

THE IMPACT OF AUTHENTIC LEADERSHIP TRAITS
ON CONSTRUCTION SUPERINTENDENT
EFFECTIVENESS

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CHAPTER I

INTRODUCTION

Background

The construction industry in the United States is a mixture of successes that are a testament to human ingenuity and technical and moral failures. Lack of trust and lack of productivity are two areas in which the sector has faced and continues to face challenges.

As an industry, construction has suffered a lack of trust from the public for decades. In a survey by the Construction Management Association of America (Doran, 2004), 63% of respondents answered affirmatively when asked if the construction industry is tainted by prevalent acts that are considered unethical. Most owners of residential construction projects lack the specialized knowledge to be sophisticated consumers and the result has been an imbalance in contracting relationships that foster distrust. Additionally, public projects that run over time and over budget as well as high-profile stories of dishonest commercial contractors damage the reputation of the industry. Internal industry practices such as bid shopping and falsification of costs or time expenditures have harmed trust between industry players. The simple nature of traditional low-bid contracting is adversarial and given to mistrust. Construction activities are also inherently full of risk as each project is essentially the production of a prototype. The uncertainties from the design and execution of a construction project are therefore

numerous and the risks high (Jin & Doloi, 2009). Because of the complexity of construction projects and the openness with which stakeholders must communicate, trust is an essential attribute of stakeholder relationships within these projects (Guerriero et al., 2010). As Lau and Rowlinson (2011) say:

Complex construction projects are exposed to uncertainty and high risk, and coupled with the problems of imperfect information, the project environment may easily become a breeding ground for adversarial relationships and defensive behaviour. Since people are the host to minimize these negative effects, managing differences in people seems to be one critical task. We need to trust because there are circumstances of no choice and no knowledge, and this is a risk-taking process (p. 633).

New contract structuring such as Construction Manager at Risk reduce the adversarial nature of the traditional fixed price model of construction contracts. A contract type used internationally named Alliance contracting is explicit that trust is central to the contracting process. As one colleague explained “Alliance contracting operates on the principle that in order to accomplish a project all parties *must* trust each other whereas a low-bid model operates on the premise that all parties cannot trust each other.” Such moves toward trust based contracts are resulting in more open and collaborative relationships and a restoration of trust to the industry. However, due to the higher degree of transparency afforded in the new contract structures, it is more important than ever that construction superintendents demonstrate good communication and integrity. As consumers come to expect better customer service from the industry, the stereotypical image of the cigar chewing, short tempered, foul mouthed construction superintendent is fast becoming unacceptable. The new model of a construction superintendent will need to demonstrate not only management skills but also are “not self-centered and project stereotypes; rather, they are motivated by the well-being of their

subordinates, other colleagues, their organization, and society at large” (Toor & Ofori, 2008, p. 624).

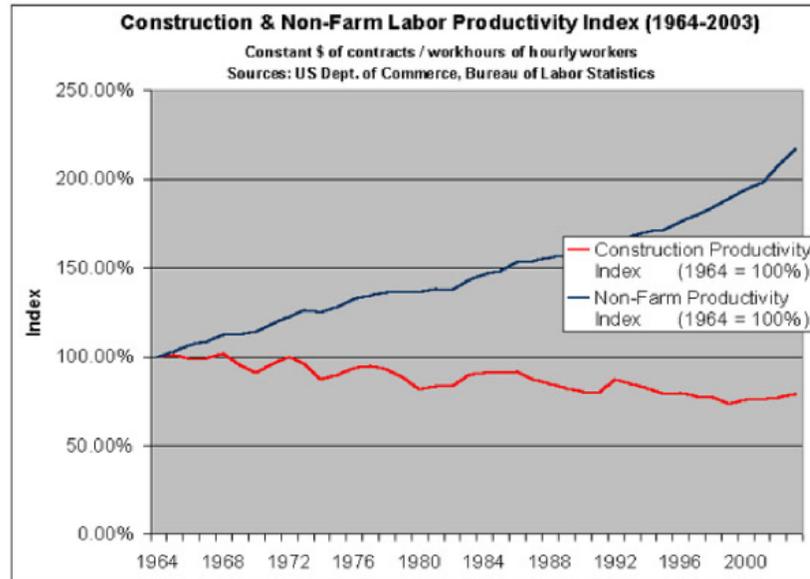


Figure 1. Sector Productivity Index (Teicholz, 2004)

Another failing of the construction industry has been the ability of the sector to increase productivity. As Figure 1 shows, not only has the construction industry failed to make gains in productivity as all other non-farm sectors have, but productivity has actually decreased over the last four decades. Such shocking data immediately prompts the reader to begin trying to reconcile the seemingly unbelievable claim with their observation that the world around them is seeing productivity grow exponentially. Attempts at this reconciliation begin with proposing simple explanations but these attempts will prove unsatisfactory.

The manufacturing sector lends itself most readily to comparison with the construction sector because both produce a tangible product in highly technical fields. When the two industries are compared, some potential explanations for such a trend can be disproven. The first possible explanation for the lack of productivity gains could be the presence of strong unions in the industry limiting gains in personnel productivity, however the manufacturing sector has made gains in spite of union influence. Another possible explanation is the ability of the manufacturing sector to create factories in which they control the environment and a repetitive process that allows perfection of the assembly. This most likely represents a true difference in the industries and may mean that construction will never surpass the productivity of the manufacturing sector but with more sophisticated project delivery systems that include off site assembly manufacturing, identification of design clashes preconstruction with BIM, and prefabrication capabilities, manufacturing's environmental control and process repetition cannot account for the huge disparity between the productivity of the two sectors. The next obvious explanation is that there are physical limits to human productivity and most construction tasks do not lend themselves to automation. Also the ability to move large components in three dimensional space on a construction site has many constraints that are not easily removed. Again these points are valid and will certainly continue to offer challenges but with the advent of better tools and equipment, better training, more sophisticated scheduling and project delivery systems, and more efficient site management and logistics these considerations could not have caused productivity to stagnate nor decrease. Lastly, constructing in a more regulated environment requiring more documentation,

safety meetings and inspections adds bottlenecks but their effects on productivity are easily mitigated by proper planning.

Authentic Leadership

The question then remains why the construction industry, despite great advances in technology and sophistication in every area of activity, has lost productivity over the last four decades. In the literature, construction superintendents are seen as a primary contributor to poor construction productivity (Sanvido, 1988). Particularly the impact of any superintendent with poor ability to plan, schedule and direct the work will harm labor productivity (Olson 1982). An older study by the Department of Energy (Borcherding et al., 1980; Borcherding and Garner, 1981) determined that the factors most impactful to poor productivity on construction sites were as follows: 1) material availability, 2) tool availability, 3) work redone, 4) overcrowded work area, 5) inspection delays, 6) foreman incompetence, 7) crew interference, 8) craft turnover and absenteeism, and 9) foreman changes. Another more recent study done by Rojas and Aramvareekul (2003) reported survey results that management systems and strategies had the greatest impact of any factor on labor productivity. A study by Liberda et al. (2003) focused on 51 productivity factors within the categories of labor, management, and external factors. Management factors, such as lack of detail planning and information and inadequate supervision accounted for half of the 15 most critical factors. Dai et al. (2009) surveyed craftsmen and determined the top 10 most significant productivity factors on construction projects as shown in Table 1.

Table 1. 10 Most significant Productivity Factors (Dai et al., 2009).

Issue	Normalized Severity Score
I have to wait for people and/or equipment to move the material I need.	100.0
There are errors in the drawings I use.	91.7
When there is a question or problem with a drawing, the engineers are slow to address the issue.	89.9
If I need a manlift to do my job, there are not any available.	84.3
When I need a crane or forklift to help me, there are not any available.	83.6
I can't get the consumables I need to do my job.	82.2
I have to search in a lot of places to get the tools I need to do my job.	78.4
When I go to install prefabricated items, work has to be done on them to fix quality problems.	75.2
I cannot get the power tools from the contractor that I need to do my job.	74.7
My supervisor does not provide me with enough information to do my job.	72.0

A trend is seen throughout these studies that site managers have a huge impact on the productivity of the labor on site and the project as a whole. With new contracting procedures, more complex projects and demand for better productivity, construction superintendents are in need of new skills that will equip them to lead in this high-stakes environment if productivity is to increase.

This author proposes that the root cause of both the productivity struggles and ethical problems in the industry is a lack of leadership from construction superintendents to bring all of the discussed advances together into a unified whole. Certainly the technical skills, training and quality of the construction superintendent have increased

during this time period. In fact the industry almost unanimously requires a bachelor's degree for new superintendents, a degree which didn't exist 40 years ago. The breakdown in harnessing advances in technology and personnel to increase productivity stems from a lack of sustainable leadership through all levels of construction management. Additionally, this lack of leadership contributes greatly to the protracted struggle to improve the public trust and respect of the construction industry.

Toor and Ofori (2008) state that “educational institutions and construction firms continue to produce managers who lack leadership skills. This is due to the traditional academic curricula which do not cover the development of individuals as leader, the conventional transactional mentality and task-orientation of industry professionals” (p. 620). Furthermore, Toor and Ofori attribute the lack of leadership to managers whose:

Day-to-day work involves management of activities and achievement of the short-term goals of the project such as conforming to budget, schedule, and quality. They are focused on the end goals and not the means to achieve the results. This mindset of construction project management makes the managers more production oriented rather than relationship oriented. They mostly end up managing their teams and day-to-day work rather than leading people to achieve long-term objectives (p. 620).

Schwalbe (2006) defines a leader as someone who is focused on long-term goals and inspiring people to meet those goals whereas a manager focuses on the day-to-day details of meeting specific goals. In other words “you lead people, you manage things” (Schwalbe, 2006, p. 24). The lack of leadership in the construction industry has actually been referred to as a “leadership crisis” (Toor, 2006). In order to rectify this “crisis” and to accelerate changing the negative industry trends seen above, “the construction industry needs to concentrate in developing a new breed of future project leaders through authentic leadership development” (Toor & Ofori, 2008, p. 621).

In essence authentic leaders understand their purpose, practice solid values, lead with heart, establish connected relationships, and demonstrate high levels of self-discipline (George 2004). Authentic leaders will demonstrate characteristics of confidence, hopefulness, optimism, resilience, transparency, ethics, future orientation and associate building (investing in others). (Toor & Ofori, 2008). In “high-trust” contracting methods such as Alliances, authentic leaders are particularly well-suited to lead as they are collaborative, demonstrate attributes that build trust and encourage communication and dialogue and facilitate team building and commitment (Lloyd-Walker & Walker, 2011).

This study attempts to explore the relationship between authentic leadership traits in construction superintendents and their effectiveness managing construction projects.

Problem Statement

A study by Rosenthal et al. (2007) that compiled data for the National Leadership Index saw 77% of study participants agreeing or strongly agreeing that there was a crisis of confidence in American leaders. The 2009 version of this National Leadership Index (Rosenthal et al., 2009) found 63% of respondents do not trust what business leaders say and 83% of respondents believe that business leaders primarily work to benefit themselves or a small group of people’s interests. The construction industry is not immune to these ill-perceptions of business leaders and is currently facing challenging new socio-economic, business, cultural and political environments (Toor & Ofori, 2008). Construction superintendents typically focus on managing tasks day-to-day and not on leading their people toward long-term objectives (Toor & Ofori, 2008). In others words

construction superintendents focus more on the ends than the means. The new challenges in construction project complexity, more strict environmental regulations, safety issues, and legal matters necessitate that the means require more attention from superintendents than ever before. To achieve these goals, Toor and Ofori (2008) argue “that the construction industry needs to concentrate on developing a new breed of future project leaders through authentic leadership development” (p. 621). The expectation is that authentic leaders will bring the necessary skills to construction projects to counteract the traditional construction superintendent, who operates based on power, authority, and task-orientation.

Proposed benefits of applying authentic leadership to individual construction projects are numerous, but one benefit to a company that is crucial to *program* management is the “sharing and retention of knowledge, ethical behavior that supports future and not only immediate success, and accordingly contributes to organizational sustainability” (Lloyd-Walker & Walker, 2011, p. 385).

The first step in moving the construction industry towards a model of authentic leadership is to demonstrate empirically that as authentic leaders serving as construction superintendents focus on the means of a project, they will benefit the bottom line of companies by delivering projects on time, on budget and with greater customer satisfaction than their non-authentic leader peers. Research demonstrating higher performance of projects led by individuals with higher authentic leadership attributes are needed to convince the industry of the merits of authentic leadership. This study attempts to do that.

Purpose of the Study

The purpose of this study is to determine if a correlation can be demonstrated between authentic leadership traits in a superintendent and effectiveness of that superintendent in delivering construction projects on budget, on time and with high customer satisfaction. A lack of research on this topic prompted the inquiry. Development of the construct of authentic leadership (AL) is mature enough to have produced two validated instruments for measurement of AL. However, there is limited empirical research that can verify the beneficial effects of authentic leadership that are claimed in the literature (Gardner et al., 2011). While Toor and Ofori (2009) used the Authenticity Inventory to operationalize authentic leadership in the construction industry, application of the Authentic Leadership Questionnaire (ALQ) instrument has not been used in the construction industry according to the literature. This study, therefore, presents the first attempt at directly measuring the effect of authentic leadership on the construction industry.

This study investigates the following research objectives:

Research Objective 1: Determine if there is a correlation between authentic leadership attributes in a construction superintendent and that superintendents effectiveness at delivering projects on time, on budget and with high customer satisfaction.

Research Objective 2: Investigate consistency of scores on the authentic leadership Questionnaire when answered by self verses when answered by a peer.

Significance of the Study

Authentic leadership has been championed by practitioners as an effective means to achieve great results in organizations (George, 2003). However, within the scholarly literature, most attention has been paid to developing the construct and a validated instrument. The research agenda has become stalled by conflicting definitions and instruments and entangled in theoretical discussions. Empirical evidence that authentic leadership is effective in the real world is needed and may help balance the body of literature that has mostly been conceptual.

In the construction industry, authentic leadership has been discussed in a few papers at most (Toor & Ofori, 2008; Toor & Ofori, 2009). Those papers have done an excellent job in making a case that authentic leadership could provide excellent benefits to the industry and also that there needs to be empirical studies done that look at authentic leadership in real world settings. Leadership studies within the construction industry have been scarce until recently as Toor and Ofori (2008) report from a 2007 study in which they reviewed the literature and found that of the 44 papers on this topic, half were published in the decade preceding the paper. This lack of research on leadership in the construction industry is attributed to social scientists not understanding the construction industry and construction participants not understanding the social sciences (Langford et al., 1995). This paper seeks to meet these needs by furthering the discussion of authentic leadership as a needed component in the construction industry, bridging the divide between construction and social science, and by providing a first attempt at quantifying the benefit of authentic leadership in the construction sector.

CHAPTER II

REVIEW OF LITERATURE AND DEVELOPMENT OF HYPOTHESES

Review of Literature

Leadership

In order to understand the development of authentic leadership as a construct it is helpful to understand how the study of leadership in general has developed over the last several decades. Leadership is a challenging topic of study due to the complex nature of the concept and near impossibility of studying it in a clinical setting. Prior to the late 1970s leadership research had produced little useful output despite numerous research efforts. The legitimacy of the topic of leadership as a scholarly study was even questioned by scholars (Klenke, 2007). Until that time, leadership in the workplace was largely focused on a transactional model. Since the Industrial Revolution, the workforce was largely composed of individuals performing repetitive tasks. Such work lends itself to transactional leadership since that style utilizes exchanges of tangible rewards for work and loyalty. As will be discussed later in this review of literature, tangible rewards are uses of extrinsic motivation which has been shown to work well in motivating people to perform routine tasks such as assembly line work. This lack of viable leadership research shifted in the mid 1980's as a new leadership model arrived on the research scene. Lloyd-Walker and Walker (2011) propose that leadership can be divided into one of three

categories: non-leadership (hands-off approach), transactional leadership (give and take between leaders and followers), and transformational (leader attains organization's goals by inspiring followers). Transformational (TF) leadership styles are what came on the scene in the 1980's as a new area of study and brought fresh researchers to the field of leadership theory. While transactional leadership theory is rather direct, focusing on rewards and punishment, transformational leadership theory involves deeper philosophical undertones that attract a wider field of researchers. With these new researchers and research efforts came a focus on empirically based, rigorous theory development (Conger, 1999; Hunt, 1999) that afforded leadership research the scientific legitimacy needed. Since that time numerous transformational leadership theories have been proposed and studied including the closely related concepts of servant leadership (e.g., Greenleaf, 1977) which prioritizes the needs of followers and results in leaders de-emphasizing their own glory and demonstrating high moral standards, and authentic leadership (Avolio et al., 2004). Transformational leaders engage followers and energize employees by appealing to higher ordeals and morals. Transformational leaders offer purpose by communicating the significance of the work at hand. Such leaders also offer encouragement to place the good of the team as paramount. One of the main functions of a transformational leader is to offer hope and optimism to their followers. As Ralph Waldo Emerson says "Nothing great was ever achieved without enthusiasm," and transformational leaders realize this. Transformational leadership appeals to intrinsic motivators in followers which will be discussed below and has been proven to be the best motivational style for individuals tasked with creative problem solving. All transformational leadership styles are considered to be positive forms of leadership which

use rewards, education, incentives and encouragement to lead as compared to negative leadership styles which utilize penalties with greater frequency.

Transactional leadership may still be appropriate for highly operationalized environments but is not suitable for knowledge-workers (Lloyd-Walker & Walker, 2011). Transformational leadership became the preferred theory for knowledge workers toward the end of the 20th century as the workforce shifted toward knowledge workers who needed to come up with creative solutions to complex problems. Authentic leadership grew out of attempts to add an ethical component to transformational leadership at the start of the 21st century. Although the majority of transformational leadership theories were antecedent to the development of authentic leadership, authentic leadership is considered by some to be the root construct of these other theories of leadership (Avolio & Gardner, 2005). As George et al. (2007) explains, there is an inherent difficulty in defining any leadership style because a specific trait-like definition is not flexible enough to encompass all situations. George goes on to say that if there was one specific “cookie-cutter leadership style, individuals...would make themselves into personae, not people, and others would see through them immediately” (p. 1). In other words, if there was a formula that people could follow to lead others, it would remove the authenticity of their leadership which many authors believe is so crucial to leading effectively.

Authentic Leadership

Authentic leadership sounds straight-forward when first hearing the term but it is a carefully defined and loaded construct that is more than just the sum of the words. Walumba et al. (2008) attribute the concept of “authenticity” to the ancient Greeks and

their admonition to “be true to oneself.” Kernis and Goldman (2006) performed a review of literature on the concept of authenticity and link the modern development of the idea to the philosophical works of Sartre and Heidegger. They found four themes of authenticity in the literature which were “authentic functioning of people’s (1) self-understanding, (2) openness to objectively recognizing their ontological realities (e.g., evaluating their desirable and undesirable self-aspects), (3) actions, and (4) orientation towards interpersonal relationships” (p. 284). To a large degree authenticity in its modern philosophical form can be explained to entail intellectual honesty about oneself and the world around them. A person who is able to receive constructive criticism about themselves is an example of someone demonstrating such attributes. It is challenging to be transparent in personal relationships for the same reason it is difficult not to be defensive when confronted with corrections from a boss, vulnerability is challenging and intellectual honesty is paramount to such skills. The term “authentic” appears in the field of positive psychology as well (Seligman, 2002) and can be defined as “owning one’s personal experiences, be they thoughts, emotions, needs, preferences, or beliefs, processes captured by the injunction to know oneself” and “behaving in accordance with the true self” (Harter, 2002, p. 382). There is an emphasis on integrity in these definitions which can be understood best by recognizing that the root of the word “integrity” stems from *integer* and implies an inner “wholeness” as one’s inner world and outer world are consistent. This is partly where authentic leadership is able to provide an emphasis on ethics since honesty, truthfulness and accuracy are so crucial to the concept of authenticity.

According to Avolio and Gardner (2005), authenticity as a component of leadership theory was first studied by investigating *inauthenticity* in educational leadership. These studies included Seeman (1960), Brumbaugh (1971) and Henderson and Hoy (1983). Ford and Harding, (2011) trace the first use of the unified term “authentic leader” to Bass in his 1999 paper on transformational leadership (Bass & Steidlmeier, 1999). In Bass’ paper he was responding to critiques that a leader might appear to be transformational due to their use of charisma but might in fact be narcissistic in their intentions. Bass labeled such a person as pseudo-transformational stating that “self-aggrandising, fantasizing, pseudo-transformational leaders can be branded as immoral. But *authentic leaders*, as moral agents, expand the domain of effective freedom, the horizon of conscience and the scope for altruistic intention” (p. 211). The first use of the term “authentic leadership” that could be located in the current review of literature was in a 2001 paper by Begley which states “Authentic leadership may be thought of as a metaphor for professionally effective, ethically sound and consciously reflective practices in educational administration. This is leadership that is knowledge based, values informed and skillfully executed” (p. 353).

It wasn’t until practitioner Bill George wrote about authentic leadership in his 2003 book entitled *Authentic Leadership: Rediscovering the Secrets to Creating Lasting Value* that authentic leadership found the level of attention that is seen today. Bill George, former CEO of Medtronic, argued the need for a new type of leader to bring effective as well as ethical leadership to companies in wake of the corporate scandals of the 2000’s. George argued that authentic leaders, not new regulations or laws, were needed to guide us in the new business climate as he states “we need leaders who lead

with purpose, values, and integrity; leaders who build enduring organizations, motivate their employees to provide superior customer service, and create long-term value for shareholders” (p. 9). George defined authentic leadership not as a scholarly construct but from a practitioner’s point of view by describing it as:

Authentic leader’s use their natural abilities, but they also recognize their shortcomings, and work hard to overcome them. They lead with purpose, meaning and values. They build enduring relationships with people. Others follow them because they know where they stand. They are consistent and self-disciplined. When their principles are tested, they refuse to compromise (p. 12).

Scholarly papers on studies of authentic leadership as a unique construct began to be published in 2003 (Luthans & Avolio) and focused on the positive aspect of authenticity as a component of leadership instead of inauthenticity like the earlier studies on the topic. Luthans and Avolio defined authentic leadership in this first attempt as:

A process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering positive self-development. The authentic leader is confident, hopeful, optimistic, resilient, transparent, moral/ethical, future-oriented, and gives priority to developing associates into leaders themselves (p. 243).

By 2004 the first Gallup Leadership Institute Summit had convened with the purpose of promoting “dialogue among scholars and practitioners from diverse domains with leaders from the business, political, educational, and military arenas to stimulate original insights and basic theory regarding the emergence and development of authentic leadership and followership” (Avolio & Gardner, 2005, p. 316). Any emerging construct that needs to be quantifiable and qualitative to research faces multiple and often divergent attempts to standardize the definition (Cooper et al., 2005). In order to keep development of the authentic leadership construct from fracturing into different camps, a study the year after the inaugural conference on authentic leadership by Gardner et al. (2005) sought to develop a definition that was a combination of all existing attempts. Their definition is

based on self-awareness and self-regulation and focused on the factors of the authentic self-regulation process that is considered unique to authentic leadership. These factors included internalized regulation, balanced processing of information, relational transparency, and authentic behavior. Similar to the Ilies et al. (2005) model, the Gardner et al. model is influenced heavily by Kernis's (2003) conception of authenticity, as well as self-determination theory espoused by Deci and Ryan (2000). In addition, Avolio and Gardner (2005), Luthans and Avolio (2003), and May et al. (2003) have argued that authentic leadership includes a positive moral perspective characterized by high ethical standards that guide decision making and behavior. By 2008 these efforts had produced a validated instrument for measuring authentic leadership attributes in an individual to serve as the first alternative to Kernis and Goldman's (2005) Authenticity Inventory which only measured an individual's authenticity, not leadership.

Despite the aforementioned attempts to consolidate definitions of authentic leadership as a construct while in its infancy, authentic leadership has seen multiple definitions emerge over the last half-decade (Cooper et al., 2005). Walumba et al. (2008) defines it as "a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information and relational transparency on the part of leaders working with followers, fostering positive self-development" (p. 94). Shamir and Eilam (2005) proposed a life stories approach to the definition development and described authentic leaders as people who have the following attributes: "The role of the leader is a central component of their self-concept", "They have achieved a high level of self-resolution or self-concept clarity", "Their goals are

self-concordant”, and “Their behavior is self-expressive” (p. 398). Their definition focuses primarily on the leader not being “fake” but leaves out a concept of morality which is present in all other definitions. In the most recent definition attempt found in the literature, Whitehead (2009) defines an authentic leader as “one who: (1) is self-aware, humble, always seeking improvement, aware of those being led and looks out for the welfare of others; (2) fosters high degrees of trust by building an ethical and moral framework; and (3) is committed to organizational success within the construct of social values” (p. 850).

For this study, because the Authentic Leadership Questionnaire (ALQ) instrument is being used, the definition of authentic leadership that will be used is the one that was integral to the development of the instrument. Drawing on the Michael Kernis’s (2003) concept of authenticity, Ilies et al. (2005) developed an authentic leadership model that focused on four components of the larger construct, namely self-awareness, unbiased processing, authentic behavior/acting, and authentic relational orientation. These four factors and their definitions are shown in Table 2.

Table 2. Authentic Leadership Factors from Ilies et al. (2005).

Factor	Definition
Self-awareness	“One’s awareness of, and trust in, one’s own personal characteristics, values, motives, feelings and cognitions” (p. 377).
Unbiased Processing	“Not denying, distorting, exaggerating or ignoring private knowledge, internal experiences, and externally based evaluative information” (p. 378).
Authentic Behavior/Acting	“Whether people act in accord with their true self as opposed to acting merely to please others or to attain rewards or avoid punishments through acting falsely” (p. 380).
Authentic Relational Orientation	“An active process of self-disclosure and the development of mutual intimacy and trust so that intimates will see one’s true self-aspects, both good and bad” (p. 390).

Walumba et al. (2008) relied on the above works to develop their Authentic Leadership Questionnaire which bases their higher order, multi-dimensional authentic leadership construct on the four factors shown in Table 3.

Table 3. Authentic Leadership Factors from Walumba et al. (2008).

Factor	Definition
Self-awareness	“An understanding of how one derives and makes meaning of the world and how that meaning-making process impacts the way one views himself or herself over time. It also refers to showing an understanding of one’s strengths and weaknesses and the multifaceted nature of the self, which includes gaining insight into the self through exposure to others, and being cognizant of one’s impact on other people” (p. 95).
Balanced Processing	“Showing that they objectively analyze all relevant data before coming to a decision. Such people also solicit views that challenge their deeply held positions” (p. 95).
Internalized Moral Perspective	“Refers to an internalized and integrated form of self-regulation. The sort of self-regulation is guided by internal moral standards and values versus group, organizational, and societal pressures, and it results in expressed decision making and behavior that is consistent with these internalized values” (p. 95).
Relational Transparency	“Presenting one’s authentic self (as opposed to fake or distorted self) to others. Such behavior promotes trust through disclosures that involve openly sharing information and expressions of one’s true thoughts and feelings while trying to minimize displays of inappropriate emotions” (p. 95).

Table 3 contains the working definitions of authentic leadership for this study in order to keep the concepts consistent between the instrument and discussion. In 2011, another instrument to measure authentic leadership attributes, the Authentic Leadership

Inventory (ALI), was developed by Neider and Schriesheim. It began as a 16 item Likert-scale type survey and was cut down to 14 items. It may be a great compliment to the ALQ once it has been validated, but was not selected for this study based upon the limited amount of use that exists in literature.

Authentic Leadership in Practice

Apart from the exact definition that is given to authentic leadership, the mechanisms by which authentic leaders contribute value to their organization and the benefits that may be seen in followers of authentic leaders are important to understand. Several of these will be discussed and the mediating processes involved will be included.

In development of the authentic leadership construct, Luthans (2002) relied heavily on the theory of Positive Organization Behavior (POB) which they define as “the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement” (p. 59). It was in this paper that Luthans identified the POB states of confidence, hope, optimism and resilience that would later form the basis of the psychological capital construct which would come to be integral to the authentic leadership model. In essence, authentic leaders promote POB among followers by improving their psychological capital which will be discussed below. Furthering this concept of POB which is applied at the individual follower level, Walumba et al. (2011b) expanded these benefits of authentic leadership to the organization as a whole through Organizational Citizenship Behavior (OCB). OCB refers to increased Psychological Capital (PsyCap) of the *group* and a resultant aggregate benefit supplied by discretionary

behaviors by members of the group that are beyond their job requirements. In other words, authentic leaders increase the PsyCap of followers which in turn improves their POB and productivity within their specific job and authentic leaders also generate higher PsyCap among the group of followers which leads to better OCB with benefits to team environments.

The largest area where authentic leaders seem to impact followers is in PsyCap. While George (2003) believes that authentic leaders motivate followers by modeling a powerful sense of purpose to ethically deliver excellence, more recent literature has linked follower performance to an authentic leader's development of their PsyCap as mentioned above. PsyCap is defined as an individual's state of psychological development and may be characterized by "(1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back even beyond (resiliency) to attain success." (Luthans et al., 2007, p. 3). From this definition, PsyCap can be understood to contain the four dimensions of self-efficacy, optimism, hope and resilience. Luthans et al. (2007) summarize PsyCap as a construct by stating that it represents "one's positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (p. 550). Leaders with high PsyCap are especially helpful in industries like construction because their positive psychological capacities make them open to development and change (Avolio & Gardner 2005). One key component of the PsyCap construct is its classification as "state-like" meaning that unlike

character which is “trait-like”, PsyCap is malleable and may be developed in a person (Rego et al., 2011). Rego et al. (2011) concluded that authentic leaders promote creativity among followers because authentic leaders develop the PsyCap of followers which results in higher creativity. Walumba et al. (2011b) found that psychological capital and trust actually mediated the relationship between the citizenship behavior and performance of employees and their authentic leader. As they state “this study suggests that authentic leadership may enhance group member’s psychological capital and trust levels, which in turn affect their citizenship behavior and performance” (p. 18).

Work engagement is another effect of authentic leaders on their followers (Yammarino et al., 2008). Schaufeli and Bakker (2004) define work engagement as “positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (p. 295). They define vigor as the willingness and energy to devote oneself to the work at hand, and for resolution or perseverance in difficulty or failure. Dedication is defined as a strong sense of significance in one’s work and is accompanied by feelings of pride, inspiration, and enthusiasm and challenge. Absorption is being happily engrossed in one’s work while fully concentrated to the point that it is difficult to detach oneself from the work. A study by Hassan and Ahmed (2011) also links authentic leadership with positive follower attitudes towards their work and concludes “If leaders are seen as transparent, acting according to espoused values, and not displaying self protective motives then they develop trusting relationship with their employees which in turn contribute to positive employees work outcomes such as work engagement” (p. 168). Figure 2 shows a conceptual model of these mediating processes and benefits.

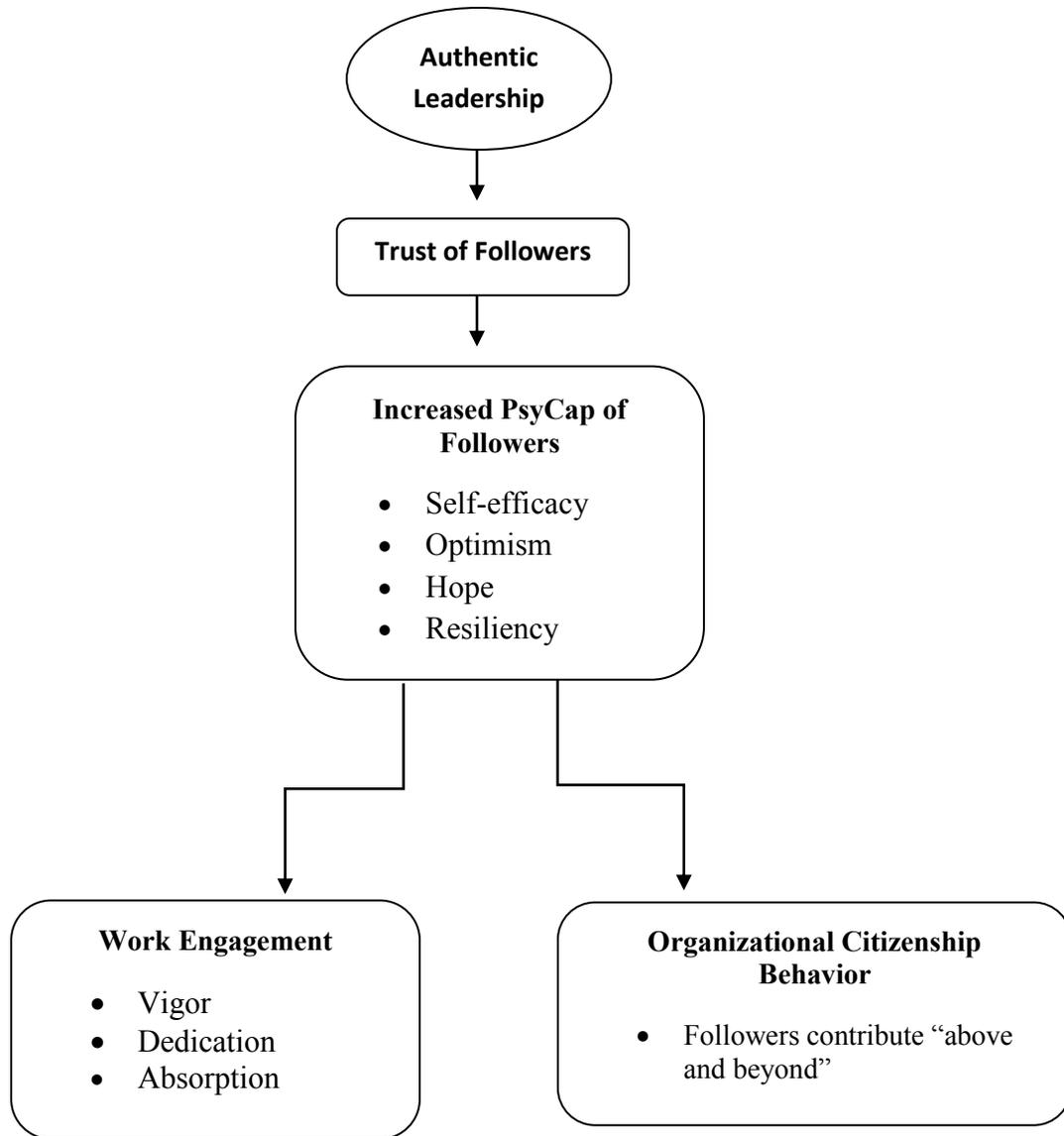


Figure 2. Conceptual Model of Authentic Leadership Benefits to Followers

In summary, work engagement and OCB are the benefits that authentic leaders produce. These benefits are the result of authentic leaders promoting increased PsyCap among followers and within follower groups (Walumba et al., 2010). This conclusion seems to parallel another set of studies that looked at extrinsic vs. intrinsic motivation among employees. Three studies on motivation and incentives looked at the traditional

notion of financial rewards to motivate people in tasks. The first two studies by Glucksberg (1962, 1964) famously found that when complex tasks must be completed that require creative solutions, higher financial incentives led to lower performance. These studies demonstrated that in straight-forward tasks where the solution is obvious, or in purely mechanical tasks, financial incentives did increase productivity but that when creativity was required, the opposite occurred. The other study looked at a similar topic and concluded that in tasks requiring creativity, problem solving and concentration, higher incentives led to worse performance (Ariely et al., 2005). These studies demonstrate that transactional style leadership that was prevalent in the 20th century and focused on the mechanistic application of rewards and punishments through traditional incentives works well for repetitive tasks. Incredibly, as was seen in the literature review, that style of motivation actually decreases performance in 21st century knowledge workers where creative solutions are needed. For the solution to this dilemma one must return to Deci and Ryan's 2000 paper that outlined Self-Determination Theory (SDT) which served as a foundation of authentic leadership.

Deci and Ryan's paper contrasts extrinsic and intrinsic motivation. Extrinsic motivation is the 20th century method of focusing on rewards and punishment and supplied by transactional leadership. Intrinsic motivation is supplied by transformational leadership. In this paper, Deci and Ryan explain that there are three needs that a person must have met to be intrinsically motivated: competence, relatedness, and autonomy. When these needs are met they allow for psychological growth, integrity, and well-being and most importantly increased work engagement, productivity and work satisfaction. These needs for intrinsic motivation are supplied by the increased PsyCap dimensions of

self-efficacy, optimism, hope and resilience that authentic leaders foster in their followers and result in the benefits that are seen in productivity and work satisfaction. In the simplest of terms, authentic leaders provide what knowledge workers facing complex problems need to be intrinsically motivated and therefore engaged, fulfilled and productive at work.

Authentic Leadership in the Construction Industry

While leadership in the construction industry has seen some treatment in the literature, the application of authentic leadership to the sector seems to be limited to two authors who have written several papers on the topic in the last four years (Toor & Ofori, 2008; Toor & Ofori, 2009; Toor & Ofori, 2010). Toor and Ofori's 2008 paper entitled "Leadership for Future Construction Industry: Agenda for Authentic Leadership," is an excellent discourse on the merits of authentic leadership in the construction industry and should be read by anyone with interest in the topic. For the purpose of this paper, the high points of Toor and Ofori's 2008 paper will be discussed to assist in developing the ideas first set forth in Toor and Ofori and continued here.

Toor and Ofori (2008) begin by stating the need for leadership in the construction industry to promote a positive culture and develop highly ethical leaders. In order to accomplish this feat, the authors argue that authentic leaders must be bred within the industry. They reference an earlier work they authored (Toor & Ofori, 2006) that detailed the challenges facing the construction industry as socio-cultural, economic, technological, legal and regulatory, and ethical. Individuals familiar with the construction industry are necessary to navigate these challenges but the industry must

develop these internal players to be authentic leaders. The result of these immense challenges has been a shift toward organizational structures that seek to empower employees to deal with these challenges in hopes of intrinsically motivating problem-solvers. Outlining active forces such as an industry wide technological and project-oriented paradigm and the passive forces such as lack of leadership training in traditional engineering programs, Toor and Ofori argue that construction superintendents are compelled by these influences to remain conventional and conform to situational demands or accept the existing circumstances. To meet the changing structure of the industry, construction superintendents need to be flexible and embrace change.

Previous studies on leadership in the construction industry such as Chan and Chan (2005) report findings that transformational leadership styles lead to better performance and satisfaction of employees involved in building construction. This is most likely due to the nature of the industry needing creative solutions instead of mechanical procedures. Toor and Ofori (2008) use this study to set up the call for the closely related authentic leadership model to serve as the solution to the leadership crisis. The conceptual model by which a traditional project manager may be transformed into an authentic leader is shown in Figure 3.

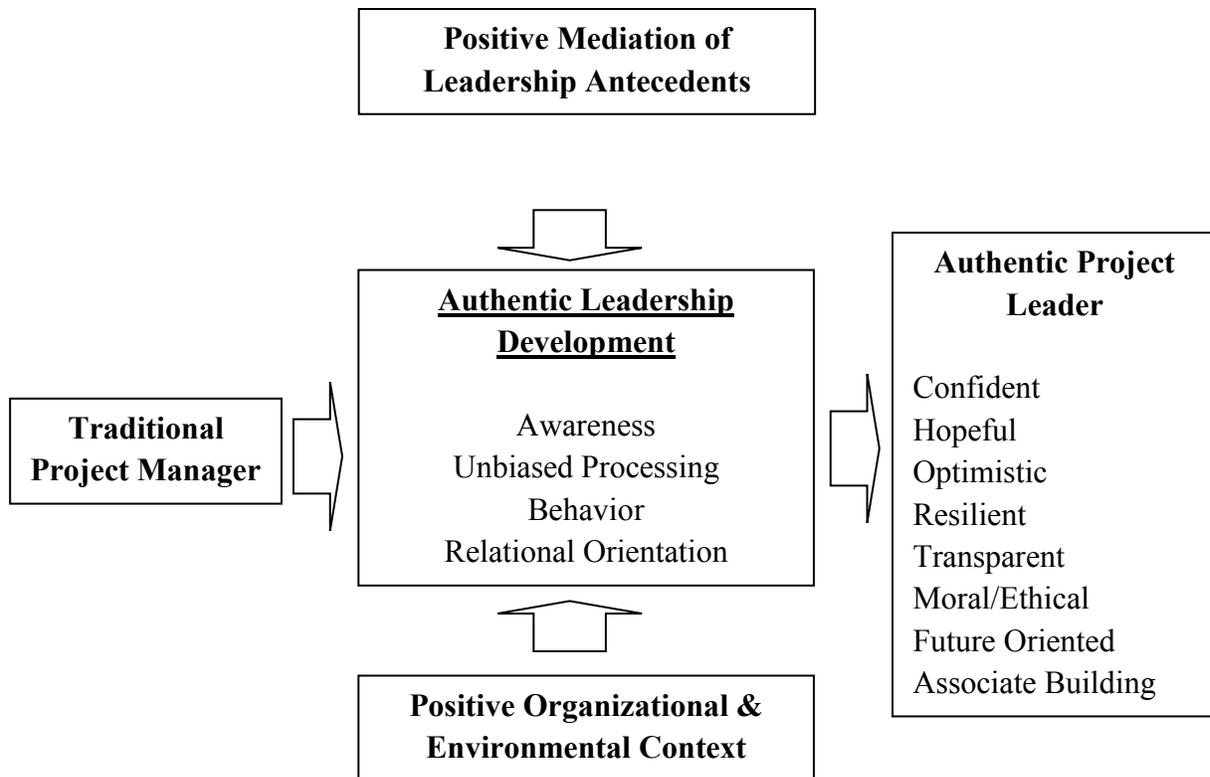


Figure 3. Proposed Model for Authentic Leader Development in the Construction Industry (Toor & Ofori, 2008).

Toor and Ofori (2008) report that most leadership studies on the construction industry have focused on executives, project managers, site managers and surveyors but that there is evidence that supervisors and foremen play a large role in the success of a construction project and they call for studies to examine this demographic. They conclude their 2008 paper with the declaration that projects with authentic leaders will have a “sustainable competitive advantage” (p. 628) stemming from veritable performance and growth.

The only study found that attempted to quantify the effects of authentic leadership on the construction industry was Toor and Ofori’s (2009) study which utilized the

Authenticity Index as the instrument. This instrument was developed by Kernis and Goldman and seeks to identify the level of authenticity an individual possesses instead of directly measuring the person's authentic leadership. Toor and Ofori's study concluded that authenticity successfully predicts psychological well-being in leaders and links that state to beneficial organizational outcomes.

Finally, as mentioned in the Introduction, Alliance contracting is a trust based contracting procedure used extensively in New Zealand. A recent paper by Lloyd-Walker and Walker (2011) applies the concept of authentic leadership to a discourse on "the increasingly preferred procurement method of alliance project agreements and the different skills, knowledge and attributes it requires now, and will require of project leaders and team members in the future" (p. 394) The authors conclude that "the levels of communication and dialogue required in alliances are found in authentic leaders" (p. 394) As the construction industry worldwide moves towards similar contracting methods, authentic leadership is poised to meet the new needs of companies in the sector.

Proposed Conceptual Model

This study expects that construction superintendents who possess greater levels of authentic leadership traits will also demonstrate higher levels of effectiveness at completing their projects on time, on budget and with high customer satisfaction. The proposed conceptual model is shown in Figure 4.

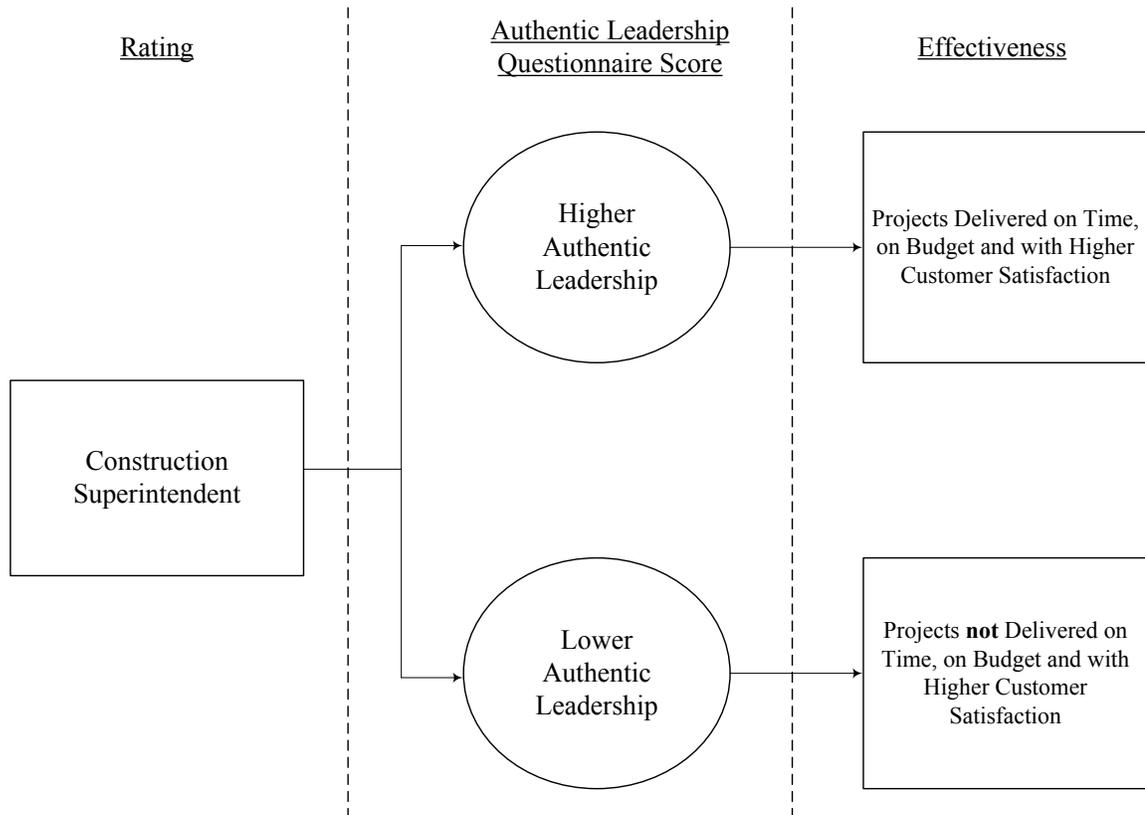


Figure 4. Proposed Conceptual Model for Construction Superintendent Effectiveness Mediated by Authentic Leadership Traits.

Development of Hypotheses

This study primarily seeks to establish if a correlation exists between authentic leadership and project success in the construction industry. The following hypotheses, developed from examination of the existing literature, are proposed in order to test the theory.

Authentic Leadership and Effectiveness

Authentic leaders have been shown to produce development in followers in areas of work engagement (Hassan & Ahmed, 2011), Organizational Citizenship Behaviors (Walumba et al., 2011b), psychological capital and creativity (Rego et al., 2011), and trusting (Hassan & Ahmed, 2011) and ethical climates (Lloyd-Walker & Walker, 2011). As an authentic leader develops their followers, there should be a measureable upward trend in areas of performance in whatever tasks the leader and their followers are engaged in. As authentic leaders create an environment where, for example, the exchange of ideas is welcomed then better project performance will result. This effect should increase over time as knowledge gained on one project by followers transfers to the next project. It is also plausible that over time, followers of authentic leaders might see greater success in their careers as the development they enjoy under such leaders prepares them well for advancement (Luthans & Avolio, 2003; Toor & Ofori, 2008).

If a construction superintendent can develop followers, there should be an increase in performance over time from project to project so a leader with higher authentic leadership traits might see better performing projects due to the development of

their followers. The transient nature of the construction industry though may make long-term linkage of followers to a specific leader less likely. Therefore construction superintendents that demonstrate authentic leadership attributes may produce benefits due to the fact that an authentic leader communicates well with the owner, subs and followers and establishes a more open and effective atmosphere on the project, leading to collaboration, higher satisfaction and better productivity.

Whether the mechanism that mediates higher effectiveness and customer satisfaction is due to development of followers or the positive attributes that a construction superintendent brings to the stakeholders of a project, it is proposed that an authentic leader will see greater effectiveness of their projects. Therefore, this study postulates the following hypotheses:

Hypothesis 1A: Construction superintendents with higher scores on the Peer-report Authentic Leadership Questionnaire will receive higher ratings of effectiveness on their ability to deliver projects on time, on budget and with high customer satisfaction.

Hypothesis 1B: Construction superintendents with higher scores on the Self-report Authentic Leadership Questionnaire will receive higher ratings of effectiveness on their ability to deliver projects on time, on budget and with high customer satisfaction.

Difference in Self-report vs. Peer-report

Because part of the authentic leadership construct includes self-awareness, the opportunity to compare the responses from a subject who answered for themselves with the responses answered about them by another is intriguing. If there is a difference in the answers, it would be noteworthy to determine if those who score higher on the Self-report Authentic Leadership Questionnaire see less distance between group means when a paired T-test is run on their answers and their peer's answers about them. The idea that those with greater authentic leadership traits have better self-awareness and therefore will answer more closely to the peer-report on them than those who score lower on authentic leadership is beyond the scope of this study. However, it is valuable to determine if there is a statistically significant difference between the mean of the self-report surveys and peer-report surveys to the following hypothesis is postulated:

Hypothesis 2: There will be a significant difference in the mean score from the Self-report survey and the mean score from the Peer-report survey.

CHAPTER III

METHODOLOGY

Data Collection Procedure

This study sought to correlate measures of authentic leadership demonstrated by commercial construction superintendents with effectiveness ratings on these superintendent's ability to deliver projects on budget, on time and with high customer satisfaction. A commercial construction company in the top 150 largest firms as reported by Engineering News Report ("The top 400 contractors," 2011) was selected because of the high levels of sustained performance, customer satisfaction and examples of leadership that exists in this company.

The first step was to contact the target company to seek permission to perform this study within the organization. A meeting with the owner was arranged and after a short presentation, access was given to the superintendents and two Vice-Presidents (VP) to complete the study. The VPs were assigned to the project by the owner of the company since both were involved in operations and therefore the most familiar with the superintendents. In this particular company structure, the superintendents report directly to the VPs of operations so these VPs were the only people with direct responsibility to all of the superintendents. An online version of the Self-Report Authentic Leadership

Questionnaire (ALQ) was set up after obtaining permission from the authors to utilize this copyrighted instrument. A link to the survey was sent to the coordinating VP of the construction company via email containing distribution instructions. The superintendents were forwarded the link and completed the self-report version of the survey. An online survey was then created for each superintendent that had responded for the two VPs to complete a peer-report version of the survey. In order to randomize assignment of the superintendents between the two VPs, and online list randomizer (www.random.org/lists) was utilized. Each VP answered the survey for half of the sample group of superintendents.

The VPs were then sent an online rating scale and asked to rate each superintendent on their “effectiveness at delivering projects on budget, on time and with high customer satisfaction.” Each VP rated the effectiveness of the superintendents that they had completed the peer-report ALQ for.

Sample Description

Of the 38 Self-Report Authentic Leadership Questionnaire surveys distributed, 34 of the superintendents responded resulting in a yield rate of 89.5%. One-hundred percent of the superintendents that returned the self-report survey had peer-report surveys and effectiveness scores completed by the VPs. The respondents ranged in age from 21 to 60 years with a mean age of 45.2 years. One-hundred percent of the respondents were male. Twenty-nine of the respondents were superintendents and five were assistant superintendents. Any assistant superintendent included in the study was in charge of the job site to which they were assigned, making the title of assistant relevant only to

company hierarchy as they were *de facto* superintendents. Years of experience in the construction industry ranged from less than one year to 39 years with a mean of 23.3 years of experience. The highest degrees earned were 35.2% high school diploma, 58.8% some college, 0% associates degree, 5.8% have a bachelor degree. Table 4 summarizes the demographics.

Table 4. Demographic Information for Sample

Demographic	# of Respondents
Age (n=33)	
18-25	1
26-33	3
34-41	3
42-49	15
50-57	9
58-65	2
Year of Experience (n=34)	
0-5	1
6-10	2
11-15	3
16-20	7
21-25	8
26-30	6
31-35	5
36-40	2
Sex	
Male	34
Female	0
Level of Education	
High School	12
Some College	20
Associates Degree	0
Bachelor Degree	2
Graduate Degree	0

Survey Instrument

Authentic Leadership

To measure authentic leadership this study uses the 16 item Authentic Leadership Questionnaire (Copyright © 2007 Authentic Leadership Questionnaire (ALQ) by Bruce J. Avolio, William L. Gardner, and Fred O. Walumba. Distributed by Mind Garden, Inc. www.mindgarden.com). There are two versions of this questionnaire, one for self-report and one for peer report. The ALQ measures four dimensions of authentic leadership: balanced processing (3 items), self-awareness (4 items), internalized moral perspective (4 items) and relational transparency (5 items). Respondents answer with what frequency they observe each described behavior in themselves or in their peer on a 5 point scale ranging from 0 (not at all) to 4 (frequently, if not always).

Sample items are: (1) analyzes relevant data before coming to a decision; (2) seeks feedback to improve interactions with others (self-awareness); (3) makes difficult decisions based on high standards of ethical conduct; (4) admits mistakes when they are made (relational transparency). A composite score of all items reveals the target's authentic leadership score.

Effectiveness

To measure effectiveness two methods were used. First, a seven point Likert instrument was created online using SurveyMonkey.com. The scale ranged from one (Not Effective at All) to 7 (Highly Effective). Each superintendent's name was placed with one of these scales and the VPs were prompted: "For each person listed below, please select a rating of their effectiveness at delivering high quality projects on time, on

budget, and with customer satisfaction.” The scale was selected to have seven points to prevent many superintendents from “piling” up on one score.

Data Analysis

Because authentic leadership is a core construct Walumba et al. (2008) report that variance in the individual dimensions of authentic leadership are not as important as variance in the composite authentic leadership score. Due to this, comparison of the individual dimensions was not performed.

In order to account for one survey that had a missing answer, the composite scores from each response to the Authentic Leadership Questionnaire were divided by the number of items answered to determine an average per item score which was then used as the Effectiveness Score for each superintendent.

Using SPSS 18.0, a correlation analysis was run between AL Self-report, AL Peer-report and Effectiveness Rating to determine mean, standard deviation and whether there were significant interaction effects between the variables. A paired T-test was performed between the AL Self-Report and AL Peer-report to determine if there was a significant difference in the means between the two surveys. The AL Self-report and AL Peer-report scales were both validated using a reliability analysis but the Effectiveness Rating was not since it has only one item.

CHAPTER IV

FINDINGS

Reliability of Scales

The reliability analysis performed on the Peer-report version of the ALQ produced Cronbach's Alpha of $\alpha=.944$. The Self-report version of the ALQ produced Cronbach's Alpha of $\alpha=.801$. With the generally accepted standard of anything greater than $\alpha=.70$ named as a reliable instrument, both of these scales are determined to be internally consistent.

Correlation of Effectiveness Score and Authentic Leadership

There was a statistically significant correlation between the scores from the Peer-report version of the ALQ and the effectiveness ratings of the superintendents ($r = 0.377$, $p = 0.05$). Hypothesis 1A was supported. Superintendents with higher traits of authentic leadership as reported by another demonstrate higher levels of effectiveness on their projects. There was no statistically significant correlation between the Self-report ALQ scores and the Effectiveness Ratings. Hypothesis 1B was not supported ($r = .299$). Superintendents self-reporting higher levels of authentic leadership do see higher effectiveness ratings, however the correlation was not statistically significant. The correlation coefficients of all paired variables are shown in Table 5.

Table 5. Correlations, Means, Standard Deviations, and α Values of Variables

(n=34)

Variable	1	2	3
1. Effectiveness Rating (M=5.88; SD=.913)		.377*	.299
2. AL Peer-Report (α =.944; M=2.93; SD=.634)			.069
3. AL Self-Report (α =.801; M=3.41; SD=.361)			

M: Mean; SD: Standard deviation

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

Difference of Means in Self-report vs. Peer-report

The sample mean per question score for the Self-report ALQ was M=3.41 with SD=.361. The sample mean per question score for the Peer-report ALQ was M=2.93 with SD=.634. A paired t-test performed on the sample means of the Self-report version of the ALQ and the Peer-report version of the ALQ. First, a weak and not significant correlation ($r = .069$, $p = .697$) existed between the responses of the two instruments. The paired t-test showed a significant difference in the response means of the two surveys ($t(34) = -3.940$, $p [2\text{-tailed}] = .000$). Table 6 summarizes the paired t-test result. Hypothesis 2 was supported with Self-reported authentic leadership (M = 3.41) higher than Peer-reports (M = 2.93).

Table 6. Paired Sample t-tests for Self-report and Peer-report

Variable	No. of Pairs	Self-report Mean	Peer-report Mean	t-value	Sig.
Authentic Leadership Scores	34	3.41	2.93	-3.940	.000

CHAPTER V

CONCLUSION

Summary and Discussion of Major Findings

The most important finding of this study was a correlation between the peer-reported authentic leadership of the construction superintendents and their effectiveness rating. This correlation demonstrates that superintendents that possess higher levels of authentic leadership attributes are more effective at managing construction projects. This finding supports research in the literature that the construction industry should move toward authentic leadership as the model for construction superintendents (Toor & Ofori, 2008).

This study also demonstrated a significant difference of means between the Self-report and Peer-report versions of the ALQ with the Self-reports seeing a higher mean. This is to be expected since people will often think more favorably of themselves than others or than the true state of themselves. This discrepancy fed into the failure of this study to demonstrate a correlation between Self-report scores on the ALQ and effectiveness. No statistically significant correlation existed between these two variables meaning that the Self-report ALQ may not be a useful tool in predicting superintendent effectiveness. Nonetheless, evaluation of superintendents by executives or recruiters for

authentic leadership traits is still supported by this study as a useful tool in selecting effective employees due to the correlation of Peer-report ALQ to effectiveness.

Assuming the accuracy of the Peer-report version of the ALQ to be higher and therefore more truly reflective of the levels of authentic leadership present in the sample participants, the results suggest that the authentic leadership traits displayed by superintendents are visible to executives. Any company will certainly have metrics in place for evaluating performance based upon objective measures so the effectiveness ratings are assumed to reflect actual states of the superintendents. The difficult part of evaluating superintendents comes in identifying the more subjective contributions of the superintendents that contribute to the effectiveness differences. These are often referred to as “soft skills.” This company is known to perform 360 feedback for all employees. In this form of evaluation, each employee will receive feedback on their performance from other employees below, beside and above them in the corporate hierarchy. Such practices are useful when done with truthfulness as a paramount component but can lose their impact if participants are reticent to speak openly and honestly. For 360 feedback to work well, the receiver of the evaluation needs to possess many of the traits of an authentic leader in order to be open to difficult information that may come in. Balanced processing will allow the receiver to hear and accept suggestions for change and relational transparency will aid in evaluators accurately knowing and evaluating the receiver. Because the company that is the subject of this study practices 360 feedback, it may be assumed that the authentic leadership traits are seen in their employees to some degree during these sessions. Whether or not this company saw these traits as a grouping that correlated with greater effectiveness for their superintendents is unknown but the

results warrant construction companies looking for and developing these traits in their employees. Additionally, because “authentic leaders are presumed to be free of the need to engage in ego-protecting biases that distort the process of self-relevant information,” (Walumba et al., 2011a, p. 2) practices such as 360 feedback sessions should be more productive when they involve intellectually honest authentic leaders.

Authentic leaders are expected to increase the overall performance of a project (Kernis & Goldman, 2005) for all involved stakeholders (Toor & Ofori, 2008). This study supports that expectation as it shows that authentic leaders benefit their company through projects delivered on time and on budget and benefit the owners through high customer satisfaction. Now that construction superintendents who are authentic leaders have been shown to offer better project performance, the next step is to discover how to train authentic leaders. There is some discussion on this topic in the literature (Shamir & Eilam, 2005; Michie & Gooty, 2005) but the topic is still in the theoretical phases and needs empirical studies to compliment theory development. This need poses a great opportunity to uncover how authentic leaders are made and how construction superintendents interested in increasing their productivity can shift toward this model of leadership.

Limitations

Limitations to this study include sample size, subjective measure of effectiveness, validity threats from having a single person answer both the Peer-report ALQ and the effectiveness scores, and possible difference in rating approaches between the two VPs. The sample size appears small for a study of this type but the professional level of

construction superintendent limits the numbers available in any one company. Limitations on access to multiple companies necessitated the sample size but ideally future studies would incorporate multiple companies to increase samples.

The measure of effectiveness used was a simple, one item survey for each superintendent. While this question was aimed at the full range of success factors in a construction project, the simplicity of the measure and the subjective nature of the Likert style ratings mean that it is not as powerful as a more objective method. Due to time constraints and limited resources, engaging company records for cost and schedule performances or actively measuring project performance over time were not options.

The fact that the VPs each answered half of the Peer-report ALQ surveys and provided the corresponding effectiveness ratings poses a potential threat to validity. It might be argued that by filling out the ALQ for the superintendents the VP was primed to think more positively of those supers he scored higher on the ALQ and that influenced his effectiveness ratings. Ideally the Peer-reports would have been answered by followers of the superintendents but the structure of the company used did not have employees directly under each of the superintendents.

The final threat to this study stemmed from splitting the sample in half and having two VPs each fill out half of the Peer-report ALQs and effectiveness ratings. If one VP tends to rate more critically than the other, the sample will not accurately reflect the true distribution of the superintendents.

Future Studies

Future research on authentic leadership in the construction industry may focus on using more objective means to measure superintendent effectiveness such as project cost, schedule adherence and quality. Following superintendents over multiple projects will allow conclusions to be drawn as to the sustained performance of authentic leaders in the industry and whether project performance sees an upward trend under authentic leaders as they develop followers. Tracking follower development will provide insight into an authentic leader's ability to transform their direct reports into authentic leaders themselves. Research seeking to determine the exact method whereby authentic leaders in the construction industry increase project performance is needed. Determining if it is by follower development or other means is crucial in an industry where stakeholders are numerous and workforces are transient. Also, as other studies call for, authentic leadership needs to be singularly defined.

Finally, studies are needed to determine if a correlation exists between higher authentic leadership levels and smaller differences of means between the self and peer report versions of the ALQ in order to see if the self-awareness of authentic leaders plays out in their questionnaire responses.

The nascent field of leadership in the construction industry and the relatively recent application of authentic leadership theory to the industry creates ample opportunities for research.

APPENDIX A

INSTITUTIONAL REVIEW BOARD EXEMPTION

Texas State University-San Marcos | IRB Online Application



The rising STAR of Texas

Institutional Review Board

Request For Exemption

Certificate of Approval

Applicant: Benjamin Broughton

Request Number : EXP2011H2138

Date of Approval: **10/31/11**

A handwritten signature in black ink, appearing to read "M. Blundie".

Assistant Vice President for Research
and Federal Relations

A handwritten signature in black ink, appearing to read "Jon Lane".

Chair, Institutional Review Board

APPENDIX B

APPROVAL TO USE AUTHENTIC LEADERSHIP QUESTIONNAIRE.



www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material;

Instrument: Authentic Leadership Questionnaire (ALQ)

Authors: Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa

Copyright: "Copyright © 2007 Authentic Leadership Questionnaire (ALQ) by Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa. All rights reserved in all medium."

for his/her thesis research.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

APPENDIX C

SURVEY QUESTIONNAIRE SAMPLE ITEMS FROM SELF-REPORT

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

As a Leader I:

admit mistakes when they are made. 0 1 2 3 4

demonstrate beliefs that are consistent with actions. 0 1 2 3 4

make difficult decisions based on high standards of
ethical conduct. 0 1 2 3 4

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