparent to employees.

- The leader projects transformational leadership (II) when observing intrinsic valence by giving value, praise and distinguishing subordinate effort.

- The leader projects transformational leadership (IS) when observing intrinsic instrumentality when offering challenging tasks, or giving the subordinate more authority in taking decisions.

Table 4.6 Expectancy theory theories of motivation served by transactional and transformational leadership

MOTIVATION THEORIES \ LEADERSHIP STYLE		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Expectancy Theory	Expectancy	- - - - - - -	- - - - - -	- - - - - -	- - - - - - -	- - - - - - - -	- - - - -
	Valence (positive or negative)	CR	HO serves valence when providing payment and promotions	DL	II	PM serves valence when offering value, praise and distinguishes subordinate effort.	TL
	Instrumentality	CR	HO serves instrumentality when providing for clear organizational rules.	LL	IS	PM serves instrumentality when offering challenging task, or giving the subordinate more authority in taking decisions	TL

4.4.7 *Goal setting theory*

Goal setting theory assumes that motivation comes from setting a hard or important goal. In addition, persistence and commitment to a goal are provided for by setting a time frame such as deadline for submission.

- The leader projects transactional leadership (AM) when providing for feedback moderator variables by checking that targets are met, informing employees if there are any changes in schedule, giving feedback on the method of the task performed.

- The leader projects transformational leadership (II) when observing commitment moderator variables by providing the subordinates with communication platforms to connect with leaders and superiors.

- The leader projects transformational leadership (IS) when observing commitment moderator variables by allocating the subordinate with training that is usually conducted by professionals.

- The leader projects transformational leadership (IM) when observing commitment moderator variables by lobbying for a subordinate on a new project.

- The leader projects transformational leadership (IS) when observing task complexity moderator variables by encouraging subordinates to discover appropriate strategies that allow them to tackle complex goals.

Table 4.7 Goal Setting theory of motivation served by transactional and transformational leadership

LEADERSHIP STYLE / MOTIVATION THEORIES		TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Goal Setting Theory	**Commitment**	- - - - - - -	- - - - - - -	- - - - - -	II	PM provides for commitment allowing a connection with subordinates and being a role model	TL
					IS	HO and PM provide for commitment by encouraging subordinates to attend training → self-efficient individual.	DL
					IM	PM provides for commitment by lobbying for a subordinate on a new project	CL
	Feedback	AM	PM provides for feedback by adjusting behavior or direction of effort	CL	- - - - - - -	- - - - - - -	- - - - - -
	Task Complexity	- - - - - - -	- - - - - - -	- - - - - -	IS	PM provides for Feedback when encouraging the subordinate to discover new methods for tackling a complex task	CL

4.4.8 *Reinforcement theory reasoning*

Reinforcement theory is one of many motivation theories that were built originally on the behavior modification of operant learning, and was later modified by Hammner in a manner that suits the organizational setting (Miner, 2015). The main idea behind this theory is either to reinforce desired behavior by positive reinforcement and avoidance learning, or to weaken the undesired behavior by extinction and punishment (Miner, 2015). Positive reinforcement determinants are advancement, praise, recognition and money. Avoidance learning is mostly used by supervisors to terminate expected undesired behavior, one examples in the work place is criticism (Miner, 2015). Furthermore, extinction is when supervisors put an end to any previously implemented positive reinforcement (Miner, 2015). Punishment is one form of negative reinforcement factor that could be seen in turnover of employees which results in firing or terminating an employee from the project.

- The leader projects transactional leadership (CR) when providing for positive reinforcement when giving promotions and financial rewards

- The leader projects transactional leadership (AM) when providing for avoidance learning by criticism of the work to end some undesired performance.

- The leader projects transactional leadership (CR) when providing for negative reinforcement by blocking the subordinate from a bonus or a raise.

- The leader projects transformational leadership (I.S.) when providing for self confidence of a subordinate by providing for the esteem and self-actualization needs.

Table 4.8 Reinforcement theory of motivation served by transactional and transformational leadership

MOTIVATION THEORIES	LEADERSHIP STYLE	TRANSACTIONAL			TRANSFORMATIONAL		
		Criterion	Reasoning	Extent	Criterion	Reasoning	Extent
Reinforcement Theory	**Positive Reinforcement**	CR	HO provides for Positive Reinforcement when giving promotions and financial rewards	LL	IS	Similar to serving for social and esteem needs and self-actualization	DL
							DL
							TL
	Avoidance learning	AM	PM provides for avoidance learning by criticism of work to end some undesired performance	TL	- - - - - - -	- - - - - - -	- - - - - - -
	Negative Reinforcement	CR	PM or HO provides for negative reinforcement when cutting the subordinate from a bonus or a raise	DL	- - - - - - -	- - - - - - -	- - - - - - -
	Punishment	PM	PM or HO provides for punishment when firing the subordinate	DL	- - - - - - -	- - - - - - -	- - - - - - -

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1   Summary of work

A literature review of articles associated to the topics of leadership and motivation provided several examples and case studies that considered the use of motivation and leadership theories in management practices in general and fewer that applied to construction project settings in particular. Also, articles about the construction team were reviewed to allow a precise construction setting model to be provided. Furthermore, articles and books were reviewed to allow choice of the appropriate motivation theories and to ensure that each of the theories has corresponding sub-dimensions either by surveys, questionnaires, or author detailed description which allowed us to relate them to examples in construction project settings.

The construction project remains to be a challenging and unique setting: it is a constantly adapting and changing environments, it includes individuals of multiple knowledge areas and participants from large construction companies (that provide the project with services, supplies, equipment, or human resources), it sees participants come and go during the time and length of involvement over the construction duration, and it is composed of head office departments which assign corresponding site office departments by means of contracts, procedures, rules and regulations for work conditions. Furthermore, participants are recruited by head office engineering functions on temporary bases with hiring and job conditions of positive and negative aspects that extrinsically and intrinsically motivate, promote or discourage construction professionals. In Figure 5.1, the flow of interactions shows that the organization also gives authority to the project

manager in deciding on amounts of bonus, promotions, and evaluation of project participants. Furthermore, participants provide skills and knowledge that they have gained during their career paths, they are assigned to different hierarchal levels depending on their experience, degrees of knowledge, and previous performance on other projects. The project manager's team is described as the "transmitter" of leadership and motivation to onsite project participants (the "receivers"). The team sets expectations of project success and locates future project candidates by inspecting performance reports. Also the project manager expects outcomes such as extra effort, effectiveness, and satisfaction from subordinates. Furthermore, the project manager considers a global vision to the project and sets milestones and goals. Moreover, participants that belong to site office departments mirror those of the head office departments and consequently they report to their respective head office department and onsite project manager's office.

A project manager's behavior involves organizing, procuring, directing, administering team building and deployment, is connected to both upper board of directors and site office subordinates, and includes management of activities and resources. In addition, the project manager's leadership role is of interest to us, since it is key in controlling the factors that drive employees' will to perform better in this constantly varying construction setting. Furthermore, the project manager may appear to be very distant to followers if he/she barely visits the project site, immersing themselves in high social positions by being connected with head office, client and project stakeholders, and if they infrequently establish contact with subordinates.

Figure 5.1 Flow of interaction between project setting participants
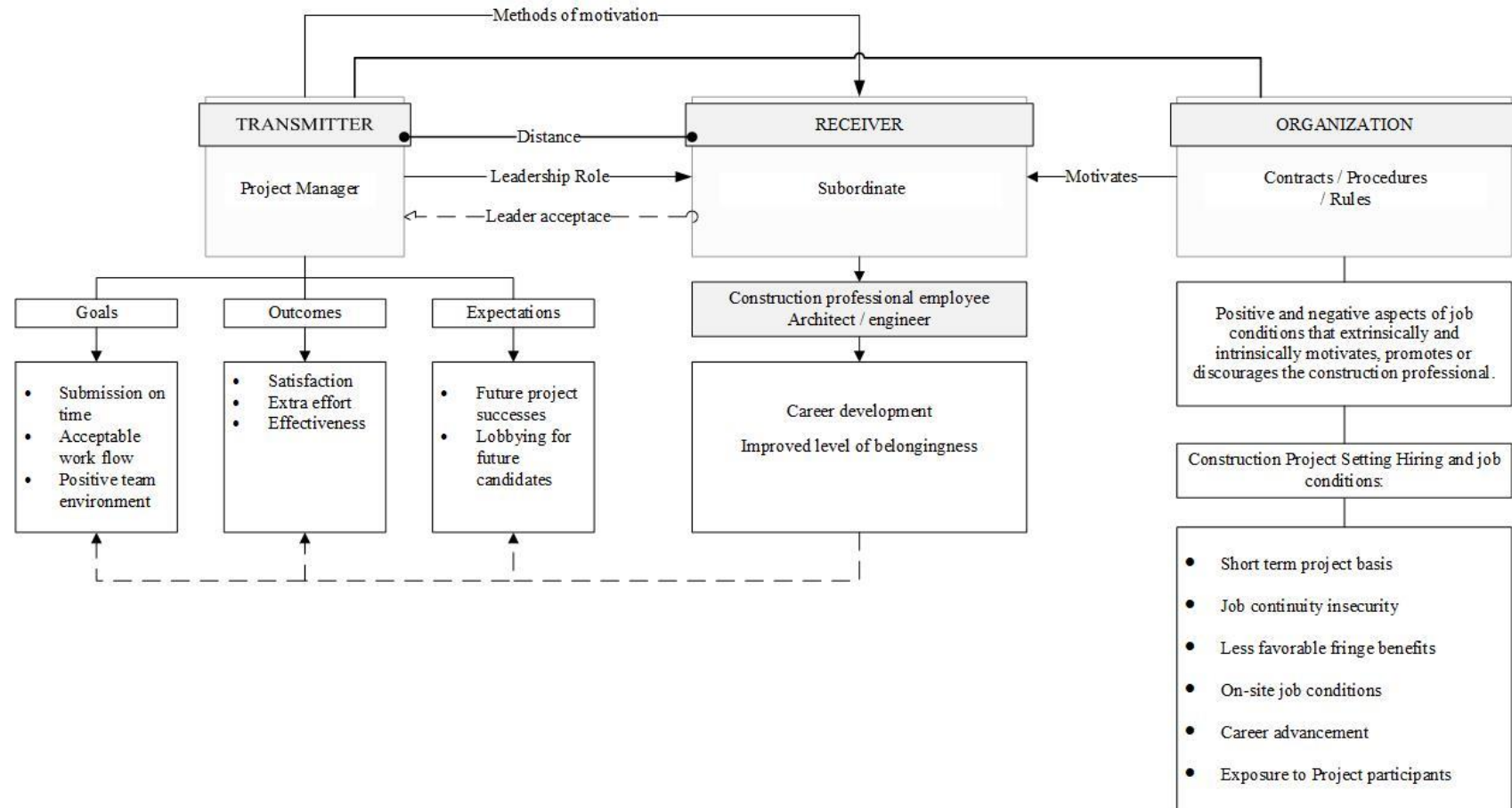
5.2   Conclusions

The application of the various theories of motivation to the construction setting has created a basis for the project manager to motivate the construction team. Some motivation theories have similar concepts but this does not dismiss their value to a project manager, since each theory considers a different perspective which might be more effective on one individual compared to another. In addition, leader follower distance, hierarchy, tiers, and the temporary project setting are all factors that affect the project manager's influence over the team.

Furthermore, motivated participants form the corner stones of all organizations (Anderfuhren-Biget et al., 2010), since work motivation drives individuals to fully invest in their own potential and reach efficient performance. Therefore by creating a matrix that scrutinized how transformational and transactional leadership styles serve work motivation of the construction team we set guidelines that assist the project manager on influencing subordinate motivation. Accordingly, by encouraging work motivation and directing employees into being effective on their jobs, the project manager could therefore expect to reach project goals and a better flow of project activities.

The results of this study show in Figure 5.2 for each motivation theory the number of instances that transactional or transformational leadership serves. Furthermore, Figure 5.3 shows that a project manager's transformational influence on the construction setting serves more than the transactional role, with proportions of 57% of the time transformational leadership serving motivation theories, and 43% of the time transactional leadership having a role.
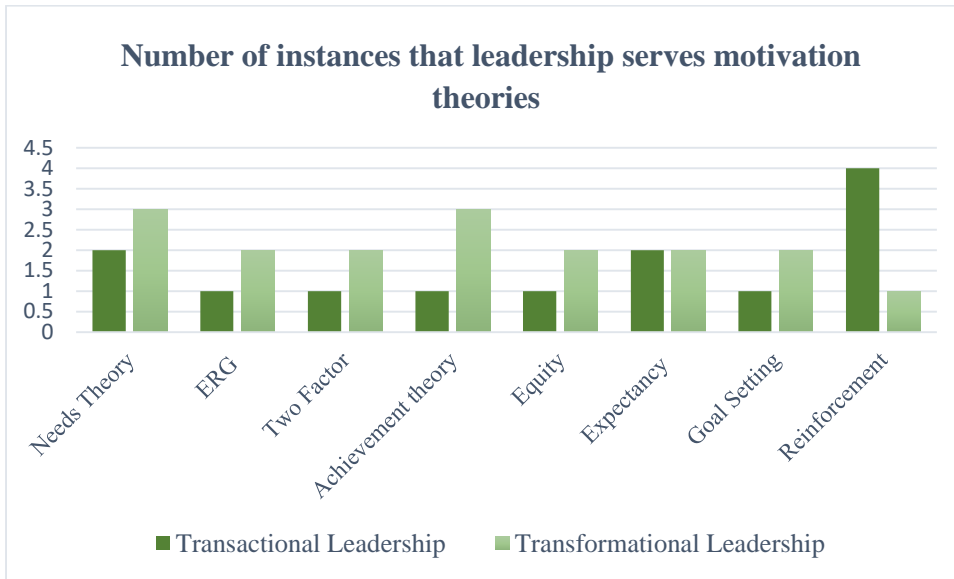
Figure 5.2 Number of instances that leadership serves motivation theories.
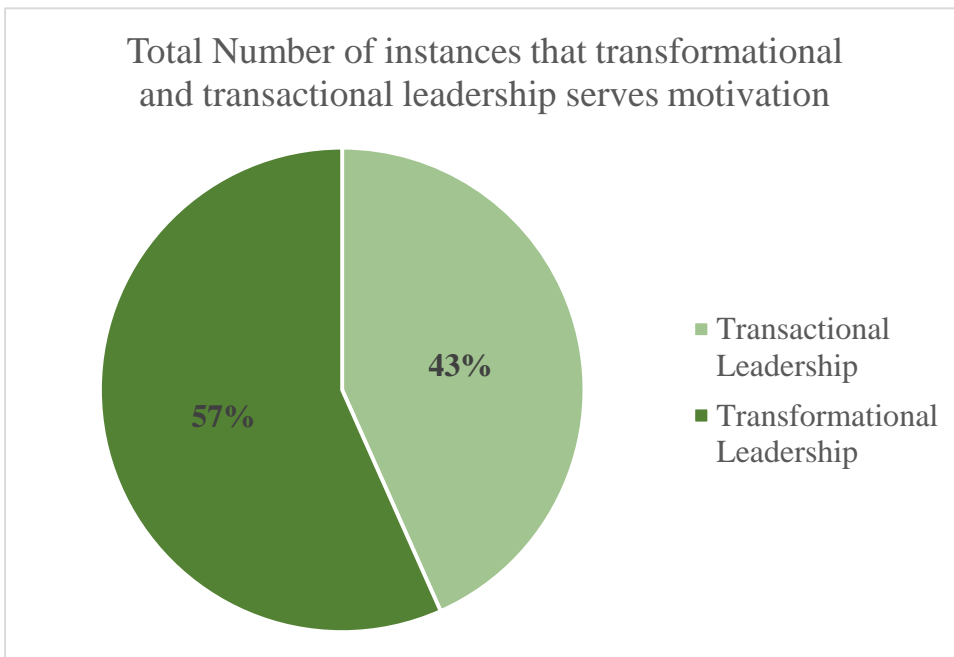

Figure 5.3 Total Number of instances that transformational and transactional leadership serves motivation theories.
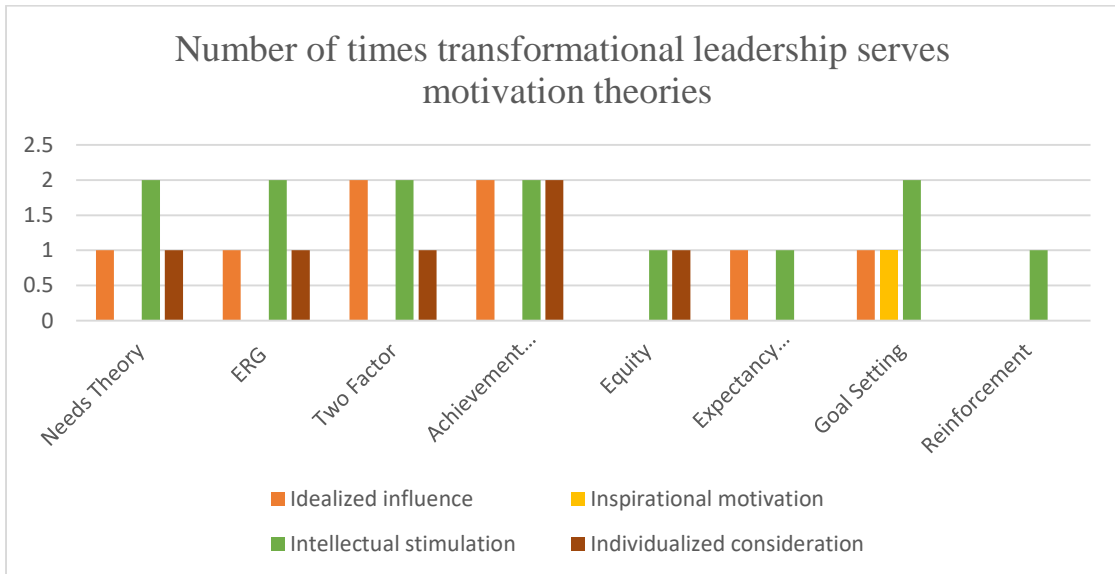
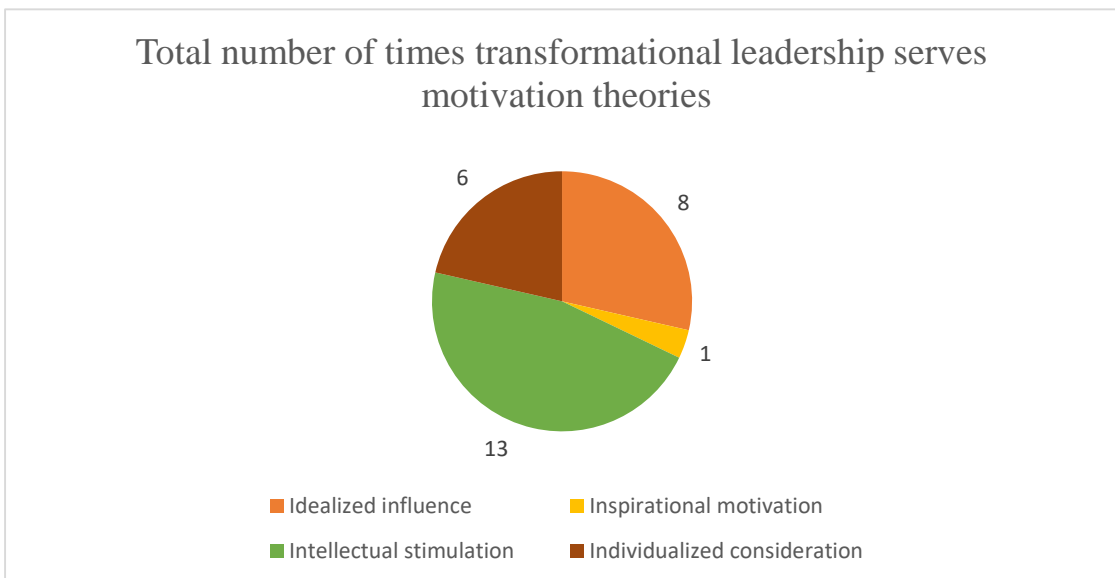**Figure 5.4** Number of times transformational leadership serves motivation theories.

Figure 5.5 Total number of times transformational leadership serves motivation theories.
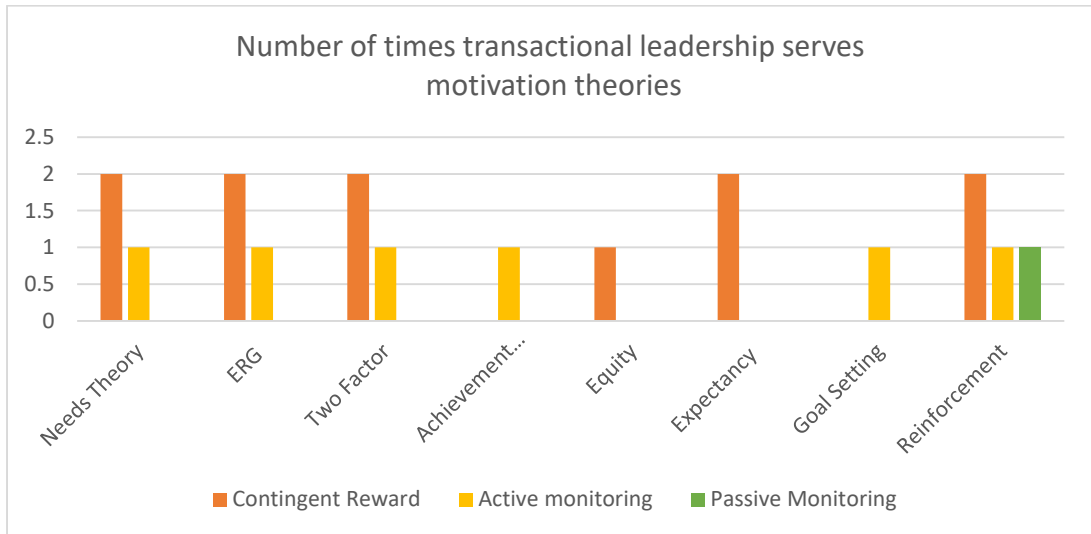
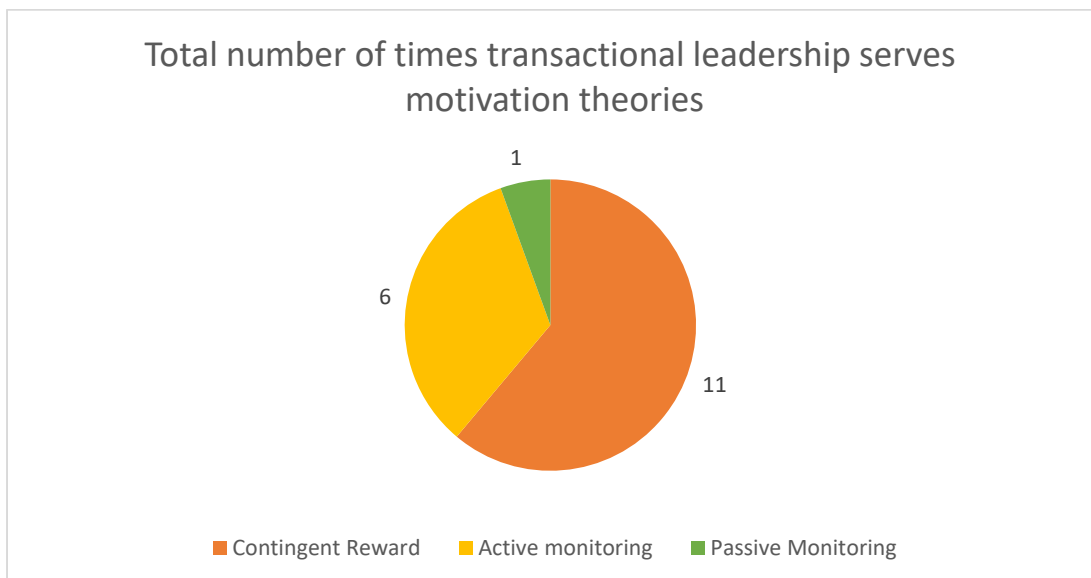**Figure 5.6** Number of times transactional leadership serves motivation theories.

Figure 5.7 Total number of times transactional leadership serves motivation theories.

5.3   Recommendations

The project manager should not hold on to applying one leadership style to construction settings, but consider the situation where transactional or transformational leaderships serves best. Furthermore, the most effective dimensions of transactional

leadership used by a project manager are shown to be contingent reward and active monitoring. As for the transformational leadership style, results in Figure 5.5 show the importance of exercising intellectual stimulation and idealized influence. Intellectual stimulation appears more than the rest of the characteristics, thirteen instances, which a leader could use to influence followers. Following intellectual stimulation, the sub characteristic idealized influence shows to be convenient eight out of twenty eight times.

5.4   Work significance and limitations

Of significance in this study is considering all relevant motivation theories in the context of construction settings, thus providing the project manager with a wider vision of methods and situations where motivation is applicable. Also transformational and transactional leadership styles have been explored and interconnected to motivation theories. This was done for the purpose of serving the construction site personnel's motives, in a way that improves their work efficiency and influences their career path development.

Construction settings are always subject to developments due to increasing complexities. To that extent this research calls for looking into updates in motivation and leadership theories that fit and reflect the current complexities of construction settings. Furthermore, one aspect of this study is about using theories, however real life situations may differ whereby some theories would be of more or less significance to the construction team. In addition, motivation theories might vary depending on the context or society that one is operating in, the social context is a limitation could be considered as an added variable to the construction setting model.

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5.5 Future work

Future work could include developing questionnaires by visiting the construction site office and interviewing main participants for the purpose of adding more observations. Furthermore, future work could include performing surveys that revolve around the concept of this study and validating results by sending them to project participants of the construction organization.

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. Appendix - McGregor's Theories X and Y A2 - Kitchin, Duncan. (2010). In *An Introduction to Organisational Behaviour for Managers and Engineers* (pp. 181-185). Oxford: Butterworth-Heinemann.

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