

EXPLORING THE IMPORTANCE OF EMOTIONAL QUOTIENT IN CONSTRUCTION: PERSPECTIVES FROM HEALTH AND SAFETY PROFESSIONALS IN SOUTH AFRICA

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ABSTRACT

Self-regard, emotional self-awareness, flexibility, problem solving, and stress tolerance, inter alia, constitute attributes that affect how well activities are carried out by individuals. Thus, construction activities that are people intensive require a measure of emotional quotient (EQ) to enhance project performance, especially with regard to health and safety (H&S). EQ is important due to: intrapersonal EQ; relationship with one self; interpersonal EQ; stress management; adaptability, and general mood of employees. The aforesaid in due course impact on performance related to the project parameters in the sector, inter alia, cost, H&S, time, quality, and productivity. The purpose of the paper is to present the findings of an exploratory study that was conducted to determine the perceived importance of EQ in terms of managing construction H&S and the extent to which EQ contributes to optimising H&S performance on projects in South Africa. This is aimed at contributing to the enhancement of H&S performance in construction.

Keywords: Construction, Emotional Quotient, Health and Safety (H&S), Performance, Project, South Africa

1. INTRODUCTION

The South African literature has noted construction health and safety (H&S) related underperformance (Construction Industry Development Board, 2009: 37; 2010: 4; Emuze and Smallwood, 2012: 33).

This persistent underperformance, that is not limited to construction H&S, has necessitated a paradigm shift in the industry in terms of construction management. A shift from the dominant operations paradigm to one that addresses organisational behaviour is now being promoted in the discipline of construction management (Love, Edwards and Wood, 2011: 52). This particular study engages with this shift and contributes to the emotional quotient (EQ) discussion from the South African perspective. EQ, which measures emotional competence, embraces managerial and leadership qualities that are essential for managing projects (Muller, Geraldi and Turner, 2012: 77). EQ is being promoted based on the premise that organisational behaviour can be used for improving performance in construction. Organisational behaviour is concerned with examining the impact that individuals, groups, and structure have on the behaviours within a firm for the purpose of applying such knowledge towards enhancing effectiveness and efficiency in the firm (Roberts, Ziedner and Mathews, 2001: 198)

Love et al. (2011: 59) recently contend that an in-depth investigation and appreciation of how individuals and teams influence organisational behaviour would lead to improvement in construction project performance. Muller et al. (2012: 86) also show that EQ and managerial leadership training should be incorporated into the education and training of project managers since EQ and managerial competence impact projects positively and directly. As an illustration, the value of EQ extends to H&S management. The findings of a study indicate that project personnel can use emotional intelligence (EI), interpersonal skills, and transformational leadership, to implement H&S management tasks and develop safe climate in work environments (Sunindijo and Zou, 2011: 10). Sunindijo and Zou (2011: 8) and by extension Salovey and Mayer (1990: 187) observe that EI, particularly self-awareness, is a core factor that contributes to improvement of individual performance and the evolution of effective relationships with others. They further note that project personnel can show their EI in interpersonal relationships by communicating effectively, motivating others, resolving conflicts, and building teams. In effect, effective interpersonal relationships are needed so that employees can become transformational leaders that inspire their teams to generate superior performance (Sunindijo and Zou, 2011: 10).

The overall aim of this discourse is to argue that EQ and its contributions to project H&S performance optimisation may be useful in the construction management domain. The premise adopted indicates that management lies in the recognition that people engage in both repetitive and non-repetitive operations. Going forward, a synopsis of the value of EQ in construction is provided before the main data that emanate from the South African study is presented. Final remarks that conclude the paper re-echo the usefulness of EQ in the construction industry.

2. LITERATURE REVIEW

EI is defined as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s

thinking and actions” (Salovey and Mayer, 1990: 189).

JCPMI Vol. 4 (1): 721 - 733, 2014

This 1990 definition by Salovey and Mayer shows that emotions can be used to guide logical thinking and goal-oriented actions that are important in construction project environments. In other words, emotions can enhance rationality when this definition is taken into consideration.

Several authors from the management and humanity disciplines have shown how working with emotions can enhance certain skills. Within a project context, Carmeli (2003: 807) confirms that managers who are considered to be ‘emotionally intelligent’ outperform their peers; and EI can be said to be the “ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional wisdom, and to reflectively regulate emotions in order to enhance emotional and intellectual growth.” (Ashkanasy and Daus, 2005: 450) Love et al. (2011: 56) recently contextualised EI to construction. Love and his co-authors suggest that although psychologists have pointed to the benefits associated with EI, the concept still remains largely unexplored in a construction context. The study observed that this notable absence could be due to a similar lack of psychological research in construction, but also a general unwillingness of the industry to pay attention to individual psychology because the industry seems rooted in process efficiency under the banner of the operations management paradigm. They then conclude that if construction organisations focus on selecting managers who are highly emotionally intelligent, and provide training to employees on how to become aware and utilise emotions appropriately in their role, the industry may see a significant improvement of effectiveness over and above that offered by the renowned operational initiative alone.

In particular, Caruso et al. (2001: 56) contend that EI is a vital catalyst of leadership, either the charismatic or the transformational style, as it enables leaders to: articulate team goals and objectives; engender enthusiasm in teams; empathise with team members; establish cooperation and trust, and identify and then encourage flexibility. For instance, citations by Love et al. (2011: 58) indicate that assessing individuals and a team’s EI before the start of a project can provide managers with a vital psychological description, and enable them to identify strategies that would improve project performance in terms of effectiveness. Love et al. (2011: 59) deduce that members of a project team, particularly site management, need to be aware of their emotions and understand how their feelings can affect other people. In other words, members of the project team need to make an effort to determine why they are experiencing certain emotions, and should be made aware of how these emotions can be controlled.

Before the contextualisation of EI into the construction domain by Love et al. (2011: 59), an EI related study was conducted among project managers and engineers in Thailand in a bid to determine the benefits of EI to project management in terms of leadership style. The study that was conducted in Thailand was intended to extend the usefulness of EI to the construction industry.

The findings of the study indicate that project managers and engineers with higher EI scores tend to use more open communication and proactive leadership styles than their counterparts with lower EI scores (Sunindijo et al., 2007: 169). Sunindijo et al. (2007: 170) also note that there were positive correlations between leadership behaviours and EI dimensions. The study discovered that EI generates delegating, open communication, and proactive behaviours, that are essential for the achievement of zero accidents on sites and other objectives.

According to Sunindijo et al. (2007: 170), open communication is a key factor in organisational success as it is the catalyst for getting the best from people, construction workers and site management alike; and proactivity is essential to tackle problems at the early stages of the construction process. Hence, a project manager or engineer with high EI can stimulate team performance and innovation (Sunindijo et al., 2007: 170). This argument was reinforced by the Thai study, which indicates that the project managers and engineers with high EI scores used stimulating, rewarding, delegating, leading by example, open communication, listening, participating, and proactive behaviours more than the project managers and engineers with low EI scores. In addition, Sunindijo et al. (2007: 169) note significant positive correlations between delegating and self-awareness, sharing and open communication with social-awareness, and pro-activeness with self-management.

Another study that was conducted in the United States of America (USA) among construction executives examined the EI profiles of construction leaders and the relationship between construction leader EQ and transformational leadership behaviour (Butler and Chinowsky, 2006: 121). Evidence from the study shows that stress tolerance, independence, and optimism constituted EI strengths among the respondents. As indicated in Table 1, stress tolerance falls under the stress management area of EI, independence is categorised under intrapersonal skills, and optimism is a component of general mood.

In addition, interpersonal skills were found to be the most important of the major components of EQ in explaining transformational behaviour, while empathy, a subscale of interpersonal skills, was found to be the most important variable of the 15 subscales in explaining transformation leadership behaviour variance. As a result, Butler and Chinowsky (2006: 125) argue that the findings of the study have indeed proven that a relationship exists between construction leader EQ and transformational leadership behaviour. Because the study of competencies opens the door to insights relative to humans and talent, and adults appear to be able to develop competencies that are vital to outstanding performance in management, leadership, and many other occupations and professions (Boyatzis, 2009: 765), a study that explores how EQ can be used to the benefit of construction H&S is arguably a timely endeavor.

Table 1 Bar-On's model of Emotional Intelligence

Component Measured by EQ-I Subscales	Area
Self-regard	Interpersonal skills
Emotional self-awareness	
Assertiveness	
Independence	
Self-actualisation	
Empathy	Intrapersonal skills
Social responsibility	
Interpersonal relationship	
Reality testing	Adaptability
Flexibility	
Problem solving	
Stress tolerance	Stress management
Impulse control	
Optimism	General moods
Happiness	

Extracted from Butler and Chinowsky (2006: 120)

3. RESEARCH METHODOLOGY

Given that the exploratory study was intended to provide insights that will be useful for a future in-depth study, a pilot survey was conducted among H&S professionals in South African construction. The purposive sampling method was adopted as the H&S professionals were selected on the basis of their likely understanding and appreciation of EI and its role in managing construction H&S and achieving optimum performance. The self-administered questionnaire was sent per e-mail to professionals within the with the intention of achieving at least 30 responses before the initial analysis was undertaken. 38 responses were recorded during the compilation of this paper, and constitute the basis of the presented findings. The data was captured in and analysed using MS Excel. Because of the limited responses only descriptive statistics in the form of frequencies and a measure of central tendency, namely a mean score (MS), were used for presenting the findings in the next section. The questions that were posed to the respondents entailed five-point Likert scale formats and were formulated to elicit responses to the importance of fifteen attributes / states according to Bar-On's model of EI (Butler and Chinowsky, 2006: 120) in terms of managing construction H&S, and the contributions of these attributes / states to optimising (best possible) H&S performance. The questionnaire included the definitions of the fifteen attributes / states to prevent misunderstanding and to assure congruence when responding to questions. These definitions include:

- Self-regard: The ability to look at and understand, respect and accept oneself;

JCPMI Vol. 4 (1): 721 - 733, 2014

- Emotional self-awareness: Ability to understand ones thoughts, feelings and emotions;
- Independence: Be self-reliant, do not need anyone to tell them what to do, can stand and work alone, lead;
- Assertiveness: Express feelings, beliefs, thoughts in a non-destructive way, not using anger and temper;
- Self-actualisation: Realize ones potential, strive to reach what one wants to, in the right career, being fulfilled;
- Empathy: To emotionally read others, feel for them as if in their shoes (different from sympathy);
- Social responsibility: Co-operate, contribute to one's social group, being involved, caring for the team, society;
- Interpersonal relationships: Maintain satisfying relationships, getting along with others;
- Stress tolerance: The ability to withstand adverse and stressful situations without falling apart;
- Impulse control: Ability to resist or delay an impulse, drive or temptation to act (e.g. anger, eating, drugs, shopping);
- Reality testing: Ability to assess the correspondence between what is experienced (subjective) and what in reality exists (having accurate assumptions);
- Flexibility: Ability to adjust ones emotions, thoughts and behaviours to changing situations, manage change and new ways of doing things;
- Problem solving: Ability to identify, define problems and implement effective solutions;
- Optimism: Ability to look at the brighter side of life, maintain a positive attitude, and
- Happiness: To feel satisfied with one's life, enjoy one self, have fun, study, which was quantitative in nature addressed H&S management in terms of: knowledge of legislation (its existence); perceptions relative to H&S; aspects of H&S culture, and management practices / interventions.

4. FINDINGS AND DISCUSSION

Table 2 indicates the importance of attributes / states in terms of managing construction H&S in terms of percentage responses to a scale of 1 (not) to 5 (very), and a MS ranging between 1.00 and 5.00. Given that all the MSs are > 3.00, all the attributes / states can be deemed to be important.

However, nine of the fifteen (60%) MSs $> 4.20 \leq 5.00$, and thus the attributes / states can be deemed to be between more than important to very important / very important. Problem solving predominates with a MS of 4.74. This attribute is critical, as during the process of construction and when managing H&S, problems are

frequently encountered.

JCPMI Vol. 4 (1): 721 - 733, 2014

Second ranked assertiveness is important due to the challenging nature of construction and that H&S is a 'life or death' issue. Third ranked stress tolerance is also a critical attribute as stress is frequently experienced by all levels of construction management and production workers. Furthermore, the inability to tolerate stress could result in poor decision making or impulsive action(s), which in turn could be the trigger for a series of events that culminates in an accident. Reality testing, ranked fourth, is particularly important in terms of managing H&S as a manager must be able to differentiate between reality and perception.

The remaining six (40%) MSs are $> 3.40 \leq 4.20$, and thus the attributes / states can be deemed to be between important to more than important / more than important. Self-regard, ranked tenth, is important as within the context of managing H&S, managers and others need to reflect and respect themselves in order to respect others. Given that H&S is a corporate social responsibility (CSR) issue, eleventh ranked social responsibility is important. Construction is a dynamic and ever changing process, in that on many projects the work level changes with time and it is not static as a production line. Therefore, twelfth ranked flexibility is important to enable management to absorb and process the realities of construction without compromising H&S.

Thirteenth ranked self-actualisation is important as within the context of managing H&S, achievers and the achievement of optimum or better practice in terms of importance has benefits. Fourteenth ranked happiness is a state that assists managers to face the challenges of construction and managing H&S. Independence, ranked fifteenth is important as managers in construction must be leaders and 'do the right thing' as opposed to 'doing things right', and often act decisively with respect to managing H&S.

For example the perception that all stakeholders and workers are committed to H&S is just that, the commitment should be tested. Due to the pressure experienced and the stressful nature of construction, fifth ranked impulse control is important. Furthermore, in terms of managing H&S, acting on impulse can have fatal consequences. Due to the number of stakeholders, the team nature of construction, construction is people intensive, and that H&S requires a multi-stakeholder effort, the ability to optimise sixth ranked interpersonal relationships is important. Seventh ranked empathy is important as managers should consider the H&S of individuals as if they were personally undertaking the activity themselves. Emotional self-awareness, ranked eighth, is important as managers must understand their thoughts and feelings and the reasons for their decisions, and be conscious and mindful of the H&S implications of such decisions. Managing construction and H&S is challenging and therefore optimism, ranked ninth, is important.

Table 2 Importance of attributes / states in terms of managing construction H&S

Attribute / State	Response (%)						MS	Rank
	U	NotVery						
		1	2	3	4	5		
Problem solving	0.0	0.0	0.0	2.6	21.1	76.3	4.74	1
Assertiveness	0.0	0.0	0.0	5.3	34.2	60.5	4.55	2
Stress tolerance	0.0	0.0	0.0	10.5	28.9	60.5	4.50	3
Reality testing	0.0	2.6	0.0	7.9	31.6	57.9	4.42	4
Impulse control	0.0	0.0	0.0	7.9	44.7	47.4	4.39	5
Interpersonal relationship	0.0	0.0	0.0	10.5	39.5	50.0	4.39	6
Empathy	0.0	0.0	2.6	10.5	42.1	44.7	4.29	7
Emotional self-awareness	0.0	2.6	2.6	7.9	36.8	50.0	4.29	8
Optimism	0.0	2.6	2.6	10.5	31.6	52.6	4.29	9
Self-regard	0.0	2.6	0.0	18.4	39.5	39.5	4.13	10
Social responsibility	2.6	2.6	2.6	7.9	42.1	42.1	4.11	11
Flexibility	0.0	2.6	0.0	23.7	31.6	42.1	4.11	12
Self-actualisation	0.0	0.0	0.0	28.9	34.2	36.8	4.08	13
Happiness	2.6	2.6	7.9	13.2	34.2	39.5	3.92	14
Independence	0.0	5.3	5.3	26.3	26.3	36.8	3.84	15

Table 3 indicates the extent to which attributes / states contribute to optimising (best possible) H&S performance on construction projects in terms of percentage responses to a scale of 1 (minor) to 5 (major), and a MS ranging between 1.00 and 5.00. Given that all the MSs are > 3.00, all the attributes / states can be deemed to contribute more of a major than a minor extent to optimising (best possible) H&S performance on construction projects. However, five of the fifteen (33.3%) achieved MSs > 4.20 ≤ 5.00, and thus the attributes / states can be deemed to contribute between a near major to major / major extent. As with the importance of attributes / states, problem solving predominates. It is followed by a cluster consisting of assertiveness, stress tolerance, impulse control, and self-actualisation. The remaining ten (66.7%) MSs are > 3.40 ≤ 4.20, and thus the attributes / states can be deemed to contribute between some extent to a near major / near major extent. These are interpersonal relationship, optimism, self-regard, flexibility, social responsibility, reality testing, emotional self-awareness, empathy, happiness, and independence.

Table 3 Extent to which attributes / states contribute to optimising (best possible) H&S performance on construction projects

Attribute / State	Response (%)						MS	Rank
	U	MinorMajor						
		1	2	3	4	5		
Problem solving	2.6	0.0	0.0	5.3	26.3	65.8	4.50	1
Assertiveness	5.3	0.0	0.0	7.9	28.9	57.9	4.29	2
Stress tolerance	2.6	0.0	0.0	10.5	36.8	50.0	4.29	3
Impulse control	2.6	0.0	0.0	7.9	47.4	42.1	4.24	4
Self-actualisation	2.6	0.0	0.0	10.5	44.7	42.1	4.21	5
Interpersonal relationship	5.3	0.0	2.6	5.3	36.8	50.0	4.18	6
Optimism	2.6	2.6	0.0	15.8	26.3	52.6	4.18	7
Self-regard	2.6	2.6	0.0	7.9	44.7	42.1	4.16	8
Flexibility	2.6	2.6	0.0	7.9	44.7	42.1	4.16	9
Social responsibility	2.6	2.6	2.6	7.9	39.5	44.7	4.13	10
Reality testing	2.6	2.6	2.6	10.5	36.8	44.7	4.11	11
Emotional self-awareness	2.6	2.6	2.6	13.2	31.6	47.4	4.11	12
Empathy	2.6	2.6	5.3	13.2	34.2	42.1	4.00	13
Happiness	5.3	2.6	2.6	23.7	13.2	52.6	3.95	14
Independence	2.6	5.3	5.3	23.7	23.7	39.5	3.79	15

Table 4 presents a comparison of the importance of attributes / states in terms of managing construction H&S and the extent to which attributes / states contribute to optimising (best possible) H&S performance in terms of MSs. The MSs range from 4.74 to 3.84 in the case of importance and from 4.50 to 3.79 in the case of contribution. Problem solving predominates both in terms of importance and in terms of contributing to optimising H&S performance. Assertiveness and stress tolerance are both ranked second and third respectively in terms of importance and contributing to optimising H&S performance. There are no notable differences between the importance and contribution of attributes / states in terms of MSs, the greatest being relative to reality testing, followed by empathy, then assertiveness, stress tolerance, and interpersonal relationship. However, in terms of rank, there are notable differences. Conversely, although the ‘importance’ rank of reality testing is fourth the ‘contribution’ rank is eleventh. Similarly, in the case of empathy it is seventh and thirteenth respectively, and in the case of emotional self-awareness it is eighth and twelfth respectively.

Table 4 Comparison of the importance of attributes / states in terms of managing construction H&S and the extent to which attributes / states contribute to optimising (best possible) H&S performance on construction projects

Attribute / State	Importance		Contribute		Difference
	MS	Rank	MS	Rank	
Problem solving	4.74	1	4.50	1	0.24
Assertiveness	4.55	2	4.29	2	0.26
Stress tolerance	4.50	3	4.29	3	0.26
Reality testing	4.42	4	4.11	11	0.31
Impulse control	4.39	5	4.24	4	0.15
Interpersonal relationship	4.39	6	4.18	6	0.21
Empathy	4.29	7	4.00	13	0.29
Emotional self-awareness	4.29	8	4.11	12	0.18
Optimism	4.29	9	4.18	7	0.11
Self-regard	4.13	10	4.16	8	- 0.03
Social responsibility	4.11	11	4.13	10	- 0.02
Flexibility	4.11	12	4.16	9	- 0.05
Self-actualisation	4.08	13	4.21	5	- 0.13
Happiness	3.92	14	3.95	14	- 0.03
Independence	3.84	15	3.79	15	0.05

5. DISCUSSION

The study was conducted based on the premise that managing construction activities demands a measure of individual and / or work team EQ that are related to: intrapersonal EQ-relationship with oneself; interpersonal EQ-relationship with colleagues and associates, and the mood of employees. The aforesaid then affect H&S performance parameters inherent in construction projects. The results of the pilot study can be deemed to corroborate arguments that can be discerned in the literature, especially in terms of managing projects and the extent that EQ contributes to optimum performance: EQ and managerial competence impact projects positively and directly (Muller et al., 2012: 86); project personnel can use EI, interpersonal skills, and transformational leadership, to implement H&S management tasks and develop a healthy and safe climate in work environments (Sunindijo and Zou, 2011: 10); EI, particularly self-awareness, is a core factor that contributes to improvement of

individual performance and the evolution of effective relationships with others (Sunindijo and Zou, 2011: 8); project personnel can show their EI in interpersonal relationships by communicating effectively, motivating others, resolving conflicts,

JCPMI Vol. 4 (1): 721 - 733, 2014

and building teams, and effective interpersonal relationships are needed so that employees can become transformational leaders that inspire their teams to generate superior performance (Sunindijo and Zou, 2011: 10).

Furthermore, Caruso et al. (2001: 56) contend that EI is a vital catalyst of leadership, either the charismatic or the transformational style, as it enables leaders to articulate team goals and objectives, engender enthusiasm in teams, empathise with team members, establish cooperation and trust, and identify and then encourage flexibility. The findings of the study are underscored by Carmeli (2003: 807) who confirms that managers who are considered to be 'emotionally intelligent' outperform their peers. There is also a strong positive correlation between EI and project performance in a project management domain (Zhang and Fan, 2013: 205). The correlations observed by Zhang and Fan (2013: 202) show each EI dimension affect project performance different level where emotional self-awareness, emotional self-control, empathy, organisational awareness, cultural understanding and communication deserve attentions due to their significant effects.

The particular exploratory study has thus confirmed the findings of prior and other studies reported on in the literature, and given that it is the first such study that has been conducted in South Africa, particularly in construction, it has contributed to the debate relative to the role of EQ in managing construction H&S, and its contribution to H&S performance in South Africa. However, it should be noted that scholars need to be more attentive to the nature of the task when assessing how EI impacts upon project performance (Lindebaum and Jordan, 2012: 581). In particular, Lindebaum and Jordan (2012: 580-582) contend that differentiating between individual cognitive tasks and tasks that are relational in nature and require interpersonal interaction is expedient for future research.

6. CONCLUSIONS AND RECOMMENDATIONS

All the attributes / states of EI are important in terms of managing construction H&S and they all contribute to optimising, that is best possible H&S performance on construction projects. Therefore, it can be concluded that emphasis needs to be placed on developing the EI of construction managers, commencing during tertiary education, during 'graduate in training', and through continuing professional development (CPD). Furthermore, emphasis needs to be placed on the role of EQ in managing H&S during H&S education and training interventions.

Given the MS and its ranking, problem solving is a critical attribute and needs to be developed. However, the ability to solve problems is impacted upon by other attributes and states such as stress tolerance, reality testing, impulse control, interpersonal relationships, and empathy. In the majority of cases (66.7%), the importance of attributes / states is greater than their contribution. Therefore, reality in

terms of what optimises performance as to what is perceived as being important, differs.

JCPMI Vol. 4 (1): 721 - 733, 2014

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