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# Loosening the Gordian knot: the role of emotional intelligence in construction

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## Abstract

**Purpose** – A perennial problem faced by construction professionals, educators and researchers is what needs to be done to improve project performance? In addressing this question, the need for the switching of lenses from the dominant operations paradigm to one that focuses on organizational behavior is advocated. Emotional intelligence (EI) is a growing area of behavioral investigation which is considered to be positively related to occupational success, satisfaction, emotional health and adjustment. This paper aims to look at its influence.

**Design/methodology/approach** – In this paper emotions are examined and the usefulness measures of EI are discussed and critiqued. The paper then looks more closely at the way in which EI may relate to success in a common position within the construction industry, that of the construction manager.

**Findings** – Recommendations are made on the ways in which research and practice can contribute to project success through attention to the link between EI and project performance.

**Practical implications** – In construction, there is a real need to examine how individuals, teams and the structure of projects influence behavior, if the improvements being sought within the industry are to be realistically achieved. Potentially EI, in conjunction with other assessment tools, could be used by construction organizations to significantly improve the performance of construction managers and their teams.

**Originality/value** – Several researchers in construction have begun to examine EI but have limited understanding about its underlying origins and the problems associated with many of the tools that have been developed. The paper provides invaluable guidance about how EI could be used to improve the performance of construction projects.

**Keywords** Individual behaviour, Team working, Project evaluation, Construction industry

**Paper type** Research paper



## Introduction

During the last 50 years the construction industry has been criticized for its poor performance when compared with that observed in other industrial sectors (e.g., Emmerson, 1962; Banwell, 1964; Latham, 1994; DIST, 1998; Egan, 1998; Tang, 2001). Efforts to address this problem have led to the widespread transfer of innovative management tools and techniques from more technologically advanced industries to

construction (e.g., supply chain management, lean construction, alliances). As part of the transfer process, construction researchers have sought to adapt these aforementioned tools and techniques to a construction setting. These resulting hybrids are then proclaimed and marketed as being panaceas to project procurement problems. Yet, despite this research activity there has been little evidence that the propagation of such hybrids have formed an integral part of most construction firms operations, particularly in Australia, Hong Kong and the UK. As a result, it would appear that the problems identified by the Banwell report (UK) in the 1960s are still prevalent within the industry today. Surveying the literature provides an insight into frequent cost overruns, delays, and underperformance in terms of quality, which seem to be ubiquitous within the industry (CIDA, 1993; Winch, 1996; Chan and Kumaraswamy, 1997; Kumaraswamy, 1997; Love, 2002; Flyvberg *et al.*, 2002). A perennial problem faced by construction professionals, educators and researchers is what needs to be done to improve project performance? In addressing this question, the need for the switching of lenses from the dominant operations paradigm to one that focuses on organizational behavior is propagated. A review of the emotional intelligence (EI) literature is provided and then contextualized to construction.

#### *Switching of lenses*

Historically, construction research has tended to focus on the factors of process, product and more recently the environment and legislation, through the lenses of technology, economics, management, and operations management (Koskela, 2000). In fact, Koskela (2000) has argued that there is a dearth in construction management theory and has suggested academia and industry embrace a transformation-value-flow approach founded on the concepts embedded within lean production. In a similar vein, Koskela and Howell (2002) have also stated that the underlying theory of project management is obsolete, and that an alternative theory should be founded on developments in operations management because of the sympatric symmetry that exists between these concepts. Developments in operations management have typically focused on process efficiency (optimization) (Holweg, 2007; Sprague, 2007) and placed emphasis on “technicist solutions, quantitative methodologies, and a strong reliance on instrumental rationality” (Hodgson and Cicmil, 2006, p. 9). It should be acknowledged that a generic theory of construction management has not been forthcoming, but the field has yet to mature. However, operations management is not the panacea to industry’s problems as it provides no scope for theory generation with respect to psychological (individual) and sociological (team) considerations (Love *et al.*, 2002), which are fundamental to procuring projects successfully.

Many advances within the field of construction management have been made under the auspices of the “operations management” paradigm, but improvements in the industry’s performance have been marginal over the last decade or so. This has led a number of researchers within the construction management community to actively examine how the field of organizational behavior can contribute to improving the overall performance of projects (e.g., Bresnen *et al.*, 1986; Rowlinson *et al.*, 1993; Loosemore, 1998). Organizational behavior seeks to: “investigate the impact that individuals, groups and structure have on behavior within organizations for the purpose of applying such knowledge towards improving an organization’s effectiveness” (Roberts *et al.*, 2001, p. 10). It is suggested that a greater examination

and understanding of how individuals and teams influence organizational behavior will lead to improvements in project performance and the industry as a whole.

Underpinning the operations management paradigm is an assumption of rationality (and hence predictability) in the workplace. Such an assumption formed the basis of organizational improvement attempts under scientific management (Taylor, 1911) in the early 1900s and was at the time informed by the dominant behaviorist paradigm in psychology. A key view of the individual in the workplace at the time was of a person who was largely economically-driven and, acting rationally, would thus be motivated to work in ways that ensured the highest pay, even though the work methods involved (such as assembly line work) were highly prescriptive, repetitive, and relatively meaningless. However, as macro-economic conditions changed and theory and research developed concerning individuals at work, the rational-economic view of the individual was superseded by other approaches that have taken a broader view of the individual and their work performance.

Trist and Bamforth (1951), for example, showed that a sole focus on the technical aspects of work provided an incomplete (albeit necessary) solution to improving workplace productivity and employee performance. In addition to examining and improving the technical systems of work, these authors (along with a long line of subsequent research) have established that the social aspects of the work environment must also be considered in any effort to understand and improve work performance. Subsequent insights in other areas (for example job design) have sought to incorporate individual needs for meaningful work, autonomy and feedback into the way in which work is designed and carried out, and have led to productivity improvements, particularly through the notion of participative design and the self-managed work team approach now utilized more broadly within the construction industry.

Views of work and of the individual within the workplace from the standpoint of organizational psychology thus clash somewhat with those of the dominant operations management paradigm. While processes can be readily optimized using deterministic, heuristic and stochastic tools and techniques to determine “best practice” (e.g. Love *et al.*, 2002; Edwards *et al.*, 2004) and law like predictions, the nature of human behavior and the performance of individuals and teams in the workplace is far more difficult to accurately predict or optimize. Somewhat akin to the systems dynamic perspective on operations theorists in organizational psychology propagate a contingency approach to the prediction (and improvement) of work behavior, recognizing that a large and complex array of variables can influence individual and group performance (Kast and Rosenzweig, 1973).

Whilst the assumption that workplace performance is influenced only by economic drivers has been long refuted, the “myth of rationality” (Putnam, 1993) in relation to people at work has taken longer to dislodge. One of the key developments to cast doubt on the assumption of rationality at work has been the increased recognition of the role that emotions play in everyday working life. There is a growing body of research literature on topics related to emotions and affect in the workplace (Hartel and Ashkanasy, 2002), emotional labor (Hochschild, 1983; Brotheridge and Grandey, 2002), burnout (Maslach and Leiter, 1997; Bourdreau, 2006) and EI (Goleman, 1996).

A long-standing view regarding emotions in the workplace holds that emotions introduce unwanted variation, and as a result managers have sought to design emotions out of the work environment in order to better stabilize and improve work

performance. However, research into the link between emotions and workplace performance suggests that regardless of attempts to formalize and rationalize work processes, employees routinely react emotionally to events at work, which in turn influences their work behavior (Weiss and Cropanzano, 1996). Emotions are intricately linked to employee satisfaction with work and the workplace, and influence intentions to behave in both productive and non-productive ways, for example acting above and beyond one's own work role, or initiating or engaging in job search behavior. As workplace is generally structured to ignore or downplay emotions, it has been suggested that even positive emotions can be disruptive to work performance (Fisher, 2000).

So where do emotions fit into construction management? To address this question, we consider one of the key topics in current research on emotions; the concept of EI. We define the term, discuss the usefulness and critiques of the concept, then look more closely at the way in which EI may relate to success in a common position within the construction industry, that of the construction manager. Finally, we make recommendations on ways in which research and practice can contribute to project success through attention to the link between EI and project performance.

### What is EI?

Contrary to the claims of Goleman (1996, 2006) EI is not a new concept in science. Thorndike (1920) used the term "social intelligence" to describe the skill of getting along with other people. Gardner (1983) formulated the idea of "multiple intelligences", including both personal intelligence and interpersonal intelligence. Gardner (1999) has argued that the focus on EI alone is narrow and that the psychometric tradition focuses on intellectual aptitudes that can be measured by standardized tests does not necessarily translate into success at school or in life. Gardner's (1999, pp. 33-4) broader perspective of intelligence is defined as "the biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture".

The modern concept of EI, which is distinctly different from interpersonal intelligence proposed by Gardner, was first introduced by Salovey and Mayer (1990) and since then has been popularized by several best-seller books (e.g., Goleman, 1996, 2006; Goleman and Cherniss, 2001; Golemann *et al.*, 2002). Despite a plethora of definitions of the concept from a variety of authors, an examination of the literature reveals that there is a growing consensus on the Mayer and Salovey definition of EI (Ashkanasy and Daus, 2005) as the "ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth".

Statements such as "EI may be the best predictor of life success, re-defining what it means to be smart" (*Time*, 1995) and "we've known for years that EI improves results – often by order of magnitude" (Golemann *et al.*, 2001, p. 42), have created an explosion of research activity into the concept and its applicability to both life and the workplace (Mayer *et al.*, 2002, p. 5). Accordingly, Carmeli (2003) has revealed that managers who are deemed to be "emotionally intelligent" out perform those who have a lower EI. Golemann *et al.* (2001) have further claimed that EI can predict leadership effectiveness. Several academics have taken issue with this largely unsubstantiated

claim and stress that EI cannot predict leadership effectiveness beyond IQ or the “big five” personality traits (e.g., Antonakis, 2003, 2004). However the most recent research reviews in the area do suggest that when appropriately measured, a positive relationship does exist between EI and job performance, at least for jobs with high client or customer interaction and/or emotional demands (Daus and Ashkanasy, 2005).

### *Measures of EI*

The most popular measures of EI, from an individual perspective are the Bar-On EQ-i (Bar-On, 1997), Emotional Competence Inventory (ECI) (Boyatzis *et al.*, 2000), the EQ Map (Orioli *et al.*, 2000), and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer *et al.*, 2002). With the exception of the MSCEIT, the aforementioned tests are self-report measures where an individual is asked to endorse a series of descriptive statements using a rating scale. Self perceptions can however, be inaccurate and are vulnerable to response bias, social desirability and deception. The MSCEIT measure of EI is currently recognised in the academic literature as the measure most subjected to relevant psychometric tests of reliability and validity, and attempts to objectively measure the following salient features:

- emotional perception i.e. the ability to correctly identify how people are feeling;
- emotional facilitation i.e. the ability to create emotions and integrate feelings into the way one thinks;
- emotional understanding i.e. the ability to understand the causes of emotions; and
- emotional management i.e. the ability to figure out effective strategies that use your emotions to help achieve a goal, rather than being used by one's emotions.

In combating the problems associated with self perception report tests, Mayer *et al.* (2002) use performance based measures similar to those found in traditional intelligence instruments to legitimize their EI test. Definitive details about the structure, design and scales of the MSCEIT can be found in Mayer *et al.* (2002). However, it should be noted that tests such as the MSCEIT should be administered by trained personnel familiar with the principles of testing and psychometrics, such as a qualified psychologist. Moreover, in many cases EI test results can be most productively used in conjunction with other tools for assessing employees, staff or project teams.

### *The construction manager's role*

So where does the concept of EI fit within construction management? To understand the degree to which the concept of EI might be linked to work in construction management we utilized the US Department of Labor's O\*NET database (which provides standardized and occupation-specific descriptors on a broad range of occupations) to provide a formal definition of a common position within the construction industry, that of the construction manager, and the required characteristics of those undertaking construction management related work. O\*Net serves as a useful source of information regarding the construction manager role, as it is regularly updated by surveying a broad range of workers from this occupation (see the Appendix). We also cross-referenced information on the construction manager role

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in O\*NET with the results of key research into work roles in construction management by a range of authors (Love *et al.*, 2001) stress (Sutherland and Davidson, 1989) to provide a clear picture of the construction managers role.

The construction managers role according to O\*NET is to “plan, direct, coordinate, or budget, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems and to participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation”. Common job titles that fall under this occupation descriptor include Project Manager, Construction Manager, Construction Superintendent, Estimator, Concrete Foreman, Construction Area Manager, Construction Foreman, General Contractor, Job Superintendent, and Project Superintendent.

Faulkner (1989, p. 161) states that many of the interpersonal aspects of the construction manager’s role have been identified by incumbents as “the most difficult or demanding aspect of the job”, while supervision skills and skills in motivating others are seen as some of the most required managerial skills. Based on the above description of EI, we identified a number of key tasks, skills, and personal characteristics in the construction manager role that suggest a need for EI. Key tasks include:

- Conferring with supervisory personnel, owners, contractors, and design professionals to discuss and resolve matters such as work procedures, complaints, and construction problems.
- Preparing contracts and negotiating revisions, changes and additions to contractual agreements with architects, consultants, clients, suppliers and subcontractors.
- Directing and supervising workers.

Key skills include:

- *Instructing* – teaching others how to do something.
- *Active listening* – giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- *Judgement and decision making* – considering the relative costs and benefits of potential actions to choose the most appropriate option.
- *Negotiation* – bringing others together and trying to reconcile differences.

Key personal characteristics include:

- *Dependability* – job requires being reliable, responsible, and dependable, and being able to fulfill obligations.
- *Leadership* – job requires a willingness to lead, take charge, and offer opinions and direction.
- *Self-control* – job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.



- *Stress tolerance* – job requires accepting criticism and dealing calmly and effectively with high stress situations.
- *Cooperation* – job requires being pleasant with others, and displaying a good-natured, cooperative attitude.
- *Innovation* – job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems.
- *Adaptability/flexibility* – job requires being open to change (positive or negative) and to considerable variety in the workplace.
- *Initiative* – job requires a willingness to take on responsibilities and challenges.

It is evident that the construction manager's role fits well within a number of areas of current research into emotions. Utilizing the above description of EI and an understanding of the construction manager role, we now focus on a number of areas of research and practical interest in construction management.

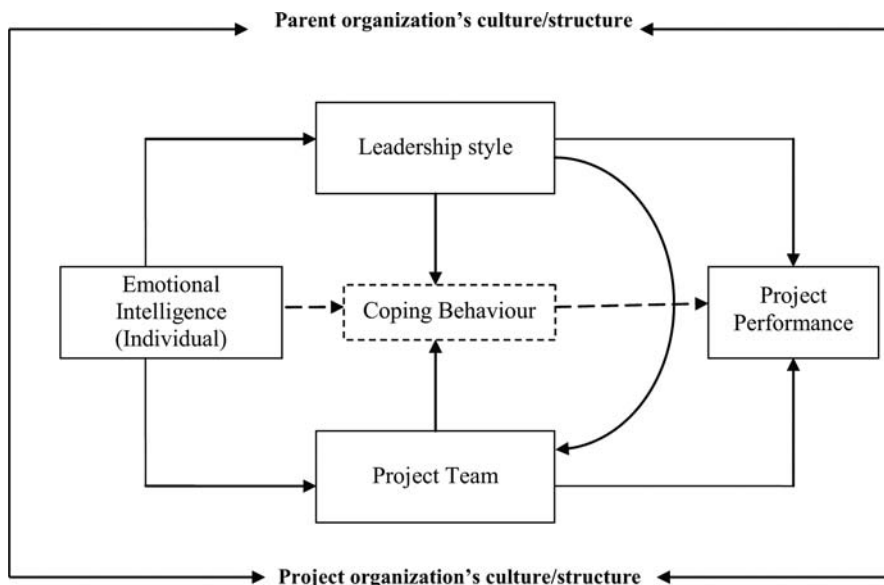
#### *EI and construction managers*

Goleman (1998) has proposed that individuals who possess a high degree of EI can positively influence both team and organizational performance. Some preliminary research within construction has revealed this to be the case (e.g., Butler and Chinowsky, 2006; Sunindijo *et al.*, 2007). Since Goleman's (1998) assertion, the concept of EI has become increasingly popular within the business fraternity, particularly human resource management. Often, EI is considered to be mistakeably synonymous with simply having good social skills (Sunindijo and Hadikusumo, 2005; Goleman, 2006) such as good interpersonal and communication skills. As noted above, such skills have been identified as being fundamental for construction managers, as they deal with an array of people at various levels such as clients, consultants, subcontractors and suppliers on a daily basis (Love *et al.*, 2002;). EI, however, extends beyond simply possessing social skills. Being emotionally intelligent involves being actively able to identify, understand, process and influence one's own emotions and those of others to guide feeling, thinking and action (Mayer and Salovey, 1997). Individuals who possess a high degree of EI are able to make informed decisions, better cope with environmental demands and pressures, handle conflict in an effective manner, communicate in interesting and assertive ways and make others feel better in their work environment (Bar-On, 1997; Mayer and Salovey, 1997, Goleman, 1998; Ozcelik *et al.*, 2008). For construction project managers' who are constantly confronted with solving disputes and general problems during pre and post construction, an ability to formulate satisfactory solutions is essential.

Individual moods and emotions, emotion sharing processes, and team affective composition may all be modified by the affective context (i.e. emotion norms that govern emotional expression) in which a project team is situated (Hackman, 1992). Isen and Daubman (1984) have demonstrated that positive affect promotes better creativity and greater cognitive flexibility. Construction managers who have a positive mood toward problem solving will invariably evaluate things more positively than those who have a negative mood (Mayer *et al.*, 1992; Botheridge and Lee, 2008; Humphrey *et al.*, 2008). Negotiations, for example, between a contractor and a client's representative (with respect to a claim) can be highly emotional charged situations for both parties,

especially when substantial financial investments are at stake. The negotiation process is fraught with emotion, and emotional relationships and contingent interactions can all impact upon the outcome (Baron, 1993). Thus, when entering negotiations or solving problems on-site with team members or subcontractors it is important that construction project managers are cognizant that their emotional standing can influence their mood and those around them.

*EI and leadership.* Bresnen *et al.* (1986) and Rowlinson *et al.* (1993) have suggested that the construction managers' leadership style can influence a project's outcome. Similarly, Nam and Tatum (1997) have stated that effective leadership is fundamental for innovation in construction. Two leadership styles dominate the construction management literature; charismatic or transformational. Transformational leaders provide a vision that followers accept and believe in, they inspire and motivate their followers and stimulate their followers intellectually (Bass, 1998). The components of transformational leadership bear a resemblance to the key components of EI. To engage in transformational leadership, leaders need to have clear emotional self-awareness, which is similar to the EI concept of understanding (Bass, 1998). A charismatic leader, on the other hand, tries to obtain follower compliance. It is generally used in a manipulative and emotionally demanding manner when subordinates are subject to exploitation. It is suggested that construction project managers who are deemed to be emotionally intelligent should be able to positively utilize charismatic leadership skills to regulate their own and others' emotions, and use emotional information for decision-making to achieve creative and positive outcomes (Figure 1). However, George (2000) and Caruso *et al.* (2001) have suggested that EI is an important catalyst of leadership irrespective of the style adopted, as it enables leaders to: articulate team goals and objectives; instill enthusiasm to team members; empathize



**Figure 1.**  
The role of EI and its  
impact on project  
performance



with team members; establish cooperation and trust; and identify and encourage flexibility.

In particular, Butler and Chinowsky (2006) have found a significant relationship between EI and transformational leadership behavior among construction executives. In a similar vein, Sunindijo *et al.* (2007) demonstrated that EI influenced the style of leadership adopted by project managers and engineers in construction projects. It was revealed that project managers and engineers with higher levels of EI tended to utilize open communication and proactive leadership styles. It was also found by Sunindijo *et al.* (2007) that EI generates delegation, open communication, and proactive behavior, which provide positive outcomes within a project environment.

*EI, stress and coping behavior.* Researchers within the field of EI suggest that intelligence increases developmentally. Alternatively, Horn and Hofer (1992) and Roberts *et al.* (2000) argue that for some, when cognitive abilities such as fluid reasoning decline, others such as acculturated knowledge improve providing a negative correlation. There is no general consensus on this issue, however there is scope for alternative developmental trajectories to be examined for different components of EI such as those identified within the MSCEIT. For example, Goleman (1998) suggests that EI moderates the direct effect of stress through the coping behavior of the individual. Job stress arises when an occupational situation has demands, constraints and opportunities that are perceived to threaten (or to exceed) a person's personal resources and coping abilities (Sutherland and Davidson, 1989; Love and Edwards, 2005; Love *et al.*, 2010). During make-or-break moments in a project, an individual's ability to be flexible and adaptive to stress and change, to consider new information (whilst resisting self protection) and responding quickly and appropriately is crucial for project managers and team members. A combination of the stresses imposed on construction project managers and a lack of social support (Love and Edwards, 2005; Love *et al.*, 2010) poses a danger that feelings of frustration and resentment are temporarily repressed only to manifest in periodic angry outbursts (Hochschild, 1983). Such feelings result, in part, from the constant requirement to monitor one's negative emotions, and to express positive ones. If unchecked, or if not given a healthy expressive outlet, can lead to emotional exhaustion or burnout (Krumel and Geddes, 2000).

The phenomenon of "burnout" of which a key component is emotional exhaustion has been shown to have serious effects on construction staff and organizations (e.g., Lingard, 2003). Kruml and Geddes (2000) have shown that individuals experience stress when they fake emotion, thereby demonstrating a potential link to burnout. Further, inhibiting emotion also can lead to aversive physiological and psychological outcomes. The physiological outcomes occur through a complex process that weakens the immune system. Adverse health outcomes that can result from non-expression of negative emotion include serious disorders such as hypertension and cancer (Grandey, 2000). Working on a construction project is stressful and participating organizations need to provide social support to their employees (Djebarni, 1996). Construction project managers and their site management team would benefit from being better educated as to how they can better manage their "emotions" as this will have a direct contribution to better project outcomes (Sommerville and Langford, 1994; Love *et al.*, 2010).

*EI and working with project teams.* Team based research in construction has generally focused on identifying task processes that distinguish the most successful

teams (i.e. the need for participation, commitment, cooperation, goals, and so forth). The underlying assumption appears to be that once these processes are identified they can be imitated by other teams with similar effects. The circumstance that contributes to team success is the condition that enables task processes to emerge and stimulate members to actively engage in them. For this to happen a team needs to create emotionally intelligent norms that support behaviors for building trust, group identity and group efficacy (Druskat and Wolff, 2001). The composition of a project team is normally different for each construction project, and therefore the norms developed are impossible to replicate; this renders the notion of best practice an impossible task to attain.

Assessing individuals and a team's EI before a project commences can provide project managers with an important psychological description, and enable them to identify strategies to improve their team's effectiveness (Fernández-Aráoz, 2001). Basic training with respect to EI could commence by examining the following concepts embedded in EI: feeling, thinking and acting. Members of a project team, particularly project managers, need to be aware of their emotions and understand how their feelings can affect other people. Next, project team members need to try to determine why they are experiencing certain emotions, and should be made aware of how these emotions can be controlled. Then, actions for a particular situation should only be undertaken when the situation is understood clearly.

There may be specific projects that require individuals or teams to possess high EI in relation to the economic importance or political sensitivity. Thus, adopting formal training and off-site training programs can improve EI, but only when sustained changes in interpersonal and inter-group relationships within the parent organization are made. Changes within the parent organization should then provide the foundation for improving inter-organizational relations and establishing the "norms" in project teams, as well as ensuring that the change is sustainable.

## Conclusion

The perennial problem of poor performance seems to continually plague the construction industry despite monumental efforts of both academics and practitioners; it is a Gordian Knot that strangles the construction sector, and to-date the riddle remains unsolved. Introducing new management tools and techniques adopted from more technologically advanced industries, has not significantly reversed the observed trend. Projects still continue to experience cost and schedule blowouts, disputes and accidents. One could therefore conclude that innovation and technology transfer and/or adoption *per se* are ineffectual and that greater attention ought to be given to members of the project management team. After all, the capability of the individual determines whether any tool or technique is successfully implemented. In acknowledgement of this obvious, yet much overlooked fact, psychologists have explored the concept of organizational behavior and an individual's EI. Both explore the complex interrelationship that exists between individuals within a project or organization and the impact of these individuals upon company competitiveness. Psychologists have pointed to the many benefits associated with EI research work, yet the concept remains largely unexplored in a construction context. This notable absence is perhaps partly due to a similar absence of psychological research in construction, but also a general unwillingness of industry to focus on individual psychology; the industry

seems infatuated with process efficiency under the banner of the operations management paradigm. From the evidence presented in the literature, it is suggested that if construction organizations focused on selecting construction managers who were highly emotionally intelligent determined by the use of EI instrument (such as the MSCEIT), as well as provided training on how to become aware and utilize emotions appropriately in their role, then industry may see a significant enhancement of effectiveness over and above that offered by operational improvements alone. Unless the management of individuals and teams are scrutinized in greater detail then the improvements in construction efficiency that are being sought will only remain marginal.

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**Appendix**

O\*NET provides descriptive information about the construction manager occupation developed through job and organizational analysis. O\*NET focuses on six major aspects of the construction manager occupation which specify the key attributes and characteristics of construction managers and of construction management as an occupation:

- (1) *Worker characteristics* – the enduring characteristics that influence performance and the capacity to acquire knowledge and skills required for effective work performance including relevant abilities, occupational interests, work values and work styles.
- (2) *Worker requirements* – the work-related attributes acquired and/or developed through experience and education including basic and cross-functional skills, knowledge and prior educational experience required to perform the job.
- (3) *Experience requirements* – requirements related to previous work activity including prior experience and training needed for the job, basic and cross-functional skill requirements for entry into the job, and any license requirements.
- (4) *Occupation-specific information* – any occupation-specific tasks undertaken and particular tools or technology required in the job.
- (5) *Workforce characteristics* – relevant labor force trends and information that may influence occupational requirements.
- (6) *Occupational requirements* – comprehensive information about the general and detailed work activities, and the work and organizational context that influences how people do the job.

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