

**The Effect of Emotional Intelligence on Work Outcomes in
the Construction Industry**

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Abstract

This report identified and reviewed published material on emotional intelligence (EI) and its effect on work outcomes in the construction industry. The primary objective of this systematic literature search and critical review study was to synthesise the research on work outcomes of emotional intelligence (EI) in the construction industry to develop broad and robust conclusions on the state of knowledge. The second objective was to establish what is uncertain, unknown, and controversial and formulate recommendations for future research. The research is necessary because it allows for a bridging of the gap between research and practice. This systematic literature search and critical review focuses on 16 critical peer-reviewed articles that investigated the relationship between EI and work outcomes. The research findings show that EI is significantly correlated with job commitment, job performance, and job satisfaction. The study concludes by discussing the limitations of the literature in EI and recommendations for future research.

Table of Contents

Abstract.....	1
Table of Contents	2
List of Tables	4
List of Figures.....	4
Attestation of Authorship.....	5
Acknowledgements	6
Chapter 1: Introduction	7
1.1 Introduction.....	7
1.2 Construction industry.....	7
1.3 Emotional Intelligence (EI)	8
2.7.2 Importance of EI in the workplace.....	8
1.4 The construction industry and the importance of emotional intelligence.....	10
1.5 Identification of research scope and questions.....	12
1.6 The conceptual framework for connectivity of EI with job commitment, Job.....	13
performance, and job satisfaction	13
1.7 Justification for the research questions	14
1.8 The structure of the research dissertation.....	15
Chapter 2: Review of the Literature	16
2.1 Introduction.....	16
2.2 Emotional intelligence	16
2.2.1 Goleman's EI performance model.....	17
2.2.2 Bar-On's EI competencies model.....	19
2.2.3 Mayer, Salovey & Caruso's ability model.....	21
2.2.4 A critique on the similarities, disparities and controversies of three EI models	24
2.2.5 The importance of Mayer, Salovey and Caruso's EI ability model.....	27
2.3 Work outcomes.....	28
2.3 Job commitment.....	29
2.4 Job performance	30
2.5 Job satisfaction.....	32
2.6 The link between emotional intelligence and job commitment, performance,.....	34
and satisfaction.....	34
2.8 The literature gap	35

Chapter 3: Research Design.....	36
3.1 Introduction.....	36
3.2 Methodology	36
3.2.1 Systematic literature search and critical review	36
3.2.2 Identification of relevant literature	37
3.2.3 Inclusions and exclusions in the systematic review	38
3.2.4 Data analysis, reporting and summarising	40
3.3 Ethics and research validity	46
Chapter 4: Results and Analysis.....	47
4.1 Introduction.....	47
4.2 Methodological quality assessment.....	47
4.4 Geographical setting and research location.....	49
4.5 Themes and categories.....	50
Chapter 5: Discussions	54
5.1 Introduction.....	54
5.2 Literature search on emotional intelligence and work outcomes	54
5.3 Emotional intelligence and job commitment, performance, and satisfaction	56
5.4 Geographical representation and its importance.....	57
5.5 Quantitative research type and emotional intelligence studies	59
5.6 Conceptual and theoretical contribution	60
5.7 EI and other work outcomes	62
5.8 The limitations.....	64
Chapter 6: Conclusion.....	66
6.1 Future research	66
References.....	68

List of Tables

Table 1 Goleman's five components EI model	18
Table 2 Goleman's four components EI model	19
Table 3 Bar-On competency-based EI model.....	20
Table 4 The four branch ability model – Developed version	24
Table 5 The similarities and disparities of the three EI models.....	28
Table 6 Inclusions and exclusions in the systematic review.....	39
Table 7 Systematic review findings on the effect of EI on work outcomes	41
Table 8 Summary of themes and categories	45
Table 9 Categories and no of articles.....	46
Table 10 The Ranking and rating of the journal articles	49
Table 11 Measurements and tools found in the literature search.....	52

List of Figures

Figure 1 A conceptual framework of the current systematic literature study.....	14
Figure 2 Mayer & Salovey four-branch EI abilities model	22
Figure 3 The different stages of the PRISMA flow diagram.....	37
Figure 4 PRISMA flow diagram for literature search	48
Figure 5 Key categories/themes covered in the literature search	51

Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Signature:

Date: 26th August 2021

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Chapter 1: Introduction

1.1 Introduction

In this chapter, I will present a rationale for the systematic literature search and review. Then, I will situate my research in the construction industry, briefly introduce key constructs of the study, and finish with a presentation of the goals of my literature review.

1.2 Construction industry

Emre Aykar, the President of the Confederation of International Contractors Association (CICA), believes that the construction industry has massive prospects, given the forecasted industry growth of 4.3% per annum by 2025 based on emerging economies ("President's Welcome – CICA", 2020). The global construction industry has forecasted annual growth of up to US\$15 trillion by 2025 in comparison to US\$8.7 trillion in 2012, with over 120 million employees attached to the industry ("Global Construction 2030 – CIOB Executive Summary – CIOB Policy", 2020). It is also forecast that the construction industry will account for 14.7% of global GDP by 2030 compared to 12.4% in 2014. In addition, the construction industry employs a significant number of stakeholders (business owners, contractors, employees, suppliers, etc.) and plays a vital role in a country's economy, making every factor associated with the sector important. However, due to the multidisciplinary nature of a construction project, it becomes a challenge for construction staff to comply with each individual's requirements. In this situation, a boost in morale and the development of a supportive framework can improve employee productivity. Macht et al. (2019) argue that the construction industry involves a highly complex, risky workplace with a labour-intensive workforce. Additionally, construction employees are often both emotionally and physically exhausted due to their heavy workload. These challenges lead to a reduced level of commitment as well as satisfaction. This situation has a negative effect on the well-being of construction staff and their efficiency and performance. These concerns are especially relevant in large-scale construction projects, where project size, task interdependency, and increased workloads make work more challenging. Furthermore, Khoso et al. (2017) illustrate that job characteristics tend to influence burnout among construction workers. Hence, decreased well-being and lack of connection with the job are two crucial issues that create significant challenges in the construction sector.

1.3 Emotional Intelligence (EI)

Over the last two decades, emotional intelligence (EI) has earned significant attention and popularity. In 1990, Peter Salovey and John Mayer introduced the term EI firstly. Along with Salovey & Mayer's (1990) publication "Emotional Intelligence" and other research such as Daniel Goleman and Reuven Bar-On have laid a foundation for three significant frameworks for EI. Notwithstanding, all three models describe EI as an ability to understand, appraise, regulate, and communicate individual emotions. Tang et al. (2020) refer to EI as an individual's ability to concisely manage their feelings. However, Daniel Goleman's "Emotional Intelligence" book could be credited for its popularity; Goleman (1998) made strong claims on EI's contribution to individuals, society, and organisations. As a result, EI has become a well-known and familiar concept among academics and organisations (Mayer et al., 2000). In chapter two, Goleman's EI performance model, Bar-On's EI competencies model, and Mayer, Salovey and Caruso's ability model will be presented in detail. An emotionally intelligent person is aware of their own emotions and others. Hence organisations require people with high EI to manage the workforce effectively to achieve organisational objectives (Zhang & Fan, 2013).

Many construction industry supervisors and managers indicate that interpersonal relationship management is "the most difficult or demanding aspect of the job" (Love et al., 2011 p. 55). Most construction firms do not consider any form of EI during the execution of construction projects (Winardi et al., 2021). Hence, developing relationships with employees based on EI, which allow firms to manage and retain employees, is constrained. Several authors have theorized that EI, and particularly the ability to manage and express emotions, is important for leadership (Ashkanasy & Humphrey, 2011; George, 2000). For example, managers and labour supervisors generally possess a significant level of EI. In practice, there is a gap between the expected academic outcome and the actual achievement of EI in the workplace (Lopes, 2016). Because of the above reasons, EI plays a significant role and is essential to organisational success in the construction industry.

2.7.2 Importance of EI in the workplace

Conflicts are unavoidable when people, workplaces, and outcomes are interlinked. Further, conflicts are inevitable and coping with them is not an easy task. Zhang et al. (2020)

maintain that the underlying skills involved in EI include self-awareness, motivation, regulation, social skills, and empathy. Embracing the nuances of human emotion in the workplace can have significant advantages such as effective collaboration, greater productivity, and better employee management. EI's overall benefits are connected to an organisation's work outcomes. The current study focuses more on EI's effects on key work outcomes: JC, JP, and JS in the construction industry. Furthermore, Boyatzis et al. (2017) found that EI-induced leadership significantly differentiates productivity and effective personal relationships. For better clarity and understanding, I have listed the importance of EI on work outcomes below.

It is undeniable that employees' working aspects improve with an increased level of teamwork, especially in places where there is higher EI (Ogunlana et al., 2002). In a workplace where open ideas are treated positively, employees can present their ideas and contribute to innovation (Potter et al., 2018). Potter et al. (2018) further argue that a leader with a high EI quotient can eventually extract more potential of their subordinate by combining the factors of motivation and aspiration. Boosting the morale of individuals with proper emotional support can be considered one of the key benefits of EI. As opined by (Butler & Chinowsky, 2006), a workplace that reflects empathy, respect, and career growth is a desirable environment for individuals. Furthermore, motivation, social skills, and empathy that help create sustainable relationships can be considered crucial factors in increasing employee morale and retention. Apart from managing teams, EI helps in terms of the self-awareness paradigm. Understanding their strengths and weaknesses helps individuals to recognise their growth prospects. Goleman (2021) found that understanding one's own limitations and skills rather than relying on feedback help boost confidence and creates the sense of accomplishment needed for better productivity. Furthermore, the ability to strengthen work prospects and professional relationships and align ideas with actions is dependent on self-awareness. The ability to utilise self-control can assist in handling challenging situations. According to Rezvani et al. (2020), self-control is often weakened during critical conditions such as dissatisfaction from clients, supervisors, or subordinates. In these situations, it is possible to proceed with a calm mind and logically comprehend the outcome through proper EI. Furthermore, having an understanding mind and a calm attitude is necessary for strategic development. People with higher EI levels manage their time more efficiently, enabling them to maximise their productivity (Lee et al., 2018; Salovey & Mayer, 1990).

A team with high EI members eliminates micro-management requirements, saving the leader's time to deal with more strategic matters and decisions. Strong EI within the workplace

means that a firm can effectively achieve business targets and strategic goals. EI helps to improve the productivity of an organisation. Hence, increasing the number of employees with high EI is essential. As well as recruiting high EI individuals, EI training and development helps improve the value of the organisation (Zhang et al., 2015). Lindebaum and Jordan (2012) and Kafetsios et al. (2011) point out that despite the proven benefits of EI, there is still room for development in academic research on EI. The importance and need for EI are even more remarkable when considering the current situation in the world; that is, as a result of the COVID-19 pandemic, work from home and remote working has become the norm. EI can provide practical guidance to adapt to the new normal whilst encouraging further progress effectively.

1.4 The construction industry and the importance of emotional intelligence

Multiple factors drive organisational success in the construction sector, though interpersonal abilities such as emotional intelligence (EI) are often overlooked. Historically, the construction industry has prioritised operational and technical aspects, focusing on processes, products, innovation, and quality systems (Koskela, 2000). However, Koskela (2000) points out that the industry focus has shifted from a traditional operations mindset to an organisational behavioural perspective to solve ongoing HR issues, such as commitment and satisfaction, and improve employee and organisational performance. Zeidner et al. (2004) argue that EI is a growing area of behavioural investigation that is positively related to vocational success, employee satisfaction, emotional health, and well-being (Kotsou et al., 2018). Lindebaum & Cassell (2010) found that emotions are considered a complex subject in the construction industry. Additionally, emotions are generally equated with weaknesses, and their display is often considered inappropriate and unnecessary in a male-dominated industry. It is possible that uncontrolled emotions can create a threat to an engineer's identity and issues regarding effective work performance (Lindebaum & Cassell, 2010). Many individuals believe that in the construction industry, emotion is unnecessary (Winardi et al., 2021). However, against the narrative of resistance and receptiveness to EI, a contrasting aspect has been found. For example, understanding emotions can assist in successful project management.

On the other hand, Lindebaum & Cassell (2010) believe that emotions should not be expressed at work. According to Barreiro & Treglown (2020), since construction activities are project-based, they require the collaboration of professionals from multidirectional fields such

as designers, contractors, and suppliers who work together on a time-bound project to achieve organisational objectives. Emotional skills that deal with performance improvement include consciousness, communicating, and coherently harmonising emotions. New concepts are being discovered regarding EI that can help increase organisational efficiency and management performance (Darvishmotevali et al., 2018). Moon (2020) has demonstrated that EI has a portion of self-control that helps to determine the behavioural aspects that match professional elements. EI provides an individual with the ability to keep disruptive emotions and impulses under control in hostile situations. Understanding others' feelings and showing empathy towards them during a disruptive situation can be achieved with effective EI.

Moreover, applying logical thinking while assessing a challenging situation is another core skill needed to achieve success in this specific context. Additionally, proper EI development helps self-assessment through which impatience triggers can be identified. Within the construction industry context, improvements in innovation-based proceedings and the development of self-awareness and control can help address unlikely situations. According to Macht et al. (2019), Affective Events Theory (AET) helps explain the influence of emotions and moods on job performance and job satisfaction. A development paradigm based on urban renewal has been identified within the construction industry in developing countries. The urgency of construction and the complexity of the construction environment has increased, requiring construction managers to improve their leadership ability alongside adapting to uncertain environments. EI is a crucial component in this context as it helps stimulate a practical work attitude that can help the construction industry (Khoso et al., 2017; Mayer et al., 2016).

The construction industry is perceived as being slow to deploy new techniques, especially people management skills (Winardi et al., 2021). Lopes (2016) maintains that EI is a crucial interpersonal ability with multidimensional benefits, yet it has largely been unexplored in the construction industry. Nevertheless, EI has been shown to be a core factor behind the construction industry's success despite being a relatively new concept. Furthermore, recent research has suggested that EI is a core domain when translated into effective, consistent, and practical competencies (Ashkanasy & Dorris, 2017). In general, people with a higher EI are more likely to interpret other people's thoughts for constructive reasons. However, Tang et al. (2020) stressed, EI has issues such as manipulating people, using others for personal gains and preventing others from using critical thinking skills. There are two main findings related

to the current literature. First, the unavailability and difficulty in finding literature on the effective use of EI for positive work outcomes. Secondly, there is specific difficulty in finding literature related to EI in the construction industry. Researchers (Nelis et al., 2011; Richardson and Rothstein, 2008; Sin and Lyubomirsky, 2009; Durlak et al., 2011) maintain that individuals' EI can be developed to achieve positive results (Lopes, 2016). However, as Lopes (2016) argues, there is a gap between research findings and the actual contribution of EI to work outcomes.

EI has been identified as a key antecedent for job commitment (JC), job performance (JP), and job satisfaction (JS) in the workplace (Lopes, 2016). Meyer et al. (2002) explain that JC is an employee's mental condition that can positively or negatively affect their relationship with the organisation. JP refers to accomplishing work outcomes for a particular job or project that has lasted for a specific duration (Deadrick & Gardner, 2000). Job satisfaction is the positive feeling or likeness of the job or task involved (Jamal Ali & Anwar, 2021). Furthermore, it is argued that organisations that incorporate EI into their organisational development efforts may acquire a competitive advantage in their industry (Côté, 2014). Over two decades, the EI literature has grown, with numerous journal publications, websites, blogs, and testing tools. The four branches model of Mayer et al. (2016) appears to be the most credible academic model in the EI literature. The four branches model is presented in greater detail in the next chapter.

1.5 Identification of research scope and questions

Research questions create a pathway for the study protocol, search criteria, and data extraction (Wright et al., 2007). A well-articulated study protocol ensures the literature review's efficiency and minimises the possibility of bias. A centrally focused research question will assist in a comprehensive literature search process, whilst sub-questions will help the mapping process (Arksey & O'Malley, 2005). The main objective of my research is to analyse the impact of EI on work outcomes in the construction industry. Thus, my research questions are:

Main research question

What is the effect of emotional intelligence (EI) on work outcomes in the construction industry?

Sub questions

1. What are the dominant themes of EI research in the construction industry, including research questions, theoretical frameworks, methods, findings, limitations, and weaknesses?
2. What are the controversial findings, uncertainties, or gaps in EI research in the construction industry?

Firstly, this study will synthesise the available body of evidence on EI and work outcomes in the construction industry to develop broad conclusions on the state of the literature. I will then focus on establishing what is uncertain, unknown, or controversial in the literature to set an agenda for future research. EI is linked to JC, JP, and JS in a competitive workplace (Boyatzis et al., 2017; Lee et al., 2018). Research suggests that the alignment of EI with organisational objectives is associated with organisational success ((Lee et al., 2018; Winardi et al., 2021)).

1.6 The conceptual framework for connectivity of EI with job commitment, job performance, and job satisfaction

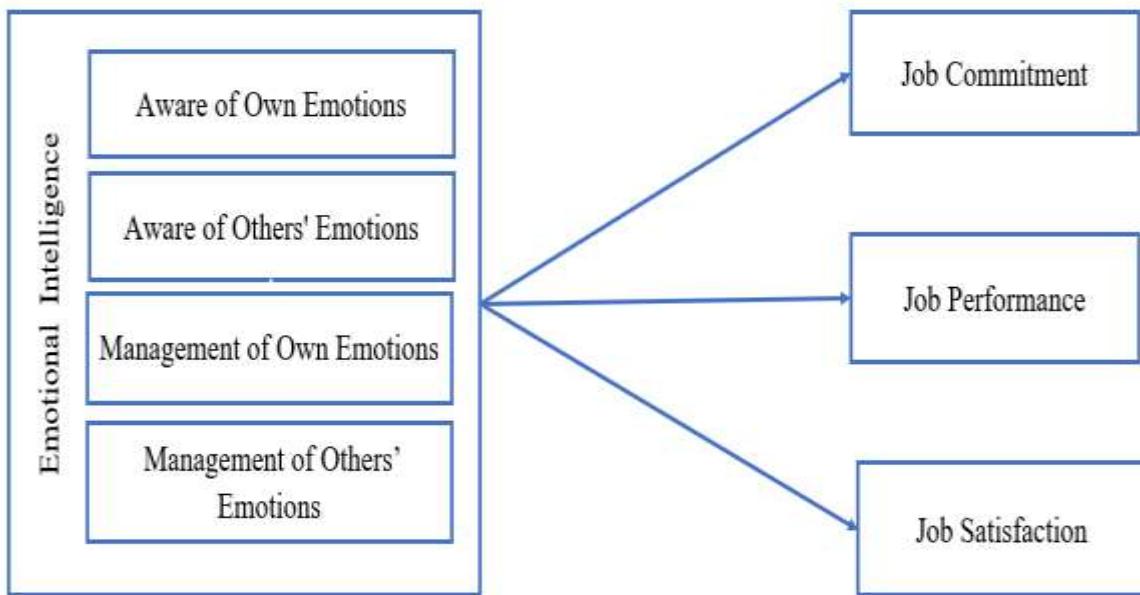
My systematic literature search and review will focus on studies in the construction industry that are at the intersection of EI and the following work outcomes:

1. Job Commitment (JC)
2. Job Performance (JP)
3. Job Satisfaction (JS)

Robinson et al. (2019) point out that the concept of JC is a crucial component of an organisation's strategic development. In addition, the literature points to triangular relationships between JC, JP, and JS (Boyatzis et al., 2017; Lee et al., 2018; Love et al., 2011; Rezvani et al., 2016). EI not only appears to be a significant predictor of JC and JS, but it also has a significant impact on JP. Figure 1 presents a synthesis of the literature in the contexts of JC, JP, and JS. The framework shows (see Figure 1) that EI is directly connected to JC, JP, JS. The framework shows the key components of EI: awareness of own emotions, awareness of others' emotions, management of own emotions and management of others' emotions. JC, JP, and JS are the work outcomes. This concept will be discussed in detail in the next chapter.

Figure 1

A conceptual framework for the current systematic literature search and review



1.7 Justification for the research questions

Lopes (2016) points out the significant gap between academic findings and corporate expectations of EI. My systematic literature search and review will explore the gap between research and practice, the fundamental causes for the gap, and possible corrective measures. Several studies have stressed the benefits of EI in connection with individual employees, supervisors, teams, and organisations. Ashkanasy and Dorris (2017) extend Lopes (2016) by highlighting the vagueness of the existing EI structure notwithstanding the various epistemological studies by researchers in sociology, psychology, anthropology, philosophy, and cognitive science that have covered the "emotion" topic. However, EI is connected to organisational behaviour in numerous ways, and Frost (2004) points out that organisational behaviour researchers are becoming more focused on understanding the emotional aspect of organisational behaviour, leading to corrective actions.

Overall, there is a gap between expected theoretical outcomes of EI and actual workplace achievement (Lopes, 2016). There are two main findings related to the current literature. The first is that it is difficult to find literature on the effective use of EI in the workplace. The second is the scarcity of literature that explores EI in the construction industry

(Mayer et al., 2016). Research suggests that an individual's EI can be trained and developed (Lopes, 2016; Nelis et al., 2011; Richardson & Rothstein, 2008; Sin & Lyubomirsky, 2009; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). However, as Lopes (2016) indicates, there is a gap between EI research and its practical application in the workforce.

The main reason for selecting the current research question is the perception amongst researchers and industry professionals that the construction industry needs more research, education, and investor contribution to developing interpersonal abilities (Songer & Walker, 2004). Songer & Walker (2004) suggest, construction organisations can use EI assessment tools and techniques to improve work outcomes significantly.

1.8 The structure of the research dissertation

This dissertation is organised in six chapters, and I introduce the research and structure of the study in chapter one. Chapter two will present the primary elements of EI and work outcomes in the construction industry. Further, I will review the extant theoretical base for EI in the literature. In chapter three, I present my methods on conducting a systematic literature search and review. In chapter three, I cover research methodology, literature search and selection procedure, literature analysis techniques, inclusion and exclusion criteria, themes, and categories. I also provide a justification for specific decisions made in my study. I also present the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework for my systematic literature search. Finally, the chapter ends with an ethical and validity assessment.

In chapter four, I present the key findings of my literature review. Chapter four covers the data collection, data analysis, methodologies used, quality assessment methods, the research findings related to geographical setting and research locations, themes and categories, and research methods used during the study. Chapter four also describes the measurements and tools used in the literature and found in the literature search. Finally, chapter four presents a foundation for the discussion and conclusion of my literature review.

In chapter five, I discuss the findings and end with study implications and limitations. Chapter six summarises the work performed in the previous five chapters. In conclusion, I insist on the study's key findings in a more profound and compelling approach.

Chapter 2: Review of the Literature

2.1 Introduction

In this chapter, I review EI and discuss how the construct has been conceptualised and researched. I provide and a rationale for the EI model I use, and I present literature on three well-established outcomes of EI: job commitment (JC), job performance (JP), and job satisfaction (JS).

2.2 Emotional intelligence

Spielberger (2004) points out that the concepts and definitions of EI have evolved and developed from Darwin's era to the present. The Encyclopaedia of Applied Psychology (Spielberger, 2004) refers to Goleman's EI performance model, Bar-On's EI competencies model, and Mayer, Salovey, and Caruso's ability model, which explain EI as a range of interconnected sets of cognitive and interpersonal ability. Salovey and Mayer (1990) introduced the first modern EI concept, and many authors have further developed it over the last two decades (Love et al., 2011). Salovey and Mayer (1990) define EI as a sub-set of social intelligence and "the ability to monitor one's own and others' feelings and thoughts to distinguish among them and as guidance of their thinking and actions" (p. 239). Goleman (1995) popularised EI among the public and academia, arguing that EI is more important than Intelligence Quotient (IQ). Bar-On explains EI as a range of interconnected emotional and social competencies and sets of social skills and behaviours that result in behaviours and responses that connect people together whilst managing daily needs, challenges, and pressures. The Bar-On model consists of five component factorial clusters: (i) the skill to understand emotions and to express one's own feelings; (ii) the skill to understand others' feelings and relate to them; (iii) the skill to manage emotions for one's own benefit (iv) the skill to manage change and problem-solve at the individual level; and (v) the skill to create a positive attitude and be self-motivated. Each of these clusters are expanded into 15 factors which will be discussed in next sections.

Today, EI plays a vital role at the individual and organisational level (Cherniss, 2010). EI helps in dealing with numerous issues that employees, shareholders, and directors face every day in organisations. Motivating team members, improving employee retention, enhancing leadership qualities and customer relations are workplace issues that EI can help to resolve. Although EI as a concept is comparatively new to the corporate environment, there is a long record of

academic studies on cognitive, social, and psychological factors in the workplace that can be used to benefit individuals and businesses (Cherniss, 2010).

2.2.1 Goleman's EI performance model

Goleman (1995) popularised EI amongst in the public arena through the publication of his book "*Emotional Intelligence: Why it can matter more than IQ*" (1995). Goleman argues that EI can be more powerful than IQ. While Salovey and Mayer (1990) were the founders of the modern EI concept, Goleman brought EI to the broader attention of the public. Goleman's best-selling book has helped many organisations and individuals achieve business goals and develop management and leadership skills. Goleman broadly divides human emotions into personal skills and social skills. Personal skills describe "how we manage ourselves", and social skills explain relationships. EI is further divided into five segments: self-awareness, self-regulation, and motivation as personal skills and empathy and social skills as relationship management (Goleman, 1995).

Goleman's five components EI model: Goleman extended Mayer and Salovey's (1990) four-branch model into the five-elements EI model (see Table 1). The first element of the model is emotional self-awareness, which explains being aware of and understanding one's own feelings and their impact on others. Second, self-regulation describes an individual's management of their emotions in which they can predict future outcomes without making decisions based on feelings. Third, motivation is the ability to achieve objectives, improve learning and development opportunities, and face challenges without compromising success. Fourth, empathy refers to the ability to understand others' feelings. The final element, social skills, is managing relationships, motivating others, and effectively communicating with others (Goleman, 1995). According to Goleman (1995), EI involves components within an individual that cannot be separated, and which work from the inner self.

Moreover, Goleman strongly argues that EI is more important than general intelligence: IQ. According to Goleman, IQ contributes to only 20% of an individual's success and the balance of 80% is made up of EI. Therefore, an individual's success cannot be guaranteed with a high IQ only (Goleman, 1995).

Table 1

Goleman's five quadrants EI model with emotional competencies (25)

Goleman's 5 Components of Emotional Intelligence and the 25 Emotional Competencies		
Self-Awareness	Observing yourself and recognizing your feelings; building a vocabulary for feelings; knowing the relationship between thoughts, feelings and reactions.	Emotional Awareness: recognizing one's emotions and their effect Accurate Self-Assessment: knowing one's strengths and limits Self-confidence: A strong sense of one's self-worth
Self-Regulation	Managing one's internal states, impulses, and resources	Self-control: Keeping disruptive emotions and impulses in check Trustworthiness: Maintaining standards of honesty and integrity Conscientiousness: Taking responsibility for personal performance Adaptability: Flexibility in handling change Innovation: Being comfortable with novel ideas, approaches and new information
Motivation	Emotional tendencies that guide or facilitate reaching goals	Achievement Drive: Striving to improve or meet a standard of excellence Commitment: Aligning with the goals of the group or organization Initiative: Readiness to act on opportunities Optimism: Persistence in pursuing goals despite obstacles and setbacks
Empathy	Awareness of others' feelings, needs and concerns.	Understanding Others: sensing others' feelings and perspectives, taking an active interest in their concerns Developing others: Sensing others development needs and bolstering their abilities Service Orientation: Anticipating, recognizing, and meeting customers' needs Leveraging Diversity: Cultivating opportunities through different kinds of people Political Awareness: Reading a group's emotional currents and power relationships
Social Skills	Adeptness at including desirable responses in others	Influence: Wielding effective tactics for persuasion Communication: Listening openly and sending convincing messages Conflict Management: Negotiating and resolving disagreements Leadership: Inspiring and guiding individuals and groups Change Catalyst: Initiating or managing change Building bonds: Nurturing instrumental Relationships Collaboration and Cooperation: Working with others toward shared goals Team Capabilities: Creating group synergy in pursuing collective goals

Adapted from *Emotional Intelligence*, by D. Goleman (1995). Bantam Books. Copyright 1995 by D. Goleman.

In 1998, Goleman re-defined his five-factor model into four quadrants: (1) Self-awareness, (2) Social Awareness, (3) Self-management, and (4) Relationship Management (Goleman, 1998). The 25 competencies of the five-factor model shrunk to 20 competencies in the four-quadrant model. The Empathy factor in the previous model becomes an individual competency within the 'social awareness' quadrant. Similarly, the other competencies are re-defined and re-categorised accordingly. Table 2 shows Goleman's Four Component 20 Competencies model.

Table 2

Goleman's four components EI competency model

Goleman's 4 Components of Emotional Intelligence and the 20 Emotional Competencies			
	Self (Personal Competence)	Others (Social Competence)	
	Self-Awareness	Social Awareness	
Recognition	Emotional Self-Awareness Accurate self Assessments Self-confidence	Empathy Service orientation Organisational awareness	
Regulation	Self-Management	Relationship Management	
	Emotional Self-control Trustworthiness Conscientiousness Adaptability Achievement drive Initiative	Developing Others Influence Communication Conflict management Visionary leadership Catalysing change Building bond Teamwork and collaboration	

Adapted from Working with Emotional Intelligence, by D. Goleman (1998). *Bantam Books*. Copyright by D. Goleman.

2.2.2 Bar-On's EI competencies model

According to Bar-On (2010), EI is an array of behaviours led by feelings and social competencies that determine an individual's performance, level of self-awareness and awareness of others, interpersonal relationships, and the ability to manage challenges. The competencies discussed above are categorised into five main components: (1) Intrapersonal,

(2) Interpersonal, (3) Adaptability, (4) General moods, and (5) system management (Bar-On, 2006). Bar-On (2010) argues that EI is a core component of positive psychology. Positive psychology can be defined as the systematic study of positive attributes and forces that drive success. Positive psychology is based on beliefs and life goals that result in successful lives (Bar-On, 2010). Seligman and Csikszentmihalyi (2000) express that high performance, well-being, and success in life are common outcomes of EI and positive psychology. Hence EI and positive psychology maintain a strong relationship with each other.

Table 3

Bar-On competency-based EI model – 5 Scales and 15 sub-components

Bar-On Competency based EI Model	
Main Components	Sub Components
Intrapersonal	Self Regards
	Emotional Self-Awareness
	Assertiveness
	Independence
	Self-Actualisation
Interpersonal	Empath
	Social Responsibility
	Interpersonal Relationship
Adaptability	Reality Testing
	Flexibility
	Problem Solving
System Management	Strees Tolerance
	Impulse Control
General Mood	Optimism
	Happiness

Adapted from 'Emotional Intelligence: An Integral Part of Positive Psychology' by R. Bar-On (2010): *South African Journal of Psychology*. Copyright by R. Bar-On

As shown in Table 3, Bar-On (2010) expands his five main components of EI into 15 subscales as follows: Self-regard, emotional self-awareness, assertiveness, independence, and self-actualisation are found under the main intrapersonal component. The interpersonal component consists of empathy, social responsibilities, and interpersonal relationships. Reality testing, flexibility, and problem-solving are found under adaptability, while system management includes system tolerance and impulse control (Bar-On, 2010). Bar-On (2010) further explains

that categorisation helps positive psychology correctly identify key components and sub-components. In 1997, Bar-on launched his 'Bar-On Emotional Quotient Inventory (EQ-i)', designed to measure the emotional and social competencies discussed in his EI competency model (Gilar-Corbi et al., 2021). Bar-On EQ-i presents 133 measures based on the 5-scale, 15 clusters competency model. 'Bar-On EQ-i: YV' was launched in 2000, while the 360-degree multi-rating version 'Bar-On EQ-360' was published in 2003 (Bar-On, 2006). The Bar-On EQ-i YV was the first psychometric EI competency measuring tool designed for children and teenagers.

Bar-On (2010) and Gilar-Corbi et al. (2021) believe that people with high emotional intelligence are more effective in people management, problem-solving, innovation, resource management, and decision-making and are more enthusiastic and self-motivated. In addition, as shown in Table 3, individuals with high EI are aware of others' emotions, thoughts, and wants, leading to strong relationships. Research has found that the Bar-On EI model significantly relates to JC, JP, and JS (Brown et al., 2006; Dries & Pepermans, 2007; Herbst et al., 2006, 2008; Langhorn, 2004; Thiébaut et al., 2005).

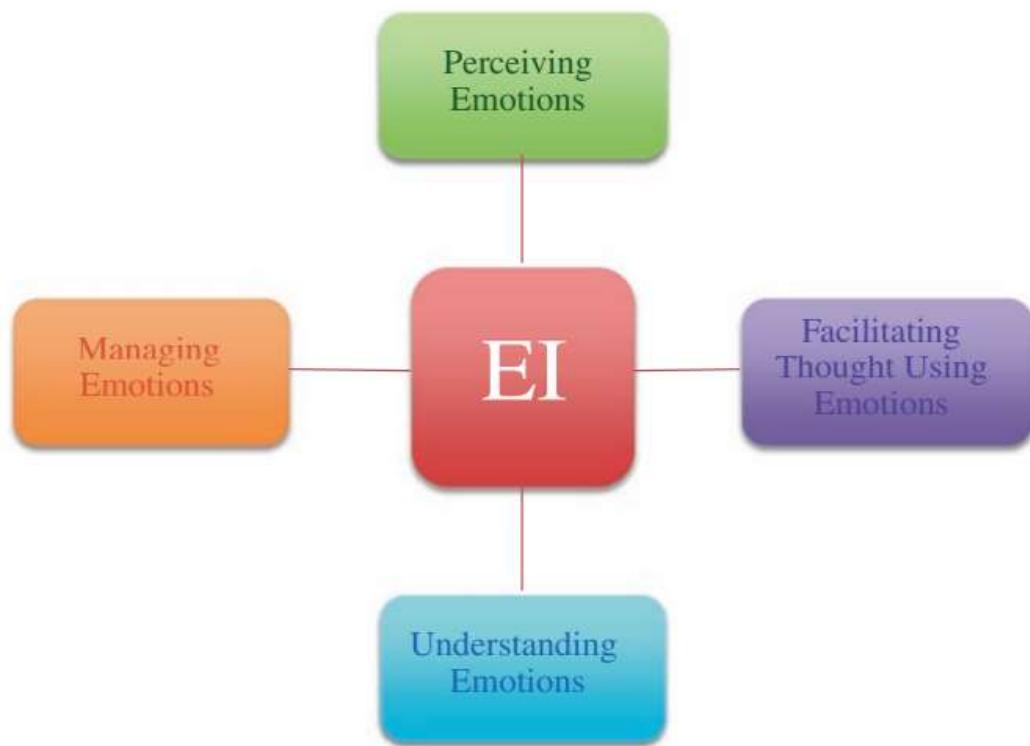
2.2.3 Mayer, Salovey & Caruso's ability model

In their EI ability model, Salovey, Mayer, and Caruso define EI as "the capacity to reason about emotions, and of emotions, to enhance thinking. It includes the abilities to accurately perceive emotions, to access and generate emotions to assist thought, to understand emotions and emotional knowledge, and to regulate emotions to promote emotional and intellectual growth reflectively" (Mayer et al., 2004). In their work, EI is conceptualised into three main segments: appraisal and expression of emotion, regulation of emotion, and utilisation of one's own and others' emotions (Salovey & Mayer, 1990). Mayer et al. (1990) undertook an empirical research study on how EI can be tested as a mental ability. The study found that emotions and cognitions can be combined to perform complex information processes. In 1997, Mayer and Salovey re-defined their EI ability concept into four branches within an EI abilities model and explained EI as a subunit of social intelligence (see Figure 2). They argue that individuals' ability to detect discrepancies is based on emotional experience and information (Mayer & Salovey, 1997). The four branches of the model are: (1) the ability to perceive and express emotions, (2) facilitating thought using emotions, (3)

understanding emotions, and (4) managing emotions (Mayer et al., 2016; Fiori & Vesely-Maillefer, 2018).

Figure 2

The four-branch EI abilities model (Mayer & Salovey, 1997)



Extracted from "Emotional Intelligence as an Ability: Theory, Challenges, and New Directions" by M. Fiori and A. Vesely-Maillefer (2018). *Emotional Intelligence in Education*. Copyright 2018 by Springer, Cham.

Branch 1, perceiving emotions, means the skill to recognise human signals in people's faces, features, and voices through participating, discovering, and interpreting. Perceiving emotions means recognising individuals' physical and psychological status and being empathetic to others' emotions (Mayer & Salovey, 1997; Stough et al., 2009). Branch 2 explains the facilitation of thoughts through the integrating of emotions. The facilitation process involves analysing participation and the contemplation of emotions, which can help with problem-solving, decision-making, and understanding others' perceptions. Branch 3 consists of understanding the relationship between various emotions and how they change situationally

over time. Understanding emotions involves knowledge of emotion from different aspects, using the knowledge to recognise tiny discrepancies in emotion and explain the various combinations of emotions. Identifying complicated combinations of emotions and predicting others' expressions reflects a more robust understanding of emotions (Mayer et al., 2003 and 2016; Fiori & Vesely-Maillefer, 2018).

Branch 4 explains the capacity to administer to one's own and others' emotions successfully. Managing emotions requires the ability to handle emotional responses in any circumstance. Staying positive in challenging times and focusing on critical decision-making are characteristics and reflections of managing emotions. Individuals with high management of their emotions help to create enthusiasm and motivation among team members. Emotion management also helps an individual recover quickly from anger (Fiori & Vesely-Maillefer, 2018). Mayer et al. (2016) further explain that the branches represent a skill set that develops from basic to more mature skills.

Thus, the Mayer-Salovey-Caruso ability model has become popular and frequently used by academics (Prentice, 2019). Prentice (2019) further points out that the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), built on the foundation of the four-branch EI abilities model, has been found to be reliable by both scholars and practitioners. Joseph and Newman (2010) argue that factors in branches 1, 3, and 4 of the model match MSCEIT reasonably well; however, branch 2 – facilitating thoughts – does not match MSCEIT.

Table 4 summarises the four-branch model, showing a combination of the original and modern developed versions. The right column of Table 4 illustrates various interpretations that describe each branch. The table follows the bottom-up (top) approach where the basic skills are located at the bottom, and the more complicated and mature skills develop to the top of the structure. Mayer et al. (2016) identified several important areas that were overlooked in 1997. In the new version (Mayer et al., 2016),

- (1) more focus is given to solving problems
- (2) EI is regarded as a more comprehensive and dynamic factor than other forms of intelligence such as personal and social, and
- (3) re-examine the theoretical facets of the EI ability model, develop the effectiveness and analyse the implications.

Table 4

The Four branches emotional intelligence ability model – The developed version

The Four Branches	Types of Reasoning
4. Managing emotions	Effectively manage others' emotions to achieve a desired outcome
	Effectively manage one's own emotions to achieve a desired outcome
	Evaluate strategies to maintain, reduce, or intensify an emotional response
	Monitor emotional reactions to determine their reasonableness
	Engage with emotions if they are helpful; disengage if not
	Stay open to pleasant and unpleasant feelings, as needed, and to the information they convey
3. Understanding emotions	Recognize cultural differences in the evaluation of emotions
	Understand how a person might feel in the future or under certain conditions (affective forecasting)
	Recognize likely transitions among emotions such as from anger to satisfaction
	Understand complex and mixed emotions
	Differentiate between moods and emotions
	Appraise the situations that are likely to elicit emotion
	Determine the antecedents, meanings, and consequences of emotions
2. Facilitating thought using emotion	Label emotions and recognize relations among them
	Select problems based on how one's ongoing emotional state might facilitate cognition
	Leverage mood swings to generate different cognitive perspectives
	Prioritize thinking by directing attention according to present feeling
	Generate emotions as a means to relate to experiences of another person
1. Perceiving emotion	Generate emotions as an aid to judgment and memory
	Identify deceptive or dishonest emotional expressions
	Discriminate accurate vs. inaccurate emotional expressions
	Understand how emotions are displayed depending on context and culture
	Express emotions accurately when desired
	Perceive emotional content in the environment, visual arts, and music

Extracted from “The Ability Model of Emotional Intelligence: Principles and Updates” by Mayer et al. (2016). *Emotions Review*. Copyright 2016 by Mayer, Salovey, and Caruso.

2.2.4 A critique on the similarities, disparities, and controversies of three EI models

In this section, I highlight the element of similarities and disparities between Goleman's EI performance model, Bar-On's EI competencies model, and Mayer, Salovey & Caruso's ability model. I also discuss their strengths and weaknesses found during the literature review. McCleskey (2014) highlights that EI has unique controversies and discrepancies in social sciences, based on three fundamental principles. Gutiérrez-Cobo et al. (2017) argue that EI has become a primary subject of much research since EI was introduced by Salovey and Mayer (1990). Razzaq et al. (2016) highlight that the fast-growing interest encourages investing in research, leading to new models, theories, and tools whilst the systematic and comprehensive scientific approach would be compromised.

Goleman (1995) expresses EI as a cluster of skills and competencies that develops the five capabilities: self-awareness, self-regulation, motivation, empathy, and social skills and extended into 25 competencies. However, Mayer et al. (2000) highlight that Goleman moves away from EI to something far broader because Goleman states that "ego resilience is quite similar to EI and includes a social competency" (Goleman, 1995a, P. 44). Goleman further expresses that, "there is an old-fashioned word for the body of skills that emotional intelligence represents: character." Additionally, Goleman (1995) creates exceptional credits for the predictive rationality of his mixed model, stating EI will account for success at home, at school, and at work. According to Bar-On (1997), EI is an organised and interconnected behaviour determined by emotional and social competencies that affect performance and behaviour. Bar-On's model's structure is based on the literature and its author's research experience as a clinical psychologist (Bar-On, 1997). The concept was theoretically developed from logically clustering variables and identifying underlying key factors to determine effective and successful functioning and positive emotional health (Bar-On, 1997). Mayer et al. (2000) highlight that despite the breadth of Bar-on's model (1997), Bar-on is relatively cautious in his claims for his model of EI. Although his model predicts success, this success is "the end-product of that which one strives to achieve and accomplish..." Moreover, his EI inventory relates to "the potential to success rather than success itself" At a broader level, Bar-On believes that EQ, along with IQ, can provide a more balanced picture of a person's general intelligence (Bar-on, 1997, P.19).

Ability theorists of EI, who advocate performance-based scales of EI, believe that EI is a pure intelligence model and assert it as a subset of the broader domain of intelligence (Razzaq et al., 2016). The measure based on an ability model like MSCEIT by Salovey and Mayer (1990) focuses on responses with correct or incorrect answers, as they are based on the capacity of the respondents to perform specific mental tasks (Razzaq et al., 2016). The proponents of ability measures claim that EQ is a type of intelligence; therefore, the scales used are based on objective performance; for instance, identifying the emotion in a simulated context and then evaluating the answers against criteria that can determine the EQ (Mayer, Salovey, & Caruso, 2004). Table 5 shows the three models that represent EI in different ways. Both Bar-On (1997) and Goleman (1995) represent the mixed models of EI that are significantly different from the ability model.

Table 5*The similarities and disparities of the three EI models*

Mayer & Salovey (1997)	Bar-On (1997)	Goleman (1995)
Overall Definition EI is the set of abilities that account for how people's emotional perception and understanding vary in their accuracy. More formally, EI defines as the ability to perceive and express emotion, assimilate emotions in thought, understand the reason with emotion, and regulate emotions in the self and others (Mayer & Salovey, 1997)	EI is an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 1997, P. 14)	The abilities called here EI, which included self-control, zeal and persistence, and the ability to motivate oneself (Goleman, 1995a, P.xii). There is an old-fashioned word for the body of skills that EI represents: character (Goleman, 1995a, P. 28).
Major areas of skills and specific examples Perception and Expression of Emotions ▪ Identifying and expressing emotions in one's physical states, feelings, and thoughts ▪ Identifying and expressing emotions in other people, artworks, language, etc Assimilating Emotion in Thought ▪ Emotions prioritize thinking in productive ways ▪ Emotions generated as aids to judgment and memory Understanding and Analysing Emotion ▪ Ability to label emotions, including complex emotions and simultaneous feelings ▪ Ability to understand relationships associated with shifts of emotion Reflective Regulation of Emotion ▪ Ability to stay open to feelings ▪ Ability to reflectively monitor and regulate emotions to promote emotional and intellectual growth	Interpersonal Skills ▪ Emotional self-awareness ▪ Assertiveness ▪ Self-regard ▪ Self-actualization ▪ Independence Interpersonal Skills ▪ Interpersonal relationships ▪ Social responsibility ▪ Empath Adaptability Scales ▪ Problem-solving ▪ Reality testing ▪ Flexibility Stress Management Scales ▪ Stress Tolerance ▪ Impulse ▪ Control General Mood ▪ Happiness ▪ Optimism	Knowing One's Emotions ▪ Recognizing a feeling as it happens ▪ Monitoring feelings from moment to moment Managing Emotions ▪ Handling feelings, so they are appropriate ▪ Ability to soothe oneself ▪ Ability to shake off rampant anxiety Motivating Oneself ▪ Marshalling emotions in the service of a goal ▪ Delaying gratification and stifling impulsiveness ▪ Being able to get into the flow state Recognizing Emotions in Others ▪ Empathic awareness ▪ Attunement to what others need or want Handling Relationships ▪ Skill in managing emotions in others ▪ Interacting smoothly with others
Model Type Ability Model	Mixed Model	Mixed Model

Extracted from "Models of emotional intelligence" by Mayer, J., Salovey, P., & Caruso, D. (2000). In R. Sternberg, *Handbook of Intelligence* (pp. 396-420). Copyright 2000 by Cambridge University Press.

Notwithstanding the discrepancies between these models, their outcomes have contributed to EI related work. Thus, researchers have linked higher EI scores to job commitment, job performance, and job satisfaction (Boyatzis et al., 2017; Koopmans et al., 2011; Lopes, 2016). However, the relationship between EI and cognitive tasks is not captured by any of these

models. EI represents both mental ability models and mixed models. The mental ability model focuses on emotions and their interactions with thoughts (Mayer & Salovey, 1997; Salovey & Mayer, 1990).

2.2.5 The importance of Mayer, Salovey and Caruso's EI ability model

Mayer, Salovey, and Caruso's model have been recognised as an EI model that measures EI as an ability (Fiori & Vesely-Maillefer, 2018). Fiori and Vesely-Maillefer (2018) further point out that MSCEIT was created by the researchers based on their ability model, and it enables the testing of all four branches of the ability model in a single assessment. In addition, MSCEIT-YRV is another significant feature that allows the assessment of children and teenagers using the same four branch EI ability model (Mayer et al., 2005; Rivers et al., 2012). Mayer and Salovey (1997) explain that the ability model identifies EI as a distinctive set of emotional capabilities that are significantly correlated, inter-connected with other existing intelligence, and grown with age and experience.

A study by Mayer et al. (2016) re-examined the ability model's academic perspective and developed it to enrich its effectiveness and implications. Further to the findings of the study, they modified the four-branch model slightly and highlighted the seven principles that distinguish the EI ability model from other EI models : (1) EI is a mental ability; (2) EI is best measured as an ability; (3) intelligent problem solving does not correspond neatly to intelligent behaviour; (4) tests that involve problem-solving should be used to measure human mental abilities; (5) valid tests have well-defined subject matter that draws out relevant human mental abilities; (6) EI is a broad intelligence; and (7) EI is a member of the class of broad intelligence focused on information processing (Mayer et al., 2016). Mayer et al. (2016) also reviewed the four branches of the 1997 model and reintroduced them from a fresh perspective. The key changes implemented were as follows: (1) introducing more abilities to the model; (2) more strongly associating EI with general intelligence; (3) clarifying abilities related to EI based on the problem-solving criteria presented in the four-branch model; (4) studying the problem-solving aspect; and (5) clarifying the difference between problem-solving and psychological abilities (Mayer et al., 2016).

As presented in Table 4, Mayer et al. (2016) included more elements in each branch and revised the current content of the model, as seen in the right column of Table 4. The left column represents the four main branches, from perceiving emotions to managing emotions. In

addition, they added several problem-solving skills to the new version that they overlooked initially. For example, emotional appraisal and emotional forecasting were added to "understanding emotion". In their early publications, Mayer and Salovey defined "EI as similar to social intelligence"; subsequently, "EI is unique and cannot be measured by other intelligence studies" (Mayer & Salovey, 1990, 1993). However, according to Mayer et al. (2016), EI is a member of an intelligence group of which social intelligence and personal intelligence are also group members. Mayer, Salovey, and Caruso argue that EI, personal intelligence, and social intelligence are parallelly connected. All three play a vital role in a person's mental interpretation of a situation in a similar complex manner. Educating people to use a formal problem-solving structure is essential in improving their ability to analyse the reasons involved in problem-solving. Mayer et al.'s (2016) ability model illustrates the units, users, and solutions in each situation that people employ to analyse and resolve a problem. However, the researchers highlight that MSCEIT, and its related products are available only on a commercial basis, for which reason they sought to develop alternative tools and measures which have free access (Fiori & Antonakis, 2011; Fiori & Vesely-Maillefer, 2018; Joseph & Newman, 2010).

2.3 Work outcomes

Kalanov (2020) defines work as the actions of humans or manageable machines, or equipment invented by humans. Work should be a realistic, justifiable, purposeful, and result-oriented task that reveals information and a material change of reality. Work would not be possible if intellect, energy, and materials were unavailable (Kalanov, 2020). In other words, work is a task-based activity that employees invest their resources, time, and efforts into. Work tasks mostly create deliverables and business results for an organisation, although some results may not be tangible. The results and outputs of any task can be considered as outcomes. The outcomes are critical to any organisation and are one way of evaluating the organisation's success. Khosravi et al. (2020) suggest that EI helps individuals feel and express emotions systematically. Consequently, employees' positive work-related insights and attitudes are generally developed through EI, producing mutual benefits (Khosravi et al., 2020). For instance, a positive work attitude motivates employees to be more productive, and motivated employees tend to reflect better productivity. Thus, strengthening a positive work attitude creates benefits for employees as well as the organisation. EI is widely recognised as a valuable

interpersonal ability that assists in managing work outcomes. Moreover, JC, JP, and JS are keyways of measuring work outcomes and play a vital role in organisational success.

2.3 Job commitment

Job commitment (JC) is the psychological engagement of an individual within an organisation and their focus on tasks or personal success (Dolan et al., 2005). Luthans (2005) suggests that JC is related to the thought processes of employees and their dedication to the organisation. Employees' JC is an important component of organisational success (Fugate et al., 2009). JC drives employees to perform their duties to an outstanding level, resulting in improved organisational performance (Bragg, 2002). JC is therefore directly connected to organisational performance and is critical for competitive challenges (Dolan et al., 2005; Fugate et al., 2009).

Rathore et al. (2017) explain that commitment to work can be defined as employees' enthusiasm towards their designated tasks. The feeling of responsibility that employees have towards a specific goal and their support for an organisation's mission, vision, and management can be instrumental in strategic development. Generally, managing JC helps to achieve JS (Rathore et al., 2017). When an organisation becomes JC enriched, an effective workplace, innovative leadership, and high-performance goals are achieved. As EI assists in effectively achieving these core organisational objectives, it can be considered a crucial component for further strategic development (Zaman et al., 2020). High levels of organisational commitment can eventually be achieved once employees are satisfied with their existing job roles. Xiong Chen & Aryee (2007) argue that JC is an important tool in achieving goals and continuous improvement. JC plays a vital role as a bond of success between the employee and employer (Rajak & Pandey, 2017). The three-segment commitment model of Meyer and Allen (1997) expressed three types of commitment bonds that could build between employees and organisations: (1) affective commitment, (2) continuance commitment and (3) normative commitment (Rajak & Pandey, 2017).

Affective commitment describes an employee's emotional bonding with the organisation and its objectives, particularly the individual's engagement with organisational goals (Xiong Chen, & Aryee, 2007). According to Mathews and Shepherd (2002), affective commitment can be further described by three factors: (1) acceptance of organisational objectives and principles, (2) the passion for achieving organisational goals, and (3) the desire

to continue as a part of the organisation. In other words, affective commitment is employees' dedication to organisational objectives for their own advantage (Mathews & Shepherd, 2002). Continuance commitment refers to the cost incurred if an individual leaves the organisation (Xiong Chen & Aryee, 2007). Meyer et al. (2002) argue that individuals with continuance commitment stay with an organisation only because they do not have any other suitable options. Continuance commitment involves a calculated risk as the employee knows the cost and risk if separated from the organisation. Normative commitment refers to an individual's moral obligation towards the organisation's foundation (Rajak & Pandey, 2017). In other words, normative commitment refers to employees' understanding of organisational expectations in terms of their duties and responsibilities Rajak and Pandey (2017) further explain that normative commitment is a personal dedication to perform or an emotional promise to their working culture.

2.4 Job performance

Koopmans et al. (2011) classify JP as the quantitative and qualitative contribution of the workforce to the organisation either on an individual or team basis. Deadrick and Gardner (2000) define JP as accomplishing job results in a stipulated time frame. Thus, JP is a multidimensional factor that helps to determine organisational success and outcomes. In the early stages, JP was classified into two aspects: extra-role behaviours and in-role behaviours (Katz & Kahn, 1978). Borman and Motowidlo (1997) then categorised JP into two components: (1) task performance and (2) contextual performance. Employees' accomplishment of set objectives through a change in behaviours is defined as task performance within an organisation. Contextual performance is the extra commitment and contribution towards achieving organisational goals. Contextual performance can be visualised as employees' enthusiasm, engagement, and collaboration towards organisational benefits. Contextual performance presented in the form of tasks, behaviours, and attitudes in the institutional, community, and emotional context is critical for organisational success (Deadrick & Gardner, 2000; Koopmans et al., 2011). Subsequently, Koopmans et al. (2011) further developed the contextual performance concept by introducing adaptive performance and counterproductive work behaviour (CWB). Adaptive performance refers to employee traits such as innovation, creativity, problem-solving, citizenship, etc. CWB describes employees' activities and behaviours that negatively affect organisational well-being and harmony (Lubbadeh, 2021). Lubbadeh (2021) provide examples of CWB that include property damage, theft, complaints,

and spreading negative perceptions including gossiping, insulting management and team members, and harassing. CWB has significant financial consequences whilst negatively affecting employee and organisational productivity. Cohen and Diamant (2017) further express that CWB could reduce JC and JS whilst increasing job stress and individuals' desire to quit the organisation. Management and employees should take corrective actions to prevent CWB within their organisation for the benefit of both parties (Cohen & Diamant, 2017).

JP can increase through understanding emotional patterns, managing emotions, motivating individuals, recognising emotion in others, and handling relationships (Goleman, 1996; Salovey & Grewal, 2005). Furthermore, employees reflect this motivation through higher work-based activities. Strong employee motivation can create a positive work environment. Performance in jobs involving multiple tasks and project-based work, such as in the construction industry, is challenging to measure. Therefore, project performance is measured instead, whereby the project team's JP is judged through specific performance measuring criteria (Deadrick & Gardner, 2000). The range of criteria is used to measure the project team (as individuals and as teams) outcomes on an assignment basis as each project is identical in both nature and performance. Therefore, JP can be seen as an individual's overall performance or performance in specific dimensions, such as the quality and quantity of work (Meyer et al., 2002). When viewed this way, JP in construction industry can be measured using various criteria describing an employee's performance pattern over each project or a batch of projects undertaken simultaneously. Each construction project is distinctive in terms of construction parties, project specifications, and contract types. Additionally, employees can eventually achieve effective communication and proper performance recognition with increased employee motivation, leading to trust and mutual respect between employees with greater EI involvement. Construction projects tend to have long working hours, immense work pressure, and complex tasks (Tang et al., 2020). Therefore, managers and supervisors in the construction industry need to possess a certain level of EI as it can assist in multiple situations, from uniting the project members to developing team cohesion (Suwandana, 2019). In general, creating a positive emotional experience tends to lead to positive JP. On the other hand, adverse emotional events reduce employee enthusiasm to work and decrease performance (Darvishmotevali et al., 2018). The analysis shows that JP is directly associated with supervisors' or managers' EI competency levels.

JP can accelerate based on essential elements such as knowing emotional patterns, managing emotions, motivating individuals, recognising emotions in others, and handling

relationships (Goleman, 1996; Salovey & Grewal, 2005). Furthermore, employees reflect their motivation through increased work-based activities. Strong employee motivation can create a positive work environment. However, because of the complexity of the construction industry, the essential elements of employee performance improvement are generally not focused on (Suwandana, 2019). Additionally, effective communication and proper performance recognition can be achieved through increased employee motivation, and trust and mutual respect between employees with a greater EI involvement can ultimately be developed. Shih and Susanto (2010) found that EI is positively and significantly correlated with JP. This finding is supported by empirical evidence (Goleman, 1998; Mayer et al., 2000; Wong & Law, 2002; Jordan & Troth, 2002; Yu et al., 2006).

Zhang et al. (2015) also found that EI is an essential predictor of employees' innovation performance. EI is significantly associated with workplace outcomes such as JP management (Ma et al., 2019; Ayoko & Konrad, 2012; Moeller & Kwanten, 2015; Flores et al., 2018; Lee and Wong, 2017). Research has found that EI has a significant impact on JP (Shih & Susanto, 2019), innovation performance (Kumari, 2015; Zhang et al., 2015), counterproductive work behaviour (Ma et al., 2019), schedule flexibility (Magnini et al., 2011), and diverse cultural workgroups (Ayoko & Konrad, 2012; Kaushal & Kwanten, 2006).

2.5 Job satisfaction

Job satisfaction (JS) refers to the positive work mindset that reflects a congruence between an individual's anticipation and the benefits received from the job (Paul et al., 2021). Wang and McChamp (2019) point to the first definition of JS provided by Hoppock (1935, p. 47) as "any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, 'I am satisfied with my job'." Meier and Spector (2013) define JS as simply an individual's favourable or unfavourable judgment on the job. They discuss three main approaches to JS: (1) dispositional approach (person), (2) situational approach (environment), and (3) interactionist approach (interplay and match of dispositional and situational). Further research has provided scales to measure JS: (1) global job satisfaction scale (GJSS) and (2) composite job satisfaction scale (CJSS) (Dalal, 2013). GJSS covers general and overall job satisfaction and captures multiple job satisfaction facets by summing employees' scores. GJSS consist of six criteria that broadly measure JS without considering any specific facet of JS. Bowling and Zelazny (2021) argue that global job satisfaction is significantly

correlated with affective commitment and organisational performance while negatively correlated with continuance commitment and employee turnover. Facet satisfaction scales investigate the specific components of jobs and employees' satisfaction towards these jobs. In general, facet job satisfaction is measured by five facets: work itself, supervision, co-workers, pay, and opportunities for promotions (Dalal, 2013).

JS amongst employees is generated by different components such as payment, opportunity advancement, autonomy, recognition, and meaningful career growth. However, in the construction industry, no such developmental paradigm can be achieved due to the stagnant nature of the industry. Moreover, the technological diffusion rate, which boosts advancement in different fields, is significantly low in the construction industry (Tang et al., 2020). Thus, the level of job satisfaction is in the low-to-medium segment. Furthermore, as job satisfaction is closely related to commitment, issues regarding employee loyalty in the industry tend to occur (Tang et al., 2020). Moreover, career growth opportunities in the industry are not high, which can be highlighted as another critical issue of strategic development. Fisher (2003) argues that JS is significantly correlated with employee motivation and eventually with JP. JS builds a motivated team that can contribute to the organisations' common interests. Once a construction supervisor or manager is satisfied, they will motivate their teams to develop more engagement, enthusiasm, and involvement with their teams. Coordination with stakeholders becomes more effective and efficient with better communication and awareness of the context (Fisher, 2003; Cheung et al., 2003; Pheng & Chuan, 2006). Individuals or teams with high JS tend to resolve problems effectively and set SMART objectives (Cheung et al., 2003; Maylor et al., 2008). In contrast, lower JS can lead a business into a high-risk area. Little or no motivation, effort, efficiency, or commitment can lead to project failures (Judge et al., 2001). Rezvani et al. (2016) found that managers and supervisors with little or no JS are hesitant in communicating with stakeholders and cannot align strategies and organisational goals. Job satisfaction is a work attitude that provides positive outcomes, and managers and supervisors with high EI levels are attracted to the construction industry (Rezvani et al., 2016). Rezvani et al. (2016) highlight that the top management of the organisations should understand the importance of maintaining a high level of job satisfaction amongst construction staff. Training and development play a broader role in providing the necessary development support to staff (Harris et al., 2009). Peer-reviewed studies have constantly highlighted that EI significantly affects employees' job satisfaction (Barczak et al., 2010; Christie et al., 2015; Kafetsios & Zampetakis, 2008; Sy et al., 2006). In the construction industry, managers and supervisors with

a high level of EI are able to manage their stress, disappointments, frustrations, job burnout, etc., successfully (Wong & Law, 2002). Furthermore, managers and supervisors who have experienced the complexity and the difficulties of the construction industry are able to manage their emotional outbreaks in a more productive and positive way (Sy et al., 2006; Wong & Law, 2002).

2.6 The link between emotional intelligence and job commitment, performance, and satisfaction

JP and JC are strongly associated, and employees loyal to a specific company are more enthusiastic, which improves their engagement (Tang et al., 2020). Thus, EI's association with JC can eventually lead to strategic development. Employee motivation through a particular kind of inducement towards strategic development ultimately needs to be managed by leaders. EI not only has a significant impact on work engagement, but it also appears to significantly impact job success and satisfaction. By involving the core factors of trust, career growth opportunities, healthy working environment, respect, pay and benefits, employee job satisfaction can be positively managed (Zhang, Cao, & Wang, 2018). Maslow's hierarchy of needs model states that motivation and employee confidence can be achieved once physiological, safety, and belongingness needs have been met (Rezvani et al., 2019). Furthermore, (Zhang et al. (2020) illustrate that job satisfaction increases with greater job performance. Additionally, individuals tend to appraise emotions and recognise the specific emotions needed for problem-solving. Nevertheless, expressing emotions, emotional regulation, and the use of emotional contexts can be problematic in the construction industry. Workforce shortages, stagnant productivity levels, safety, and lack of technology adoption can be considered crucial challenges that tend to hinder employee performance in the construction industry. Moreover, if the need for self-fulfilment is not met, issues regarding job satisfaction tend to arise. Therefore, it can be stated that a variety of factors affect people's ability to manage their personal and professional lives successfully. Recent studies have found that the effect of individuals performing various tasks within an organisation is much greater than the impact of tools and technology alone (Pekaar et al., 2017). Though EI is a relatively new approach, it has been proven to predict the progress of construction projects and increase project efficiency. Human factors are the driving force behind any organisation, and the EI competencies of project teams and subordinates are crucial to the effective completion of construction projects. According to (Barreiro & Treglown, 2020), EI is twice as critical as Intelligent Quotient (IQ)

as it is a mostly abstract concept. EI is a crucial factor in the well-being of construction industry employees. Since employees want guidance and empathy from their employers, managers have the power to influence their emotions and attitudes. As a result, managers can promote motivation and positivity, which leads to improved outcomes. However, this study found that EI research has focused more on internal organisational processes such as JC, JP, JS, absenteeism, innovation, burnout, and conflicts, instead of considering customer relationships, sales and marketing, supply chain, etc.

2.8 The literature gap

Even though many studies have examined the context of EI, specific reference to the construction industry is lacking. Most of the studies in this chapter discuss the overall context of EI without focusing on the construction industry. Those studies that do refer to the construction industry focus on a specific country, which creates the issue of matching the contexts. However, analysis of these gaps has shown that finding first-hand data about EI in the construction industry is strongly required.

Chapter 3: Research Design

3.1 Introduction

Chapter three details the methods used in the systematic literature search. I detail the databases used, inclusion and exclusion criteria, and analytical processes. The chapter ends with an ethics and research validity discussion.

3.2 Methodology

3.2.1 Systematic literature search and critical review

This research uses a systematic literature search and a critical review methodology which enables a researcher to collate knowledge on a specific research question by referring to multiple studies and study types (Grant and Booth, 2009). The systematic literature search is a popular research technique for data gathering, analysis, and systematically combining research findings that focuses on empirical studies (Whittemore & Knafl, 2005).

The aim of this literature review is to examine in depth, a broad subject area from different angles (Grant & Booth, 2009). Grant and Booth (2009) explain that a literature review highlights resources that may be of use to current or future research. The critical evaluation of literature published on a selected subject matter is different from a standard written document. Callahan (2014) describes the characteristics of a good literature review as encompassing the five "Cs: concise, clear, critical, convincing, and able to contribute to the body of knowledge". A sound systematic literature review collates and combines research evidence on current knowledge and practices, identifies knowledge gaps, and makes suggestions for future researchers (Grant & Booth, 2009; Harari et al., 2020). The primary purpose of this systematic literature review is to gather available literature on the work outcomes of EI in the construction industry.

A systematic review is a more substantial review that is well organised (Briner & Denyer, 2012). In a systematic literature review, it is important to use methods that are transparent and reproducible.

3.2.2 Identification of relevant literature

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework is used for the literature review. The PRISMA flow diagram (see Figure 3) shows the step-by-step process in the systematic literature search (Moher Liberati et al., 2009).

To support the review process, I conducted a systematic literature search on EI's effect on the construction industry's work outcomes. I further narrowed the work outcomes into three main sub-segments: Job commitment, performance, and satisfaction. The AUT librarian's support sought to determine the relevant literature for the review and finalise the electronic library databases. I also maintained consistency in the literature search terms and databases used during the literature search process (Arksey & O'Malley, 2005). Initially, I planned to use the following databases: Scopus, EBSCO, Emerald, and Google Scholar. However, I limited my search to Scopus and EBSCO. It was noticed that the same articles were repeated in several databases. I found Scopus and EBSCO provided a sufficient number of articles that were relevant to the research question. I used Google Scholar frequently as a support and backup database to search keywords, titles, and the authors of the articles. I did not include Google Scholar in the PRISMA search diagram to minimise complexity and confusion.

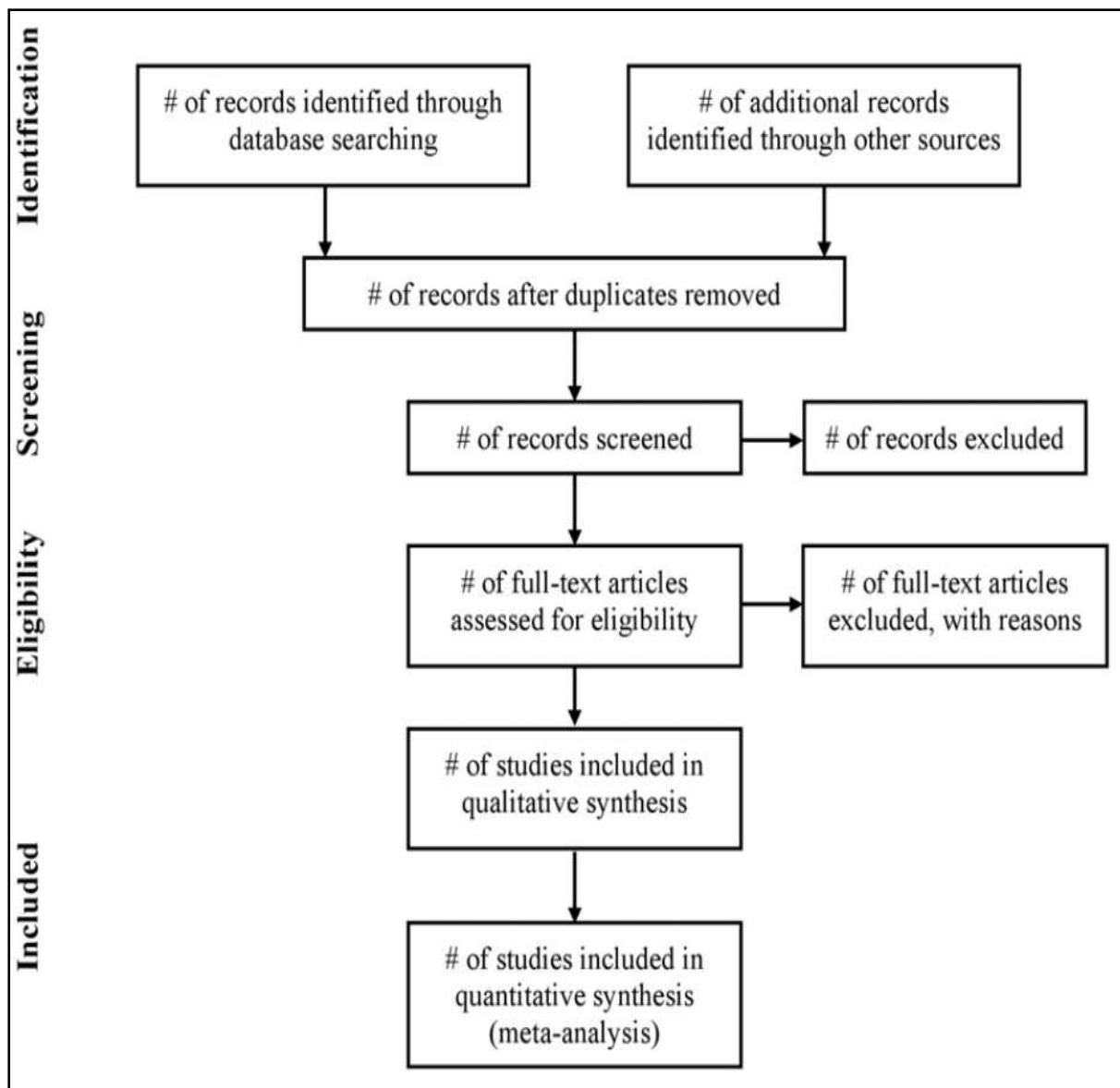
Thomé et al. (2016) recommend seven steps in the PRISMA flow diagram as part of the search and selection process. The seven steps are as follows that I followed during the systematic and critical review:

- (i) Bibliographic database or journal selection
- (ii) Keywords search
- (iii) Review of selected abstracts
- (iv) Application of criteria for inclusion/exclusion of studies
- (v) Full-text review of selected papers
- (vi) Backward search
- (vii) Forward search in retrieved papers

Wright et al. (2007) also recommend reviewing the articles' reference lists for more articles relevant to the research question.

Figure 3

The flow of articles through the different stages of the PRISMA flow diagram



Note. Sample flow diagram of Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement by Moher et al., 2009. Copyright 2009 by Moher et al. T.

3.2.3 Inclusions and exclusions in the systematic review

The inclusion and exclusion criteria play a vital role in systematic reviews (Briner & Denyer, 2012). At the design stage of the search strategy, I defined the inclusion factors for the literature review. Similarly, I determined the exclusion factors of the literature search. The inclusion and exclusion factors considered are shown in Table 5.

Table 6

Inclusions and exclusions in the systematic review

Literature Search - Inclusion and Exclusion Criteria	
Inclusion Criteria	<ul style="list-style-type: none"> ▪ Academic journal articles Written in English ▪ Published between 2000 and 2021 ▪ Emotion/s, emotional, emotional intelligence, emotional quotient, EI, EQ and work outcomes, ▪ Construction/s, building material, civil, engineering, civil engineering ▪ Employee commitment, job commitment, work commitment ▪ Employee performance, job performance, work performance ▪ Employee satisfaction, job satisfaction, work satisfaction
Exclusion Criteria	<ul style="list-style-type: none"> ▪ Non-academic articles and secondary data ▪ Practitioner (grey) literature, conference, and publications ▪ Interviews, documentaries, and Blogs ▪ Student samples

The literature review was conducted based on the inclusion and exclusion criteria (Table 6) (Arksey & O'Malley, 2005). The articles were further filtered through the PRISMA flow diagram with the aim of eliminating duplications, non-journal articles, and irrelevant industry publications. The initial literature search recorded 346 documents before removing reproductions and non-journal articles (55). Twenty-six articles were duplicated after databases were combined into one search group. Similarly, 29 non-journal records were found during the identification stage. In the screening stage, articles were reviewed based on industry and subject area relevancy. Two hundred and twenty-five articles were identified outside the selection criteria, and 65 articles remained eligible for further screening. The following search terms were used during the screening process.

- (i) Emotion* intelligence or emotion* quotient or EI or EQ
- (ii) Employee* commitment or job* commitment or work commitment
- (iii) Employee* performance or job* performance or work performance
- (iv) Employee* satisfaction or job* satisfaction or work satisfaction
- (v) Construction* or building material* or civil or engineer* or civil engineer*

Construction, building materials, civil and engineering are four separate fields that work together. However, it does not mean that all four can be categorised under one industry. The eligibility screening was conducted with the "construction industry" as the only industry search term. The comprehensive search of databases provided eight articles demonstrating the scarcity of academic literature on EI and its effect in the construction industry. A forward and backward search was then conducted based on the PRISMA flow diagram, (Watson & Webster, 2020). The forward and backwards search resulted in 15 more related articles. 'Backward' refers to the process of reviewing the literature cited in the article. 'Forward' refers to the articles cited in a particular article (Watson & Webster, 2020). The final stage of the PRISMA selection process ensured the quality and the standard of selected journal articles through Australian Business Deans Council (ABDC) and Journal Impact Factor (JIF) rank check. Altogether, 16 peer-reviewed journal articles were selected for the final set of this current systematic literature search and critical review. Due to the scarcity of academic literature on EI in the construction industry, I chose not to limit the search review to a specific geographical area.

3.2.4 Data analysis, reporting and summarising

The data analysis process includes shifting, classifying, and mapping the data gathered before interpreting and synthesising it using the chosen techniques (Arksey & O'Malley, 2005; Thomé et al., 2016). An Excel file (Table 7) was created to collect and map the data. The data is recorded within data fields, including year and location of publication, author/s name, the key focus, significant findings, themes, measuring tools used, and journal (Sundar, 2017; Arksey & O'Malley, 2005). The data recorded will be analysed using the 'thematic data analysis method' (Braun & Clarke, 2006). The thematic analysis provides descriptive and comprehensive information about the database used in research data analysis (Braun & Clarke 2006). This process involves a technique where data is interpreted and synthesised by sifting, charting, and sorting, according to the key themes and issues. The broader view of data analysis will be used to ensure the review's outcome is both contextualised and easy to understand for readers (Arksey & O'Malley, 2005).

Table 7

Summary of systematic review findings on the effect of EI on work outcomes in the construction industry

The analysis of literature search on "the effects of Emotional Intelligence (EI) on work outcomes in the construction industry."							
#	Authors/ Location/ Year	Key Focus	Significant / Key Findings	Themes	Target Group	Measurements Used	Journal
1	Dirk Lindebaum Catherine Cassell UK 2012	1. Transform PMs into "make-sense" of EI of the construction industry 2. Study the implication of receptiveness & resistance to EI in the construction industry	1. Construction is a male-dominated industry. 2. EI is seen as difficult to talk about 3. EI is generally associated with weakness 4. EI is inappropriate to display in the workplace 5. EI is unnecessary. 6. Emotions should not display at work	Male Dominant Receptiveness Resistance	Project Managers	Semi-structured interviews	British Journal of Management
2	Nicholas Clarke UK 2010	Explore the relationship between EI & Transformational Leadership	1. EI abilities positively associated with PMs' competencies. 2. EI ability associated with the PMs' teamwork and managing conflict competencies. 3. The significant positive relationship between empathy and PMs' attentiveness.	Communication Teamwork Attentiveness Conflict Management	Project Managers	Mayer-Salovey- Caruso EITest (MSCEIT)	Project Management Journal
3	Richard Boyatzis Kylie Rochford Kevin V. Cavanagh USA 2016	Explore the relationship between EI & Effectiveness. Explore the relationship between EI & Job Engagement	1. Engineer effectiveness was significantly related to EI competencies, general mental abilities & satisfaction.	Job Engagement Job Satisfaction Job Effectiveness	Construction Engineers	PLS-SEM Software SMART-PLS	Career Development International
4	Dirk Lindebaum Peter J Jordan UK 2010	Project Manager's EI related to project management performance	1. PMs' levels of EI are linked to most relational performance dimensions. 2. EI contribute positively to the PM's performance. 3. High level of EI contribute a positive correlation with motivation and conflict handling.	Job Performance Motivation Development Conflict Handling	Project Managers	Structural Equation Modelling (SEM) Likert-type Scale	Construction Management and Economics

Table 7 Continued

The analysis of literature search on "the effects of Emotional Intelligence (EI) on work outcomes in the construction industry."							
#	Authors/ Location/ Year	Key Focus	Significant / Key Findings	Themes	Target Group	Measurements Used	Journal
5	Riza Yosia Sunindijo Patrick X.W. Zou Australia 2013	The influence of EI, interpersonal skill, Transformational leadership on construction safety management	1). EI is indirectly influence to transformational leadership and implementation of safety mgt 2). PM staff EI (self-awareness) contributes to the improvement of individual performance and the development of effective relationships with others	Interpersonal Skills Transformational Leadership Self Awareness Individual Performance	Construction Safety Staff	(WEIS) (Wong and Law, 2002) LMX-7 scale	Australasian Journal of Construction Economics and Building
6	Minsu Lee, Clifton O. Mayfield, Amanda S. Hinojosa & Yooshin Im, USA 2018	1. The relationship between EI & work outcome. 2. The perception of Leader-member exchange and various work outcomes - job commitment, satisfaction, performance & org. citizen behaviour	1. The EI positively effect Leader-Member Exchange (LMX) 2. LMX mediates work outcome in terms of Job commitment, performance & satisfaction.	LMX Job commitment Job performance Job satisfaction Organizational commitment Org. Citizenship Behaviour	Leaders & Followers	Behaviourally Anchored Rating Scale (BARS)	Organization Management Journal
7	Peter Love David Edwards Elliot Wood Australia 2010	EI positively related with occupational success, employee satisfaction and emotional health	EI would contribute to improving the performance of construction projects	Performance	Construction Employees	Structural Equation Modelling (SEM)	Engineering, Construction and Architectural Management
8	Azadeh Rezvani, Artemis Chang, Anna Wiewiora, Neal M. Ashkanasy, Peter J. Jordan, Roxanne Zolin Australia 2015	How PMs EI contribute to project success	EI has a positive impact on project success, job satisfaction, and trust.	Trust Project Success Job Satisfaction	Project Managers	IBM's SPSS Version 24	International Journal of Project Management

Table 7 Continued

The analysis of literature search on "the effects of Emotional Intelligence (EI) on work outcomes in the construction industry."							
#	Authors/ Location/ Year	Key Focus	Significant / Key Findings	Themes	Target Group	Measurements Used	Journal
9	Lianying Zhang Yingying Yao Tak Wing Yiu China 2020	1. Scale of emotions display of CPM 2. Impact of emotional display & different emotional labour strategies on the job burnout 3. The moderating effect of CPMs EI on the relationship of emotional display & labour	1. Emotional labour strategies have salient impact on job burnout. 2. To achieve emotional performance and avoid job burnout, CPM can improve their EI	Job Burnout Emotional performance	Project Manager	Oyatzis (2004) Emotional Competencies model	Journal of Construction Engineering and Management
10	Feng Zhang, Jian Zuo George Zillante China 2012	1. What are the social competencies 2. Key behaviours determine excellence performance 3. The importance of SC for CPM in construction industry	1. Establish SC model for CPMs . 2. Personal relationship what	Social Competencies Social Awareness Working with Others Leading Others	Construction Project Managers	The 28-item Emotional Intelligence Appraisal instrument	International Journal of Project Management
11	Riza Yosia Sunindijo Bonaventura H. W. Hadikusumo Thailand 2014	Relationship of EI and conflict resolution styles of PME in the context of the sociocultural norms of Thai construction	1. The PMEs with high EI are more flexible in adjusting the competencies are very important 2. The overall results indicate that PMEs with high EI are more flexible in adjusting their conflict-resolution styles.	Conflict Resolutions Harmony	Project Mgmt. Executives	Behaviourally Anchored Rating Scale (BARS) MLQ Form 5X	Journal of Management in Engineering,
12	Colleen J. Butler Paul S. Chinowsky USA 2006	1. Analysis of Relationship between EI and leadership behaviours. 2. Explore the effect of EI to the transformational leadership	The result shows the EI and leadership behaviours of construction leaders have indeed proven that a relationship exists. In addition to the relationship exist, measured by social science researcher standards.	Intrapersonal Interpersonal Leadership	Construction Executives	Schutte Self-Report Emotional Intelligence (SEI)	Journal of Management in Engineering

Table 7 Continued

The analysis of literature search on "the effects of Emotional Intelligence (EI) on work outcomes in the construction industry"							
#	Authors/ Location/ Year	Key Focus	Significant / Key Findings	Themes	Target Group	Measurements Used	Journal
13	Stephen Pryke Damir Lunic Sulafa Badi UK 2015	Extend the study on "project chemistry" to understand the competences needed to build quality interaction with their followers in construction projects	1. The project manager's emotional sensitivity and expressiveness may explain variance in the quality of leader-follower chemistry. 2. The leader-follower chemistry model is introduced.	Emotional sensitivity Emotional-expressiveness Leader-follower chemistry	Project Managers	WEIS (Wong and Law, 2002)	Construction Management and Economics
14	Su Juan Zhang Yong Qiang Chen Hui Sun China 2015	1. Investigate the relationship among emotional intelligence (EI), conflict management styles (CMSs) and innovation performance. 2. Test the mediating effects of various types of CMSs.	1. EI is positively associated with integrating, compromising, and obliging styles, 2. EI is negatively related to dominating and avoiding styles. 3. EI is significantly associated with innovation performance	Conflict Mgmt. Innovation-Performance	Construction Managers	WEIS (Wong and Law, 2002) PLS SEM Software	International Journal of Conflict Management
15	Azadeh Rezvani, Neal Ashkanasy Pouria Khosravi Australia 2020	1. Evaluate the link between EI & performance. 2. Investigate moderating effect of role ambiguity on the work-attitude and performance relationship. 3. Explore the mediating influence of commitment, team satisfaction, & turnover intentions of construction workers	1. Construction project workers' EI is positively associated with project performance, team satisfaction and commitment 2. Construction project workers' EI is negatively associated with turnover intention	Commitment Team satisfaction Turnover intention Project Performance Role ambiguity	Construction Project Workers	PLS SEM Software	Journal of Construction Engineering and Management
16	Michael Aswin Winardi, Catherine Prentice Scott Weaven Korea 2020	This paper will review the theoretical background of organizational conflict and EI, followed by a discussion of the methodology of a systematic literature review (searching, screening, and synthesis).	1 EI has a significant relation to conflict mgmt. 2. EI is the positive strategy within conflict management because in order to manage conflict effectively, both the rational and emotional sides of the situation engagement, and customer loyalty	Organizational performance Job performance Absenteeism Creativity Innovations Burn out	N/A	Systematic literature Review	Journal of Global Scholars of Marketing Science

Table 8 provides a summary of the main themes and categories found during the systematic review of 16 articles that considered for the effect of EI on work outcomes in the construction industry (Harari et al., 2020). During the critical review, over 40 themes were found out of 16 articles. Subsequently, the themes were grouped into ten main categories.

Table 8

Summary of themes and categories emerging from the systematic literature review

Category	Themes	Category	Themes
Job Commitment	Motivation	Self-Development	EI & Age
	Organizational Commitment		EI & Gender
	Attentiveness		Receptiveness
	Commitment		Self-Awareness
	Job commitment		Self-Emotional Appraisal
	Job Engagement		Social Awareness
Communication	Communication		Social Competencies
	Expressiveness	Teamwork	Interpersonal
Conflict Management	Conflict Management		Interpersonal Skills
Innovation	Creativity		Intrapersonal
	Innovations		Team Satisfaction
	Innovative Behaviour		Teamwork
Leadership	Leader-follower chemistry		Trust
	leader-member exchange		Working with Others
	Leadership	Org. Development	Absenteeism
	Leading Others		Contextual Excellence
	Passive Avoidant Leadership		Development
	Transactional Leadership		Org. Citizenship Behaviour
	Transformational Leadership		Organizational success
Job Performance	EI & Work Experience		Turnover Intention
	Performance	Job Satisfaction	Harmony
	Individual Performance		Job satisfaction
	Innovation-Performance	Others	Job burnout
	Job Effectiveness		Use of Emotions
	Job performance		Male Dominant
	Leadership Performance		Resistance
	Organizational performance		Role Ambiguity
	Productivity		
	Project Performance		
	Project Success		

Table 9 further provides a list of categories identified and describes the no of articles each category represented.

Table 9

Categories and no of articles

Categories Identified	No of Articles Represented
Job Performance	8
Job Commitment	6
Job Satisfaction	3
Leadership	6
Self-Development	6
Teamwork	6
Organisational Development	5
Conflict Management	3
Communication	2
Innovation	2
Total	47

3.3 Ethics and research validity

This research does not require ethical approval. The study is conducted via secondary research, and, therefore, the research conducted by primary researchers has already been approved by various institutional ethics committees. I chose journal articles that had ethical approval and executed the research within an ethical framework (Pham et al., 2014). Researching within an ethical framework is an essential part of treating participants with respect and dignity.

Chapter 4: Results and Analysis

4.1 Introduction

This chapter presents the main findings of my systematic literature search on EI and its effects on work outcomes: job commitment (JC), job performance (JP), and job satisfaction (JS) in the construction industry. I start the chapter by introducing the data collection and analysis methodology, including the process results found through the systematic literature search with the PRISMA flow diagram. I have also covered the quality assessment conducted on the methods used. Subsequently, the demographic representation consisted of the geographical settings and research locations, the key themes and categories found during the literature search are presented.

4.2 Methodological quality assessment

The findings of the EI's effect on work outcomes: JC, JP, and JS be analysed using the PRISMA flow diagram. During the literature search, 346 articles were identified prior to filtering non-journal articles. To begin with, 55 articles were found to be duplicates and non-journal articles. In the first screening, 225 articles were excluded that were not deemed acceptable within the review parameters. Further, 56 articles were excluded because the studies did not explicitly relate to EI, were not focused on the construction industry, or because they met other exclusion criteria listed in Table 5. Finally, 16 articles published across various disciplines (figure 4) met the inclusion criteria. As a result, they became the subject of a systematic and critical review, where $n = 16$. I included articles into the PRISMA framework that were reviewed from 20th February to 25th February 2021.

A total of 16 studies were filtered from the PRISMA Floor Diagram based on inclusion criteria (Table 5). These peer review studies were published in 12 journals from several disciplines. As discussed in Chapter 3, the final stage of the PRISMA selection process ensured only Australian Business Deans Council (ABDC) or Journal Impact Factor (JIF) ranked journals publishing peer-reviewed articles were part of the systematic and critical search (Table 10). The academic articles were sourced from high quality and standard journals that were ranked "A*" by ABDC and rated 3.38 by JIF in the Journal of Construction Engineering and Management (Zhang et al., 2020).

Figure 4

PRISMA literature search outcome for "the effect of EI on work outcomes in the construction industry."

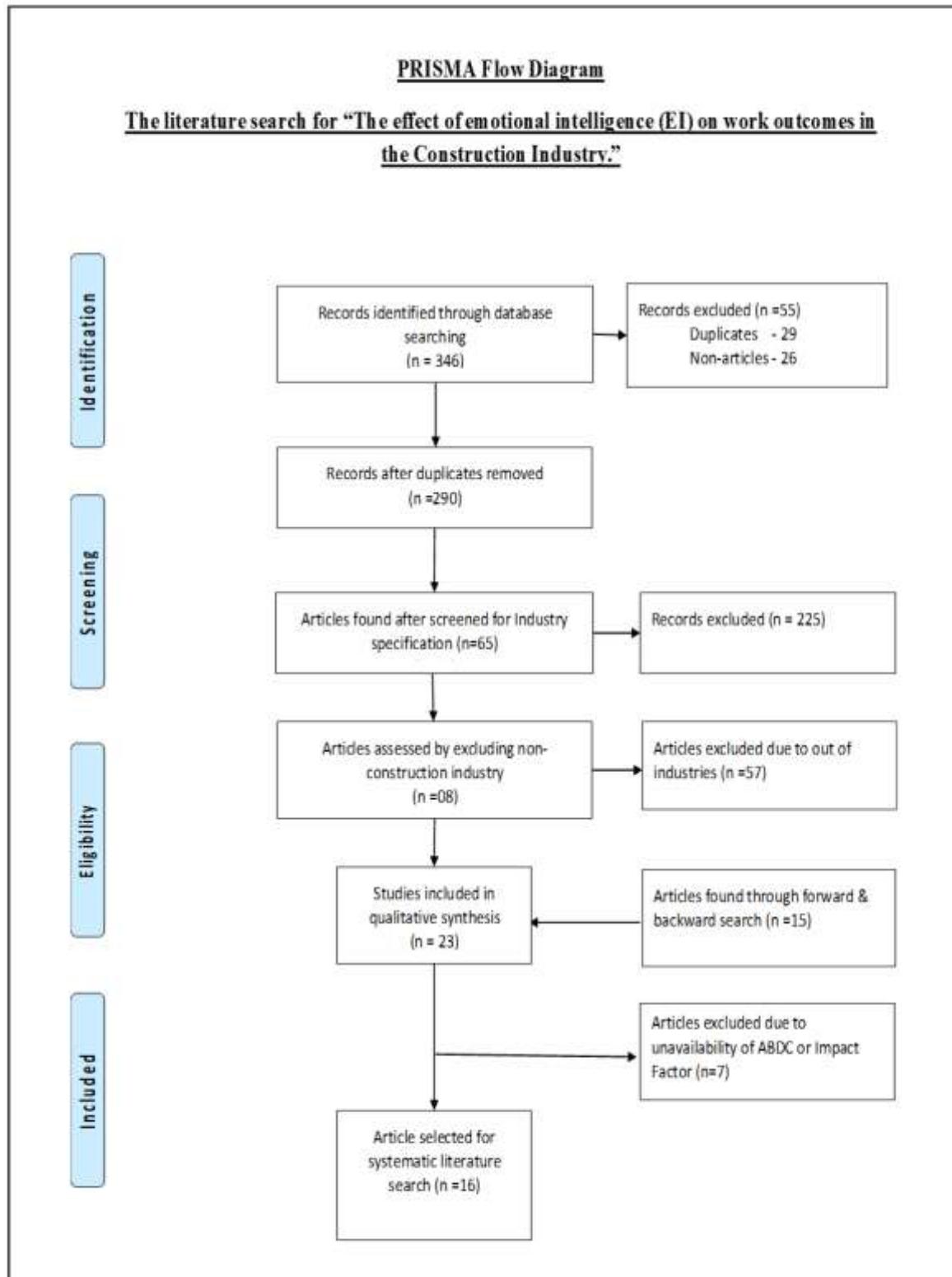


Table 10 shows the ABDC ranking and JIF indicators of each journal selected. Approximately 70% of articles (11) selected for the literature search are “A” ranked, 18% of articles (3) are “B” ranked, and 12% of articles (2) are “C” ranked.

Table 10

The ranking and rating of the journal articles

Ranking and Indexing of Journals				
#	Name of Journal	No	JIF	ABDC
1	Australasian Journal of Construction Economics and Building	1	*	C
2	British Journal of Management	1	3.29	A
3	Career Development International	1	1.99	B
4	Construction Management and Economics	2	2.45	A
5	Engineering, Construction and Architectural Management	1	2.05	A
6	International Journal of Conflict Management	1	1.36	A
7	International Journal of Project Management	2	5.98	A
8	Journal of Construction Engineering and Management	2	3.38	A*
9	Journal of Global Scholars of Marketing Science	1	*	B
10	Journal of Management in Engineering	2	3.76	A
11	Organization Management Journal	1	*	C
12	Project Management Journal	1	2.69	B

* JIF not found. References: "2019 Review - Australian Business Deans Council" (2021)

4.4 Geographical setting and research location

Table 6 (column 2) provides a visual outline of the geographical setting and research locations of the articles selected for this systematic and critical review study. The 16 peer-reviewed articles originated from six countries: four each from Australia and the UK, three each from the US and China, and one each from Korea and Thailand. All articles were from developed countries, except one from Thailand, which is an emerging economic country. In total, four articles originated in Australia (Sunindijo & Zou, 2013; Love et al., 2011; Rezvani et al., 2016; Zhang et al., 2020), and four articles originated from the UK (Lindebaum & Cassell, 2010; Clarke, 2010; Pryke et al., 2015; Lindebaum & Jordan, 2012). Similarly, three articles originated from the US (Boyatzis et al., 2017; Butler & Chinowsky, 2006; Lee et al., 2018) and three from China (Zhang et al., 2013; Zhang et al., 2015; Zhang et al., 2020). In

addition, Winardi et al. (2021) from Korea and Sunindijo and Hadikusumo (2014) from Thailand were also included in the journal review. In total, 57% of journal articles came from Asia Pacific countries (Australia, China, Korea, and Thailand) (Table 6).

I searched for peer-reviewed articles published during the last 20 years (2000 – to date). However, as Lopes (2016) indicates, there is a gap between EI research and its practical application in the workforce. There is also a gap between research outcomes and EI's actual workplace achievement (Lopes, 2016). The above situation is demonstrated by the small number of EI journal articles published by the construction industry over the last two decades. As per the literature search, the average publication rate was only one journal article every two years.

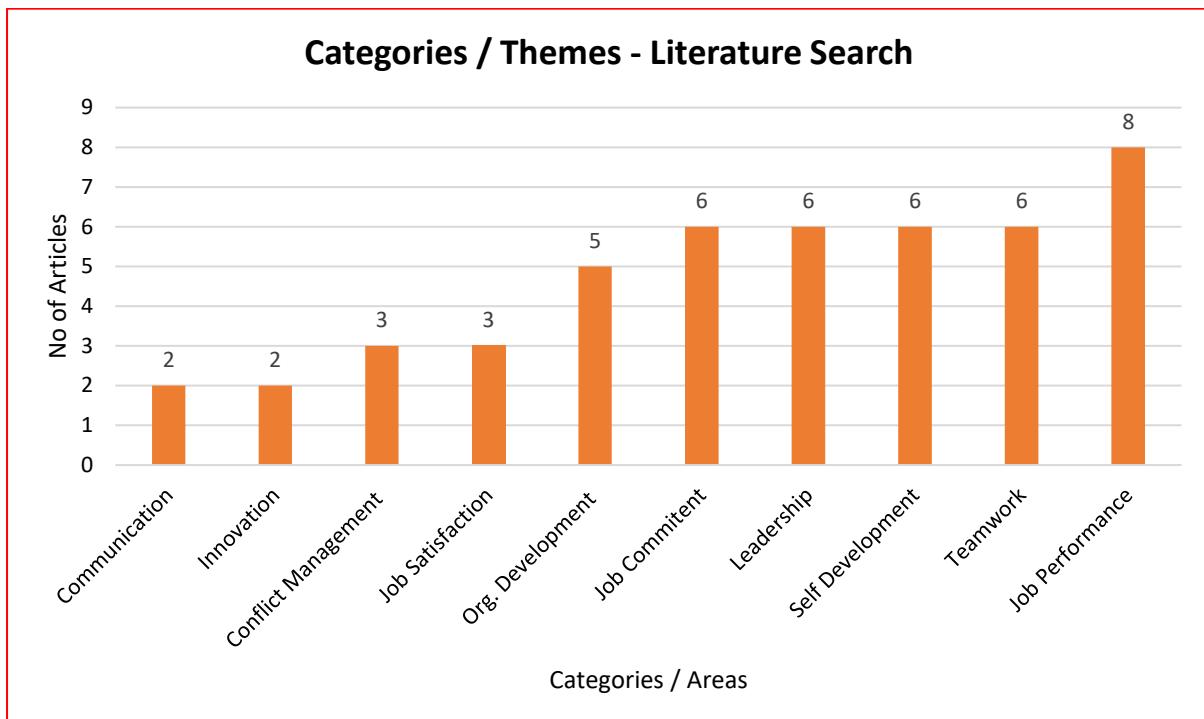
4.5 Themes and categories

Figure 5 shows the key categories covered by the articles. The articles discussed approximately 60 themes, covering many aspects of EI within the construction industry. As part of the thematic analysis, the themes were synthesised into key categories by sifting, charting, and sorting (Arksey & O'Malley, 2005). The categories represented a range of topics related to EI and work outcomes. The final categories were "job performance" (the most popular category in 08 journal articles), "teamwork", "self-development", "leadership", and job commitment (06 articles each), "organisational development" (05 articles), "job satisfaction" and "conflict management" (03 articles), "innovation", and "communication", (02 articles each). The categories discussed in the respective articles all related to the construction industry. As discussed in Chapter 1, the main objective of this study is to discover the effect of EI on work outcomes in the construction industry. In addition, the study will explore the effect of JC, JP, and JS as major work outcomes of EI.

Other subject areas covered by the research are directly or indirectly connected to JC, JP, and JS (Winardi et al., 2021). Furthermore, JC, JP, and JS are interconnected with communication, innovation, leadership, organisational development, self-development, and teamwork (Winardi et al., 2021). A broader view of the data analysis will ensure the review's outcomes are contextualised and easy to understand for the readers (Arksey & O'Malley, 2005).

Figure 5

Key categories/themes covered in the literature search



The systematic and critical analysis employed by Lindebaum & Cassell (2010) utilised the mixed research approach, whilst Winardi et al. (2021) applied a qualitative research approach. The remaining 14 articles utilised the quantitative research approach, using the measures and tools presented in Table 11 to assess EI and related subject topics. The systematic literature search found that the articles have utilised 15 different tools to measure EI. The study found Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), Questionnaire Based Survey, and Wong and Law Emotional Intelligence Scale (2002) (WLEIS) were the highest used tools to measure the EI outcomes. It was also found that Structural Equation Modelling (SEM) was the tool used the second-highest number of times in the selected literature to measure the EI outcomes in the construction industry. As can be seen in Table 10, 20% of peer reviewed journals used the MSCEIT, Questionnaire Based Survey, or WLEIS methods. Clarke (2010), Love et al. (2011), and Rezvani et al. (2016) have used MSCEIT to measure EI and work outcomes in their journals. Questionnaire Based Survey tool has been used by Sunindijo & Zou (2013), Sunindijo & Hadikusumo (2014), and Zhang et al. (2020) whilst Lee et al. (2018), Zhang et al. (2015), and Rezvani et al. (2020) used WLEIS for their measurements. The second most common method used was the SEM, counting 13.3% of the total articles (Sunindijo & Zou, 2013; Rezvani et al., 2016).

The Semi-structured interviews technique (Lindebaum & Cassell, 2010), Emotional and Social Competency Inventory (ESCI) (Boyatzis et al., 2017), Behaviourally Anchored Rating Scale (BARS) (Lindebaum & Jordan, 2012), Job Satisfaction Scale by Cammann et al. (1983) (Rezvani et al., 2016), Boyatzis (2004) Emotional Competencies Model (Zhang et al., 2013), Bar-On EQ-i Test for EI (Zhang et al., 2013), Test of Non-verbal Cue Knowledge (TONCK) (Pryke et al., 2015), and Systematic literature review (Winardi et al., 2021) have used by each article. Another significant result of the research was the focused and prioritised professions of the study. The results analysis shows the research has prioritised the managerial and above roles in the construction sectors, but less priority or consideration given for non-managerial roles of the sector.

Table 11

Measurements and tools found in the literature search

Measuring Technique / Tool	No of Articles
Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)	3
Questionnaire Based Survey	3
Wong and Law Emotional Intelligence Scale (2002)	3
Structural Equation Modelling (SEM)	2
Semi-structured interviews	1
Emotional and Social Competency Inventory (ESCI)	1
Behaviourally Anchored Rating Scale (BARS)	1
Job Satisfaction Scale (Cammann et al., 1983)	1
Boyatzis (2004) Emotional Competencies Model	1
Bar-On EQ-i Test for EI	1
Test of Non-verbal Cue Knowledge (TONCK)	1
Systematic literature review	1
LMX-7 scale (Scandura & Graen, 1984)	1
MLQ Form 5X Analyzes for leadership	1
Behavioural Trust Inventory (BTI)	1

I have discussed the above functions in detail in chapter five: Discussion. Additionally, the relationship between EI, size of the organisation, and work outcomes are also significant factors to analyse. Therefore, it is important to explore the impact of organisation size on EI and work

outcomes. The organisation structure based on the levels of each position plays a vital role in managing resources towards organisation success (Songer & Walker, 2004). It is worth exploring the relationship between organisation structure, levels of positions, EI, and its effect on work outcomes. The employee competencies would vary based on their work environments, such as fieldwork and office works. It is important to study how EI and the work environment responds to the work outcomes of the construction industry. Therefore, the findings related to professions, organisation size, structure and work environment during the systematic review are covered in the discussion chapter five.

Chapter 5: Discussions

5.1 Introduction

Chapter 5 presents a discussion of the significant findings of the systematic literature search and critical review on the effect of EI on work outcomes in the construction industry. It also discusses the theories and empirical findings related to EI, work outcomes, and the construction industry. The chapter also discusses solutions and future research possibilities in response to the research questions: (1) What are the dominant themes in EI research in the construction industry, including research questions, theoretical frameworks, methods, findings, limitations, and weaknesses? (2) What are the controversial findings, uncertainties, or gaps in EI research in the construction industry? The chapter ends by highlighting the outcomes of the systematic literature as well as presenting search implications and limitations of the research.

5.2 Literature search on emotional intelligence and work outcomes

The primary objective of this study was to explore whether EI contributes to employee work outcomes in the construction industry. As shown in Table 6, EI's influence on work outcomes in the construction industry has been the focus of many studies (Boyatzis et al., 2017; Lindebaum & Jordan, 2012; Sunindijo & Zou, 2013; Lee et al., 2018; Love et al., 2011). EI has been found to play a vital role in the JC, JP, and JS of employees (Wong & Law, 2002; Sy et al., 2006). Emotional maturity help individuals to be more productive and successful, and contribute to the organisation and community (Barrett, 2006). Individuals high in EI can manage critical circumstances effectively and manage people to achieve individual and organisational objectives (Love et al., 2011).

The journal article analysis found a significant and positive correlation between EI and other factors connected to the work outcomes of the construction industry. However, Lindebaum & Cassell (2010) argue that EI is a complex topic and unnecessary in the workplace. Furthermore, they maintain that EI is generally associated with weakness and inappropriate display in the workplace (Lindebaum & Cassell, 2010). They also argue that EI and work outcomes are not correlated and are negatively connected (Lindebaum & Cassell, 2010). During the systematic search, approximately 60 themes were found and subsequently grouped into ten key categories: Communication, Conflict Management, Innovation, Job Commitment, Job

Performance, Job Satisfaction, Leadership, Self-Development, Teamwork, and organisational development. Table 9 and Figure 5 shows the key categories covered in each journal article. JC, JP, and JS in connection with EI are discussed by Lindebaum and Jordan (2012), Lee et al. (2018), love et al. (2011), Rezvani et al. (2016), Zhang, Chen, & Sun, 2015, Zhang, Yao, & Yiu, 2020, and Winardi et al. (2021). Clarke (2010) and Sunindijo and Zou (2013) found that Workplace Communication and EI are significantly correlated. Clarke (2010), Lindebaum and Jordan (2012), Sunindijo and Hadikusumo (2014), and Zhang et al. (2015) argue that EI and workplace conflict management are significantly correlated. Innovation, Leadership, Self-Development, Teamwork, and Organisational Development are discussed by Clarke (2010), Sunindijo and Zou (2013), Rezvani et al. (2016), Zhang et al. (2013), Winardi et al. (2021), and Zhang et al. (2015).

Additionally, the construction industry structure consists of several levels, including the top-level or senior management, middle-level or middle management, and lower-level or non-managerial. This shows that the focus of human resources should not be limited to project management and related professions but also professions within all the other levels mentioned above. The professions such as civil, construction, building services, architects, quantity surveyors, safety, supply chain, carpentry, joinery, pipes-fittings, electrical, painting, crane operation, etc also play a vital role in the construction industry. At any given time, there are a large number of apprentices also involved in the industry. The impact on the organisation size and the EI also an important factor (Songer & Walker, 2004). The organisations are categorised based on the size and the capacity as small, medium, and large-scale organisations. However, the current literature search hardly found the journals that have discussed or considered the impact on organisation size and EI. The business types: sole proprietor, partnership, limited liability, public quoted or public sector, are other criteria to determine the effect of EI and work outcomes of each type. The organisation EI level may vary based on the business type (Songer & Walker, 2004). However, I would comment the current literature search found none of the journals discussed this matter in the construction industry. The organisation size, type of business, and culture are good topics for future research to explore the effect of EI and work outcomes.

5.3 Emotional intelligence and job commitment, performance, and satisfaction

Rezvani et al. (2020) explain that JC reflects individual or team dedication and effort towards achieving set goals. Maintaining JC is both necessary and challenging within the construction industry, with employees facing unpredictable and dynamic responsibilities (Leung et al., 2008). Individuals and teams with high JC work hard and achieve goals quickly (Rezvani et al., 2020). A lack of commitment among individuals and teams harms the organisation by causing a loss in productivity, revenue, and profits (Limsila & Ogunlana, 2008; Rezvani et al., 2020). Rezvani et al. (2020) investigated EI's mediating role in JC and construction projects. They found that EI is positively associated with construction employees' performance, satisfaction, and commitment. Rezvani et al. (2020) further found that construction employees' EI is negatively associated with staff attrition. Another critical point revealed by this systematic literature search was the target group of the various studies. Rezvani et al. (2020) focused on "construction project workers", while other studies focused on "project managers" and managerial roles in the industry. Boyatzis et al. (2017) explored the relationship between EI, job engagement and job effectiveness. Job engagement refers to what extent an individual is committed to their job or organisation (Boyatzis et al., 2017). In other words, job engagement and JC are interconnected. Boyatzis et al. (2017) argued that construction engineers' effectiveness is significantly related to construction employees' commitment and satisfaction.

Most of the studies identified by the systematic search explored the relationship between EI and JP. Table 9 shows that JP was referenced in eight peer-reviewed studies, accounting for 50% of the total articles of this current review. Boyatzis et al. (2017) explored the relationship between EI and JP while reviewing job engagement and found that JP is significantly correlated with satisfaction and EI competencies. Lee et al. (2018) found that workers with high EI maintain a positive attitude towards their leaders and are highly committed to their JP and organisational success. Love et al. (2011) explored the relationship between EI and JS. The authors found a strong relationship between EI, JS, and EI increases project performance. Further, they discovered that project performance and employees' performance are significantly correlated. Rezvani et al. (2016) studied the EI of project managers and their contribution to a project's success and found that EI has a significant impact on project success and JS.

Additionally, Rezvani et al. (2020) found that construction employees' EI is significantly correlated to JP, team satisfaction, and commitment. Zhang et al. (2015) examined EI's relationship with conflict management, while Zhang et al. (2020) explored the effect of EI on job burnout. In both studies, the authors discovered that EI development increases emotional performance, innovation performance, successful conflict management and helps overcome job burnout. Winardi et al. (2021) examined EI and conflict in the workplace through a systematic literature review and found that EI is an essential element of effective conflict management. Employees' JC, JP and JS would improve by reducing employee conflict and job burnout (Boyatzis et al., 2017; Lee et al., 2018).

JS has been found to increase job effort resulting in better JP and individual characteristics such as team engagement, empathy, commitment, and communication (Rezvani et al., 2016). Boyatzis et al. (2017), Lee et al. (2018), Lindebaum and Jordan (2012), and Rezvani et al. (2020) discovered a significant correlation between EI and JS. Boyatzis et al. (2017) found that construction project engineers with high EI also have a greater level of self-satisfaction and social interaction, which help develop effectiveness and performance. Lee et al. (2018) and Lindebaum and Jordan (2012) found that a high level of EI is significantly correlated with JS and mediates work outcomes in terms of JP. Rezvani et al. (2020) discovered that construction staff with high EI have greater team satisfaction. Wong and Law (2002) and Sy et al. (2006) explored the strong partnership between the EI of construction managers and supervisors and the JS of their team members. Butler and Chinowsky (2006) demonstrated the positive influence and importance of EI in the construction industry. They maintain that construction industry stakeholders should invest in developing EI competencies amongst construction industry employees as employees behave emotionally in the workplace on a situational basis rather than on an organisational basis (Love et al., 2011).

5.4 Geographical representation and its importance

The source of knowledge is a vital factor in understanding the possibility of generalisability of the study findings. Mann & Saultz (2019) argued that the study location is an understanding of the generalisability of findings. However, generalising different backgrounds' results is not recommended, and one should be cautious when doing so.

The number of academic research published has been increased in the economies where the construction industry is grown. For example, the construction industry in the US, the UK,

Australia, and China is well developed and has a fast growth rate (Tomizawa et al., 2019). The majority of articles selected for the current study are from the said countries. The present study has pointed out that the development of research related to a particular industry depends on the industry's growth in the country or region. The objectives, themes, and key findings of construction scholars from Western countries – the US, the UK, and Australia – are centred on outcomes such as job performance, project success, and organisational development (Clarke, 2010; Boyatzis et al., 2017; Love et al., 2011; Rezvani et al., 2016). Academic articles from China and other Asian countries prioritise relationships, harmony, people, and social development, such as in articles by Zhang, Zou, & Zillante, 2013 and Zhang, Chen, & Sun, 2015 from China and Sunindijo and Hadikusumo (2014) from Thailand. Caputo et al. (2019) argue that culture and EI management have a strong relationship; that is, involvement with EI and its outcome fluctuates based on cultural drives and influences. In general, Western countries are influenced by individualism and more focused on personal benefits, priorities, and needs instead of group needs or collective efforts (Komarraju et al., 2008). Asian countries are more collective-oriented and driven by social harmony, relationships, and tolerance. Sunindijo and Hadikusumo (2014) found that people in Thailand prefer a more non-confrontational and harmonious way of living. Zhang et al. (2020) focused on job burnout among construction managers in China and possible solutions based on emotional performance. Similarly, Zhang et al. (2015) and Winardi et al. (2021) explored workplace conflicts and mitigating factors in China.

The inability to generalise the research findings due to scarce or insufficient relevant local research is thus a negative outcome of this study. The generalisation of particular conclusions connected to human thoughts, behaviours, and practices is crucial as it engages the findings of unknown individuals, circumstances, cultures, environments, and occasions (Polit & Beck, 2010). I suggest, we cannot assume the outcomes of research conducted on EI in the construction industry in the US or UK would apply or be relevant to the construction industry in New Zealand. A similar situation exists with regards to the findings of scholars from China and the New Zealand context. The current systematic literature search selected no journal articles from New Zealand. However, New Zealand based journal article by Potter et al. (2018) was initially included in the study, but it was dropped during the screening process because it was not listed in ABDC or JIF. Australia, the neighbouring country to New Zealand, has significantly contributed to the research topic, such as Love et al. 2011; Sunindijo & Zou, 2013; Rezvani, Chang, Wiewiora, Ashkanasy, Jordan and Zolin, 2016 and Rezvani, Ashkanasy,

Khosravi, 2020. However, presenting generalised evidence must involve caution because generalised evidence will never become universal (Polit & Beck, 2010).

Moreover, because New Zealand is a close neighbour of Australia, generalisations made in the Australian context can be considered differently. Australia and New Zealand are long-term partners with a robust trans-Tasman bond. The mutual relationship between the two countries has helped develop a connection in migration, economics, trade affairs, culture, politics, and sports, creating opportunities for millions of Australians and New Zealanders to cross the Tasman daily for business, holidays, and to meet family members (Key, 2010). Therefore, findings on EI and work outcomes in the Australian construction industry are somewhat more transferrable to New Zealand.

Nevertheless, there is no guarantee that this applies 100% of the time. Despite the strong relationship, there are substantial differences between the two countries, including Australia's larger economy, technology, education, population, and landmass compared to New Zealand (Key, 2010).

5.5 Quantitative research type and emotional intelligence studies

Chapter 4 highlighted that 14 out of 16 articles (87.5%) used a quantitative research method in the literature search. McCleskey (2013) points out that EI research developed in a positivist environment. Positivism involves objectivity, validity, and the generalisability of a study's findings. Creswell (2013) discusses that quantitative research is mostly survey-based and uses experiments or non-experiments. Similarly, EI research primarily uses the survey-based research approach. In an analysis of 1100 studies, McCleskey (2013) found that only 40 used a qualitative method to study EI, social intelligence, and workplace EI while the remainder used a quantitative approach. Survey-based research provides quantitative information with new developments, perceptions, or opinions of the selected sample (Creswell, 2013). In other words, the researcher generalises the research findings to the total population based on sample results. In terms of the current study, generalising EI and human factors to nonparticipants of the study is critical to understanding the interests of people, situations, and moments. However, research evidence should be generalised only if the findings apply to the people and environment of the context considered (Polit & Beck, 2010).

In qualitative studies, the issue of generalisation becomes even more complex and controversial. Qualitative researchers are not generally concerned about the issue of

generalisability. Polit and Beck (2010) and Creswell (2013) suggest two solutions to overcome the generalisation issue that apply to all quantitative and qualitative studies and strategies. Replication of the sample is a leading strategy recommended to enhance generalisation, meaning that research demonstrates similar but strengthened outcomes under different circumstances. In quantitative studies, the enlargement of sample size is a replication of participants that enhances generalisation. In qualitative studies, replication through various sampling techniques strengthens generalisation (Creswell, 2013; Polit & Beck, 2010). Creswell (2013) further expresses that a study's replication is another approach to enhancing generalisation. However, the replication of studies is only possible with incentives to doing so. Academic research will only be worth replicating if findings are robust, irrespective of whether it is quantitative or qualitative. Many EI peer-reviewed studies would have a more substantial effect on work outcomes if replication took place. Nevertheless, replication is only justified if the study (quantitative or qualitative) is vital and resourceful. Integration of evidence, conceptualising, deep reflection, decisions about degrees of broadness, and mixed-method research are some of the other strategies used to enhance generalisation (Creswell, 2013; Polit & Beck, 2010).

5.6 Conceptual and theoretical contribution

There are many different types of EI models and concepts in the literature. However, the Mayer-Salovey-Caruso ability model, Goleman model, and Bar-On model have become the most commonly used and popular models among academics. This is because the concepts of these three models are built on different thinking patterns of EI and provide diverse viewpoints (Prentice, 2019). Prentice (2019) maintains that the Mayer-Salovey-Caruso ability model is the most highly used in the EI literature out of all three models.

Similarly, the current study results show that the Mayer-Salovey-Caruso ability model was the most frequently used theoretical model among 16 peer-reviewed studies. In total, 12 out of 16 (75%) articles used the Mayer-Salovey-Caruso ability model, while Goleman's model was used in five articles (31%). The study found one article that used the Bar-On model and another article that used the Boyatzis Emotional Competencies model (2004). Clarke (2010) and Love et al. (2011) used both the Mayer-Salovey-Caruso ability and Goleman models. Zhang et al. (2013) used the Goleman model and the Bar-On model. The key feature of the Mayer-Salovey-Caruso ability model is that EI was conceptualised as a type of intelligence (Fiori & Vesely-Maillefer, 2018). Mayer and Salovey (1997) explained that the four-branch

model is a significant ability model of EI that has received a great deal of recognition and has been deployed in studies and workplaces. The Mayer-Salovey-Caruso ability model has also created a platform for developing other EI models and measures. Mayer et al. (2016) point out that the four-branch model combines emotional and cognitive processes that encourage growth and development. The emotional and cognitive processes include evaluations, expressions, and managing emotions and thoughts. The ability model covers four dimensions of emotions: perceiving, facilitation, understanding, and managing emotions, and provides a comprehensive performance measure of how people will behave and resolve emotional problems. The model further assesses 141 elements across eight activities under four branches. This is another significant factor of the ability model that explains why it is the most used model in research. The Mayer-Salovey-Caruso ability EI model is being used by investors, medical, engineering, and educational professionals who seek to develop EI skills (Fiori & Vesely-Maillefer, 2018).

However, the research such as Fiori & Antonakis, 2011; Fiori & Vesely-Maillefer, 2018; and Rossen et al., 2008 argued the second branch (aware of others' emotions) of the four-branch model does not materialise as an individual factor when using emotions to facilitate thoughts. Research has noticed that branch two is technically redundant compared to the other branches. Fiori and Vesely-Maillefer (2018) point out that more recent studies use an EI ability model with three components, as also indicated by Joseph and Newman (2010) and MacCann et al. (2014). Notwithstanding, the four-branch model will remain the first choice among current EI models (Mayer et al., 2016). That is, the four branches remain the foundation for current ability EI models, and their description aids in the theoretical understanding of the content domains covered by ability-based perspectives on EI (Mayer et al., 2016).

The tools and techniques used to measure EI, and related outcomes can also be categorised under conceptual and theoretical contributions. Chapter 4 briefly highlighted the measurements and tools found during the systematic literature search. The Wong and Law Emotional Intelligence Scale (WLEIS) (Wong & Law, 2002) and Questioner Based Survey methods were the highest used measuring tools amongst studies. WLEIS was used by Lee et al. (2018), Rezvani et al. (2020), and Zhang et al. (2015), whereas Sunindijo and Zou (2013), Sunindijo & Hadikusumo (2014), and Zhang et al. (2020) used survey questionnaire methods. The second highest used measuring tool was the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), used by Clarke (2010) and love et al. (2011). As indicated in Table 6, other studies used various measures to suit their respective studies. WLEIS was broadly cited in the

literature and validated with excellent reliability and validity (Prentice, 2019). WLEIS measures EI through 16 items with four aspects as follows: (1) Self Emotion Appraisal (SEA), (2) Other-Emotion Appraisal (OEA), (3) Use of Emotions (UOE), and (4) Regulation of Emotions (ROE) with each aspect having four dimensions (Winardi et al., 2021). The MSCEIT has been used the most in EI research (Winardi et al., 2021). Prentice (2019) points out that MSCEIT also consists of factors similar to the EI four branches model, emphasising trust, confidence, and validation. As discussed in section 5.5, the question and survey technique offered many advantages to the study. Questionnaires and surveys are regarded as one of the most economical approaches to data collection. Their practicality, ability to cover a larger audience, ease of handling and data analysis compatibility are other advantages (Alavi et al., 2018). Mayer et al. (2003) discuss that the Bar-On-EQ-I (Bar On, 1997), Emotional Competence Inventory (ECI) (Boyatzis et al., 2000), and EQ Map (Orioli et al., 2000) are self-measuring report test methods where participants use a rating scale to respond to a range of questions. The common issues with self-rating are inaccuracy, bias, and dishonesty. EI is generally measured through independent parties and tools at the workplace, and the outcomes are connected with the employee and team assessments. The MSCEIT is not self-perception based and trusted in the literature as a reliable psychometric testing tool (Love et al., 2011).

The professional category targeted in the peer-reviewed studies was also a critical factor in analysing and understanding the prioritised parties within the construction industry. The systematic and critical review found that the priority of these studies was Project Managers or related managerial and executive roles within the construction industry. Managerial roles identified during the systematic search were Project Manager, Project or Construction Engineer, and Construction Executive. Leaders and followers in the construction industry were addressed by Lee et al. (2018), while Construction Safety Staff were the focus of Sunindijo and Zou (2013). Love et al. (2011) and Rezvani et al. (2016) addressed general construction staff. The construction industry is a classic example of many interconnected processes and activities. The industry involves a unique set of multiskilled professionals in projects, planning, design, architecture, civil engineering, electrical work, plumbing, supply chain, carpentry, and many more.

5.7 EI and other work outcomes

In this study, I mainly focused on JC, JP, and JS as primary work outcomes of EI in the construction industry. However, the work outcome of EI would not limit only to the above three

elements, but also systematic literature search found the following outcomes, which I would discuss as EI and other work outcomes in this section. Work outcomes include job achievements and job enrichment that positively affect JC, JP, and JS (Ahmad et al., 2018). The current literature search found that EI increases leadership, self-development, teamwork, communication, and organisational development (Clarke, 2010; Rezvani et al., 2016; Zhang, Yao, & Yiu, 2020; Zhang, Zou, & Zillante, 2013; Sunindijo & Hadikusumo, 2014; Zhang et al., 2013; Pryke et al., 2015; Zhang et al., 2015). The lack of EI can cause high staff attrition and job burnout (Zhang et al., 2020). Lee et al. (2018) focused on the leader-member exchange and the need to encourage good work outcomes through JC, JP, and JS. The authors found that EI is significantly correlated to and positively affected by leader-member exchange (Lee et al., 2018).

EI encompasses multidirectional themes (see figure 5), including facets of personality, perceived skills, motivations, and work-life conflicts on career commitment (Maqbool et al., 2017). Maqbool et al. (2017) argue employees' creative work outcomes and innovation efficiency can be differentiated from conflict resolution techniques. EI in the themes mentioned above strengthens positive work attitude, effective work outcomes, and altruistic behaviour. EI helps improve communication, problem-solving, management, and workplace relationship management (Livesey, 2017). Additionally, practical benefits of EI such as a transparent workplace and better employee collaboration are crucial components of improved work outcomes. Although the concept of altruistic behaviour is not generally considered in the business context, it is achievable with a greater degree of EI infusion in the workplace. Altruistic behaviour involves acting out of concern to ensure the well-being of other people. Rezvani et al. (2018) argue that organisational leaders need to develop a combination of altruistic and self-serving attitudes. EI is central to this balance. Further, managing stress and extracting potential with a combination of the aforementioned behavioural patterns can be achieved with proper EI. Subscale self-awareness, empathy, and social skills are directly associated with JS. The above context shows improvements in the management paradigms and skill gaps (Rezvani et al., 2019).

Furthermore, when leaders have a significant level of EI, subordinates tend to gain motivation and emotional support, which improves overall productivity. The personality trait of dispositional effect forces people to think either positively or negatively. Positively dispositional individuals are excited and robust compared to negatively dispositional individuals. Moreover, negatively dispositional individuals may create significant issues in

terms of job retention and effective performance. The competitive business context has created incremental work distractions that challenge employees' work-family life. Work-family conflict tends to occur when an individual experiences incompatible demands between work and family life. Consequently, participation in both roles becomes difficult for an employee, leading to a work-life balance, job dissatisfaction, and related issues (Doan et al., 2020). Proper EI training can moderate the impact of work-family conflict and eventually help develop an appropriate management paradigm. Empathy towards employees can be considered one of the crucial aspects of employee retention and brand name development. Employees' EI skills are positively linked to their work satisfaction and impact (Zhang et al., 2018). Thus, EI plays a crucial role in increasing the degree of dynamic management in an ever-evolving world.

According to Suwandana (2019), employees who are allowed to work independent and transparent often feel trusted and valued by the companies they work. The value creation attribute tends to help them become more focused, ensuring long-term career progression. Thus, empowering employees, motivating them, and utilising an agile and transparent approach can be considered a significant element of EI that improves work outcomes. Hence, EI can be viewed as a critical component of the successful completion of the construction industry by supporting open communication, constructive conduct, delegation, and dispute resolution. However, Zaman et al. (2020) point out that a construction team's interpersonal and emotional aspects can be demanding and challenging. Thus, construction managers, supervisors, and staff need to consolidate their EI skills and competencies. Additionally, in this particular context, EI skills can help them deal with various people on a daily basis, including customers, consultants, subcontractors, and suppliers. Organisations increasingly understand the core importance of employing EI to develop leadership skills and handle human resources effectively. Therefore, EI is necessary to achieve human-resource-related objectives set forth by a specific industry (Barreiro & Treglown, 2020). Moreover, as Barreiro & Treglown (2020) point out, EI has a positive effect on the success of construction professionals, which makes it central to performance improvement.

5.8 The limitations

The analysis found the following limitations concerning EI and work outcomes in the construction industry. During the systematic review, the most common limitation was "self-ratings of one's own EI and leadership" and its implications, as highlighted by Clarke (2010), Boyatzis et al. (2017), Sunindijo and Zou (2013), Lee et al. (2018), Zhang et al. (2020), and

Zhang et al. (2015). The small size of the research sample was the second-largest limitation discovered during the systematic review. The limitation of sample size and its implications were discussed by Lindebaum and Jordan (2012), Boyatzis et al. (2017), Zhang et al. (2013), Zhang et al. (2015), Rezvani et al. (2016), and Winardi et al. (2021). The analysis further found the generalisation of the results and outcomes were a limitation, irrespective of their specific geographical, industrial, cultural, professional, and ethnic focus. The issue of generalisation was discussed by Rezvani et al. (2016), Pryke et al. (2015), Love et al. (2011), and Butler and Chinowsky (2006). The problem of validity and reliability due to common variance methods also arose as a critical limitation. This issue was discussed by Lindebaum and Cassell (2010), Rezvani et al. (2016), Boyatzis et al. (2017), Sunindijo and Hadikusumo (2014), and Pryke et al. (2015). Lindebaum and Jordan (2012) and Lee et al. (2018) pointed out the concerns with the male-dominant participants and cultural impact on EI and work outcomes. Rezvani et al. (2016) discussed a sole focus on managerial roles and the level of the interviewer competence (Pryke et al., 2015). Zhang et al. (2015) and Winardi et al. (2021) discussed the time constraints and limited resources.

Chapter 6: Conclusion

This systematic literature review used secondary data to explore the effects of EI on work outcomes in the construction industry. The study's primary objective was to collate and synthesise extant literature on EI and work outcomes to draw broader conclusions on the literature. The second objective was to identify what remains inconclusive, controversial, and unknown about the relationship between EI and work outcomes in the construction industry to formulate a future research agenda. The dynamic nature of the construction industry requires managers and supervisors to develop interpersonal abilities such as EI continuously. Academic research has increasingly focused on the development of interpersonal abilities within the construction industry workforce. EI is a key interpersonal ability that warrants research and practical implementation.

Findings from this review have shown that EI is linked to important work outcomes, with higher levels demonstrating better outcomes. More specifically, this review explored the link between EI and JC, JP, and JS within the construction industry. Review findings contribute to the literature through the following insights: (1) EI is positively correlated with JC in the construction industry. (2) EI is significantly associated with the JP of individuals and teams within the construction industry. (3) EI and JS are positively associated with each other and provide a basis for overall organisational accomplishments.

In addition to the outcomes mentioned above, EI was linked to leadership ability and effectiveness, teamwork, communications, innovations, conflict management, and organisational development. High levels of EI were associated with reduced employee turnover. Managing people and tasks within the construction industry is becoming increasingly complex and challenging. It is hoped that this review's conclusions about the importance of EI will provide the continued impetus for organisations in the construction industry to keep investing in interpersonal abilities. EI is an essential interpersonal ability that can be leveraged by managers and supervisors in the construction industry.

6.1 Future research

The literature review showed the paucity of EI research within the New Zealand construction industry. More, New Zealand based research is needed to understand the full

impact of EI on key work outcomes. The review also found that studies have primarily focused on managerial level roles within the industry. Research that addresses other roles, especially non-managerial roles, is scant. Future research could focus on EI in non-managerial roles in the construction industry to gain a clearer idea of the role of EI. The dominance of quantitative research is another indicator that other types of research (e.g., interviews, case studies, ethnographic) may shed more insight on the relationship between EI and work outcomes.

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