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RESEARCH ARTICLE

Emotional Intelligence Impact on the Creativity of Project Managers in Architecture Companies Favoring Sustainability

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Abstract

The importance of Emotional Intelligence (EI) was discussed by several authors; however, the impact of EI on the creativity of project managers was not tackled. This gap in the literature was the main purpose of this study. To test the hypothesis which suggests that there is a positive correlation between EI and the creativity of project managers in architecture companies favoring sustainability, a quantitative research approach was employed. Architecture companies favoring sustainability were chosen as the target population because they represent a context where the relationship between Emotional Intelligence and creativity has practical significance, given the industry's focus on sustainability and the complex nature of sustainable architecture projects. A survey was distributed to project managers and a sample of 82 participants was obtained. SPSS was used to analyze the responses that were gathered. The results of the study revealed that there is a positive correlation between emotional intelligence and the creativity of project managers in architecture companies favoring sustainability. Thus, the main recommendation of the study is to boost the impact of EI on project managers' creativity so that the latter would enhance their proactive skills and stress its importance. Worldwide organizations and especially architecture firms that favor sustainability should support within their culture and work environment the concept of EI through organizing workshops to assess, develop, and enhance this vital skill and aspect in its employees in general and especially project managers. This study significantly advances the literature by empirically establishing a positive correlation between Emotional Intelligence and the creativity of project managers in architecture companies committed to sustainability, shedding light on the pivotal role of EI in fostering creative and sustainable project management practices.

Keywords: Emotional intelligence, Sustainability, Creativity, Project managers, Architecture companies

1. Introduction

Due to the numerous factors that are considered, sustainability is a very challenging attribute to quantify (Sasmitho et al., 2023). A building can be made more sustainable by considering its material's origin, construction process, location, and environmental impact, as well as the heating and cooling needs (Moghayedi et al., 2023). It is quite challenging to identify which architecture firms are setting the bar even with standards like Leadership

in Energy and Environmental Design (LEED) (Frangedaki et al., 2023). LEED is the most extensively used system for assessing green buildings in the world. As a result, this list is wholly arbitrary and susceptible to change depending on how sustainability is measured. What is certain, though, is that any architecture firm dedicated to more environmentally friendly approaches to building design and construction is a leader in the industry (Shojaei et al., 2023). More than ever, action must be taken to address the problems posed by rising emissions,

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and architectural businesses favoring sustainability are doing that.

Daniel Goleman in his book defined Emotional Intelligence (EI) as “a person's ability to manage his feelings so that those feelings are expressed appropriately and effectively.” What the business world considers emotional intelligence to be is always interesting. It boils down to knowing when and how to use your emotions. Realizing others' sentiments is just as important as your own, especially if you're their manager (Goleman, 1998).

Creative project management refers to the processes used to ensure the effective delivery and management of creative projects inside businesses and creative organizations (Blaskovics et al., 2023). Creativity, especially on the project level was found by Blankevoort (1983) to be a vital factor in attaining project success. To maximize resource effectiveness and project success in light of the irreversible changes to the business environment, project managers must quickly comprehend and use the concepts of EI (El Khatib et al., 2021; Sunindijo et al., 2007). Project managers need to foster a culture where customers, sponsors, team members, and management can work together effectively to solve problems and make decisions to move strategically and quickly. “If the only tool you have is a hammer, you will approach everything as a nail,” stated Abraham Maslow. Therefore, success now depends on having knowledge about and implementing EI.

As a result, increasing EI is important to maximize the effects on the surroundings. In terms of fulfillment and values, the needs of modern labor differ dramatically. Project managers must take these variations into account and provide accommodations. If performed properly, the performance will be enhanced.

The importance of EI was discussed by several authors such as Butler & Chinowsky (2006), Lopes et al. (2003), Montenegro et al. (2021), Obradovic et al. (2013), Rezvani et al. (2016), and Zhang et al. (2018). However, the effect of EI on the creativity of project managers was not tackled. Thus, what does EI have to do with the creativity of project managers in architecture companies favoring sustainability? Is there any relationship between the two concepts? The gap in the literature was the main purpose behind this research. The main objective is to study the correlation between EI and the creativity of project managers, specifically, in architecture companies favoring sustainability. These companies were chosen due to the importance of sustainability in architecture to protect the limited resources in the age of human climate change.

The workplace nowadays is becoming so dynamic. As such, the load of work and the challenges that employees face daily have increased simultaneously. Thus, the need for EI as competence to be developed and enhanced is vital to sustaining the productivity of these significant assets to enterprises. Moreover, project managers' responsibilities, tasks, and daily activities embed loads of stress and challenges. Thus, for these managers to be able to reveal their creative aspects in the work field, they should be able to know their emotions and others' emotions and act accordingly to optimize their creativity, productivity, and performance. In other words, they should be armed with EI.

The whole world is passing through a blend of crises and challenges. In turn, managers in organizations periodically face change and should be well capable of depending on their EI to foster their creativity at work (Luthans, 2002). From here stems the significance of this study and the need to conduct such research. The research tackles one main research question which is as follows: “What is the effect of emotional intelligence on the creativity of project managers in architecture companies favoring sustainability?” In this study, the research hypothesis is as follows: “Emotional intelligence has a positive effect on the creativity of project managers in architecture companies favoring sustainability.”

Aligning with the above-stated research problem, the major objective of this study is to examine the effect of emotional intelligence on the creativity of project managers in architecture companies favoring sustainability. Furthermore, the study has the following sub-goals: (1) To examine the project managers' capability to control their own emotions. (2) To examine the project managers' capability to assess and control others' emotions. (3) To examine the project managers' capability to build teams and manage those teams.

2. Literature review

2.1. Emotional intelligence

“Emotional intelligence (EI) is the ability to comprehend and manage our own emotions. Emotionally intelligent people are conscious of their feelings, what they mean, and how they affect others” (Salovey & Mayer, 1990, p. 189).

Although many studies tackled emotional intelligence and the concept is getting more and more popular nowadays, only a few know its origin. The first published book about EI was in 1990 and was written by Salovey and Mayer. Salovey was a Yale

University professor and Mayer was a postdoctoral researcher. Their book included a definition of emotional intelligence and its effect on human behaviors and mentalities. In addition to their book, they have numerous published articles discussing emotional intelligence. Moreover, Salovey and Mayer believed that a person is considered an emotionally intelligent person when he or she has four main skills. The first one is the capacity to understand and express their feelings and those of others. The second one is the capacity to make use of feelings in a way that promotes thought. The third one is the ability to comprehend feelings, emotional signs, and emotional language. The fourth and final one is the capacity to control one's emotions to accomplish objectives. Thus, they developed a theory that is based upon four stages; knowing that attaining emotional intelligence is not a spontaneous process but a process that needs conscious effort. What can be concluded from Salovey and Mayer's emotional intelligence theory is that it is easy to comprehend and a starting point for a new concept in the world of emotions.

2.1.1. Components of EI

Although Salovey and Mayer were the first authors to discuss EI, some researchers think that the first researcher who discussed this concept was Daniel Goleman since he is the most outspoken proponent. In 1996, he made the concept of EI more popular when he published his book. The notion of emotional intelligence employed by Goleman differs slightly from that of Salovey and Mayer. Daniel Goleman mentioned that “there are five fundamental components of emotional intelligence which are social skills, empathy, motivation, self-regulation, and self-awareness.” (Goleman, 2011).

The first component is self-awareness. If someone is self-conscious, he'll always be attentive to his feelings and behaviors that may affect those around him. In a leadership position, being self-aware entails understanding the flaws and the talents and acting with humility. Change can't be made without awareness, and with awareness comes responsibility. Historically, we were taught to leave our feelings out of it. Thus, if we had a certain emotion, we used to push it aside and did not use it. Sometimes, a person's gut tells something that he or she might have ignored because of the fear of dealing with it. Regardless if a person does hide his or her emotions, they do not disappear but they impact him or her in a certain way (Dulewicz & Higgs, 2000). Thus, an individual will sooner or later reach a stage where he or she has to deal with his or her emotions. To increase self-awareness, a person

should use his or her physical or her physical senses to alert their feelings. Afterward, he or she should name the feeling, in other words, recognize the emotions. A person should allow himself or herself to have some time to reflect on the intentions behind their emotions. Emotions help in decision-making. Thus, a person should be aware of emotions to make wise decisions. In general, high self-awareness makes people more certain, genuine, open to criticism, and able to keep perspective at all times.

The second component of EI is self-regulation. After knowing and understanding his or her emotions, a person will be able to manage the responses to those emotions to make choices. It is also called self-management where a person uses his or her feelings to reason well. Leaders who can control their emotions are less prone to verbally attack others, act hastily or impulsively, label people, or compromise their principles. Preserving control is the purpose of self-regulation. People usually react based on their frame of reference and not based on the circumstance. Therefore, one should recognize their principles, take ownership of their actions, and pay attention to their self-talk if one wants to improve their self-regulation. Self-managing individuals frequently make wise decisions, take the initiative, see things from multiple angles, and act quickly (Dulewicz & Higgs, 2000). Such individuals experience their emotions, comprehend why they are experiencing them, and then decide how to control their emotional reactions.

The third component is motivation. Controlling your emotional emotions is only one aspect of EI. It has to do with having the ability to arouse feelings of commitment and project completion when those things are on the line. The capacity to channel your powerful emotions toward a goal is known as self-motivation (Dulewicz & Higgs, 2000). Self-motivated leaders work tirelessly toward their goals and hold themselves to a high standard of excellence in their profession. Self-motivated people have positive attitudes and are usually optimistic.

The fourth component is social skills. Great communicators are leaders and they have excellent social skills. They are always ready for good news, as well as terrible news, and they are experts at motivating their employees to support them and embrace new missions (Dulewicz & Higgs, 2000). In addition, they are excellent when it comes to solving arguments and managing change. They lead by example and do not sit back waiting for others to do the work for them.

The fifth component of EI is empathy. Empathy is necessary for a leader to run a successful business or

team (Dulewicz & Higgs, 2000). They help their team members develop, listen to those who need it, criticize unjust behavior, and offer constructive feedback. Empathic leaders can put themselves in other people's shoes.

2.1.2. Significance of emotional intelligence in organizations

First, emotional intelligence strengthens team cohesion in organizations. Teamwork is necessary for all organizations to increase the productivity and performance of employees and thus the organizational overall performance (Hanaysha, 2016). Consequently, paying attention to emotional intelligence will allow everyone to blossom and find their place thanks to a friendly and welcoming atmosphere (Caruso & Salovey, 2004). All team members will be able to identify their emotions, understand them, and master them to improve their relationships.

Second, emotional intelligence improves the productivity of the overall organization. Individual and collective productivity improves due to emotional intelligence. How can this happen? Well actually, understanding the origin and the source of employees' emotions will allow the organization to set up a more pleasant work climate and thus have better management of the company's internal and external problems (Caruso & Salovey, 2004).

Third, emotional intelligence enhances the performance not only of managers but also of employees (Lam & O'Higgins, 2012). A manager can benefit from improving his or her emotional intelligence level to lead the team, support co-workers, and gain more responsibility (Caruso & Salovey, 2004).

The list goes on and the significance of EI in organizations worldwide is increasing. Emotional intelligence is not only for leaders as many think (Lam & O'Higgins, 2012). EI will help each individual at every stage in his or her career. Individuals with high emotional intelligence are better team players, cooperate more with other coworkers and managers, have self-motivation, and have high communication and social skills. All of those provide positive consequences to organizations despite the field or industry they operate in (Lam & O'Higgins, 2012).

2.1.3. EI and leadership

Emotional intelligence has become a predictor of good leadership (Caruso & Salovey, 2004). Several studies have found a correlation between success and team performance, as well as leadership and emotional intelligence. When emotional intelligence

first became popular, skeptics viewed it as a fad that would fade away like previous fads before it. According to Daniel Goleman (2020), emotional intelligence has gained traction as a critical commercial leadership skill and it was found to be the strongest predictor of performance, accounting for 58% of success in all sorts of employment. When sensitive information enters the perceptual system of an individual, interpersonal abilities play a major role in project management. This interpersonal dimension enters into every area of project management since we are humans, dealing with other human beings (Creasy & Anantatmula, 2013).

In the age of globalization, talents must function not only across value systems but also virtually, necessitating a high rate of EI, which has now become a requirement for long-term success. A high-powered supervisor could carry a team towards poor performance and destroy morale, causing team members to become mentally overburdened and disconnected, eventually leading to decreased productivity (Odame et al., 2020).

For long-term business success, a leader must demonstrate high levels of emotional intelligence by using a situational leadership strategy because there is no one size fits all solution, dissolving their egocentric and pig-headed intransigence, and molding themselves to the environment, particularly to overcome the complex scenario, learning to channel the given leadership power in a productive and rewarding direction, orchestrating the conversation while team members share their perspectives; using a directing rather than dictating the approach, and evaluating the team's readiness by analyzing their competencies and inclination (Caruso & Salovey, 2004).

Many studies in recent years have demonstrated the critical relevance of a high Emotional Quotient (EQ) for leaders to succeed in the evolving global corporate environment. The importance of EI to company sustainability has been a major topic of contention. Emotional intelligence may harm project management, that's why it is necessary to investigate how it can affect the decision-making and the creativity of project managers.

2.2. Project management

Project management is the practice of leading teams to achieve specific objectives while adhering to a set of guidelines. The scope or specification describes the details of the project goal. Expense (budget) and time (schedule) are the project's primary constraints in a work setting. It takes cold data and hard skills to plan and execute a project in these

terms (Baird, 2020). According to Patrick Mayfield (2014), most project managers spend 8–12% of their time on people-related tasks. The top 10% of project managers spend 60–80% of their time on this type of activity. Mount (2000) discovered that emotional competencies accounted for 69% of project manager skills, while business expertise accounted for 31%.

Traditional production processes and ideologies must shift if sustainability is to be achieved. These changes in today's society are usually managed as projects and executed by specialist project managers, who are increasingly required to possess the knowledge and skills necessary to take the project's sustainability into account on the social, economic, political, cultural, and environmental levels. As a result, project managers may play a critical role in achieving sustainability.

A new viewpoint on projects is required for sustainable project management, which is a critical corporate concern. Project managers have for far too long regarded their projects as if they were isolated islands, separated from company strategy and governance, as well as the greater community. Project managers and teams may know what is best for their projects, companies, and society as a whole by putting project management in the correct strategic framework.

According to Zwikael (2009), the transience of projects may directly contradict the long-term goal of sustainability. Plans can assist organizations in attaining their long-term investment objectives. The context of projects and project management extends beyond the project itself. It is possible to ensure that the job is carried out in accordance with the company's objectives and managed using its established practice technique by understanding the context of the project.

Regardless of how it has been done over the years, project management does not take place in a vacuum. The success of a project is determined by both internal and external environmental factors. These characteristics may enhance or restrict project management alternatives and may have a high or low effect on the result. A project manager must manage cost, time, and scope while balancing economic, social, and environmental factors.

2.3. Creativity in the workplace

Creativity is the ability of a person to imagine and realize something new, which is known as creation. It can also be the ability to come up with a fresh, creative solution to a particular issue. Creativity in the workplace is the ability to easily generate ideas,

alternatives, and solutions to a given problem. Moreover, based on this definition and linking it to the concept of innovation, creativity represents the process of generating ideas. Creativity acts as a growth factor and a lever in this conflict. It allows the business to expect new encounters by coming up with innovative solutions to the problems it faces. You must therefore be aware of how to encourage everyone in your workforce to be creative.

Although creativity has been extensively investigated in psychology, its complex and multifaceted character has made it challenging to describe and quantify. Most explanations of creativity contain at least one of the following four standpoints: the mental operations required to produce creative work, the traits of creative people, the results or products of creative work, and the conditions that encourage creativity. These primary concepts of creativity serve as the foundation for most creativity measurements (Said-Metwaly et al., 2017).

Hennessey and Amabile (1988) assert that social and environmental factors have a significant impact on the development of creativity in the workplace. An individual's intrinsic motivational orientation and their level of creativity are said to be strongly and favorably correlated; people are at their most creative when they are encouraged by curiosity, pleasure, gratification, and the encounter of the activity at hand. Genuinely motivated people look for opportunities to exercise their imagination and ingenuity (Deci & Ryan, 2013).

To define individual creativity, Amabile (1988) uses the three characteristics, namely creative thinking skills, expertise, and motivation, and cross-references them to schematize what she calls the creative intersection. Amabile (1988) analyzed the components of creativity. She pointed out the circumstances that support it. The basic conceptual underpinning for creativity research is the model she created. Amabile's research began with a survey of 120 R&D professionals from 20 different industries who were asked to describe both creative and non-creative events. The transcripts of these interviews were coded by unaffiliated parties. The study of these interviews identified three elements—domain-related abilities (expertise), creative skills, and intrinsic motivation—as being essential for individual creativity (independent of the industry).

When interviewing hundreds of people who had a deep sense of pleasure and achievement in their work that was stimulating enough to stretch their aptitudes and skills, Csikszentmihalyi and Rathunde (1993) proposed the presence of a mutual

link between flow and creative work. They defined the mental state of flow as the peak of creative insight and optimal experience. As several of his respondents utilized the metaphor of a current that carried them along when they enjoyed practicing their activities that they considered tough, he coined the term flow to represent the common subjective experience recorded by his respondents. According to him, the flow state is an essential component of all tasks that increases output, satisfaction, and meaning at work (Csikszentmihalyi & Rathunde, 1993).

Creativity drives creativity at work, which increases production and aids in skill development for employees (Conboy et al., 2009). Whether employees are based in the office or work remotely, it is critical to foster creativity at work (Müller & Turner, 2010). Allowing employees to share, debate, and come up with fresh ideas and solutions not only promotes inventive and creative problem-solving but is also believed to improve workplace culture. Because of this, many businesses make an effort to encourage creative thinking by giving their staff members the resources—both tangible and virtual—and support they need to be resourceful (Dulewicz & Higgs, 2005).

In short, creative people are those who have good communication skills, motivate others, can multitask, are attentive to details, have the necessary knowledge to conduct their tasks and duties, are familiar with the required tools to do their jobs, tolerate risk, are norm-doubting and think out of the box, have autonomy, are attracted to complexity, are ambitious, and are curious.

Creativity is the path to great innovation, but nurturing creativity in a highly structured environment, like work, can be difficult. Fortunately, with a little creativity, a company can get the ideas of its workforce flowing.

Employees with creative ideas tend to keep their ideas hidden from management to keep their bottom line from being harmed. Pushing the power of creativity down from top management to line personnel allows creative employees to apply their ideas and benefit the organization while also highly motivating those employees (Van den Heuvel et al., 2006).

2.4. Project management and EI

EI is nowadays a vital factor for the success of businesses and individuals especially in project management by developing leadership styles that are the foundation of project success. Emotional intelligence and technical skills are considered

essential tools for team members to have effective performance (Fareed et al., 2021). In addition, previous research showed that the project manager's position as a leader has a very effective role in the project's success (Fareed et al., 2021; Pacagnella et al., 2019) and his/her achievement is driven by emotionally intelligent leadership.

Transformational Leadership (TL) adopted by the project manager helps the team members to enhance their performance and achieve their required tasks. It is a procedure where leaders and team members help each other to reach higher levels of profound quality and inspiration (Stewart, 2006). Their major responsibility is to motivate all the team members to increase their abilities to ensure the project's success. A lot of studies showed a strong relationship between TL and EI, some of which are Ali and Anwar (2021), Fareed et al. (2021), and Zaman et al. (2019). Hence, the various styles of TL have a fundamental role in enhancing teamwork, increasing employee performance, and helping the team to achieve their tasks properly.

The success of the project depends on the team's ability to work together. Interpersonal management is the ability to recognize and appropriately respond to other people's emotions (Agarwal et al., 2023). People will respond honestly and with trust, if you, as the project manager, can relate to them and see their humanity. To do this, you must sympathize with people, pull them out, and encourage them to disclose their original ideas or worries. You must also be congruent (Agarwal et al., 2023).

Others frequently only watch your behaviors, not your intentions. A project manager with strong EI is conscious of the effect of his or her words and deeds. They are also able to match intents with behaviors to get outstanding outcomes with individuals since they have high self-awareness (Drigas et al., 2023).

A project manager should also express some of their feelings while considering how others might respond (Acheampong et al., 2023). Because of his or her personality, experiences, and mental state, he or she should always question presumptions and realize that they are always just hearing a portion of what is being communicated.

In a project, effective relationship managers are attentive, systematic, dependable, and adept at inciting healthy discontent. A team that works incredibly well as a result of early and continued open communication of problems and challenges is one of the advantages (Farouk et al., 2023). Those managers realize that most people always try their hardest with the resources at their disposal and find out more about their resources with their assistance.

An emotionally intelligent project manager motivates, leads, pushes, and encourages the team. The project manager's activities have the biggest effect on the project environment of all the components (Zada et al., 2023).

Effective project managers are humble and communicate frequently. They never go overboard (Zada et al., 2023). Instead of focusing on their performance, they have great expectations for the project team. Additionally, they create a framework and aid in the growth of a project culture that enables the project team to work in a way that has value, importance, and a sense of community. They also serve as role models and uphold shared ideals, show faith in the group, acknowledge that self-respect and pride in one's job are important components of human motivation, are passionate, and preserve the project team's attention. The lack of focus has caused more projects to fail than competition or technical difficulties. They also aid in the team's success celebrations. In brief, they are distinguished by their modesty, unwavering commitment to their objectives, use of intuition, and relationship-building abilities (Bucero & PMP, 2023).

Project managers have the opportunity to create an unrivaled project environment if they are fully aware of their skills, values, and potential as well as those of their project teams (Malik et al., 2023). These project managers are also skilled at maintaining emotional control over both themselves and others. The project's results refer to how well the project's people, resources, and activities have been coordinated and carefully directed toward a mutually understood, clearly defined conclusion (Silva, 2023). Each member is driven by excitement, behaves logically and with purpose, feels autonomous, can work with others to achieve success, and is content. The project is characterized by zeal, commitment, and openness. Every day, a project manager has the chance to affirm or deny the value of the efforts of the project team. People need to feel valued for both themselves and their work. Only those things that are significant to a person will get their money (Waheeb et al., 2023).

Successful project managers include both the hearts and minds of their team members (Agarwal et al., 2023). As a result, project managers today use EI to transform their project teams from good to great and take ownership of giving their personal and professional all for the benefit of clients, team members, and management (Drigas et al., 2023).

Project managers can employ several strategies to improve emotional intelligence in the project environment. They should first provide the framework

for comprehending and developing EI. They should secondly model the model. Third, they should identify their personal and professional triggers for the project team and make a plan for how to handle them in advance. They should also offer up-to-date frames of reference that are compatible with the brand-new surroundings and aid the team in eschewing outdated ones. Fifth, they should provide project structure by using tried-and-true project management technologies. Structure leads to freedom. All project team members will have a firm base from which to recognize possibilities, solve problems, and communicate once they are all clear on the objectives, norms, limits, responsibilities, and dependencies. This will allow them to fully realize their potential. Sixth, they ought to refrain from gossip and sarcasm. Seventh, people should realize that emotions are not good or bad; rather, they serve as indicators of important information. Eighth, they should periodically remind the project team of the vision, set short-term, realistic goals or stages along the way, offer both positive and constructive comments, and recognize accomplishments. Ninth, they should constantly be open to hearing what their team members, clients, and management truly need and care about before they develop into serious issues and animosity begins to fester. Tenth, people should refrain from taking offense. And finally, they ought to practice altruism. One of the best methods to inspire oneself and the team is to give. Giving is a definition of philanthropy. Small acts of kindness include tidying up the meeting room, offering some papers, asking if you need assistance, etc. Twelfth, project managers need to assess whether their actions reflect their aims. They can do this by examining the outcomes (Govindaras et al., 2023).

2.5. Previous research

Fareed et al. (2021) conducted a study to show how emotional intelligence influences project success. A cross-sectional survey of 382 project managers, stakeholders, and other participants from the team was designed to collect quantitative data. It was mainly done in Pakistan in Islamabad, Pakistan Manpower Institute, and among employees in Pakistan's public sector. Thus, the study's target sample was the public sector of Pakistan. A lot of studies have shown that both Intelligence Quotients IQ and EQ have a significant effect on project success. Based on that, the authors hypothesized that IQ influences positively public project success in Pakistan. A post-empiricism philosophical objective was used to explore an appropriate hypothetical approach. Eventually, they concluded that highly

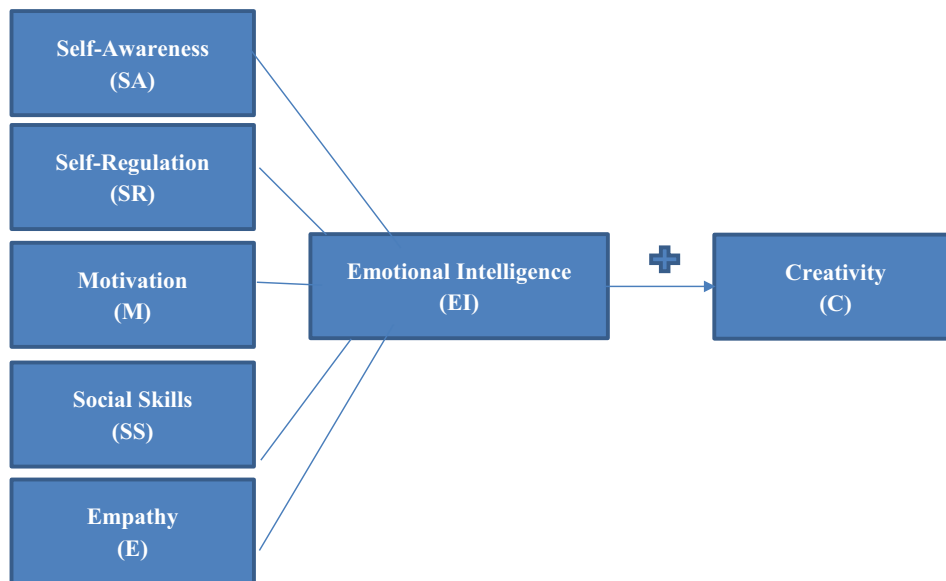
emotionally intelligent project managers tend to deal with conflicts and complexities that may impact the project's success better than others. They hypothesized that public project success in Pakistan is influenced positively by Emotional Intelligence.

Doan et al. (2020) showed the role of organizational commitment and the correlation between EI and Transformational Leadership on project success. A cross-sectional quantitative analysis was followed in this study. They used the Snowball sampling method, so they distributed the questionnaires on the field for 68% of the respondents, and remotely for 32% of them. The area of the study was Vietnam. They used cross-sectional research using a questionnaire distributed to 500 project managers who had done at least one project in their companies and 325 of them responded. The data analysis method that was used is partial least square (PLS-SEM) using the software SmartPLS 3.0. In addition to that, they applied the organizational commitment scale established by Mowday et al. (1979). This scale contains 15 substances with each measurement measured by five items. Each item is valued on a Likert scale from 'strongly disagree' to 'strongly agree'. They hypothesized that project success is affected positively by Emotional Intelligence and their hypothesis was verified after the study results showed that TL and EQ associated,

studies show that transformational leaders who are well committed, stay engaged in the project process and this affects this success. Furthermore, the commitment of project managers plays a mediator role between Emotional Intelligence and project success. Hence, their third hypothesis was that through Transformational Leadership, a project manager's organizational commitment strengthens the interrelation between the project success and Emotional Intelligence and they showed that it was verified using the findings.

A study on the relationship between EI and creativity was carried out by Xu et al. (2019). The findings revealed a statistically significant moderate association. Particularly, the association between EI and creativity was more pronounced when subjective reports rather than objective tests were used to quantify the variables. Furthermore, the connection was stronger in men than in women, in workers compared to students, and in East Asian samples compared to Western European and American samples.

The above-mentioned findings by previous authors led to the main purpose behind this study which is to investigate the impact of emotional intelligence on the creativity of project managers in architecture companies favoring sustainability as shown in the conceptual framework below.



play a fundamental role in project success. They also supposed that Transformational Leadership TL is a mediator between EQ and project success and this hypothesis was also verified. In addition to that, vast

3. Research methodology

This study's research design is explanatory. It followed a quantitative approach to collect information to answer the main research question. The

research is approached deductively. The research philosophy is positivism. The research targeted project managers in architecture companies favoring sustainability. Thus, the population comprises all the set of project managers in architecture companies favoring sustainability in the Lebanese market. However, because conducting a census is mainly too difficult given the scarce research logistics, a sample of 82 participants was obtained. A survey was used to obtain responses from the targeted sample. It included a total of 35 questions and was divided into 2 sections. Section 1 included the sociodemographic characteristics related to gender, age, and educational qualification. Section 2 included 20 Likert scale questions related to the components of emotional intelligence and 12 Likert scale questions related to the creativity of project managers in architecture companies favoring sustainability. Those questions were used to test the hypothesis. The questionnaire was distributed online using Google Forms. After gathering the responses from the questionnaire, SPSS is used to analyze the results. The research was conducted based on the scientific basis of research especially, objectivism, unbiasedness, care, and interest.

4. Findings of the study and discussion

4.1. Sample profile

The sample profile includes the gender, age, and educational qualification of the sample. 52.44% of the sample is female and 47.56% are male. The majority of the participants (51.22%) are between 25 and 30 years, 29.27% are between the ages of 30 and 35 years, 12.20% are between the ages of 20 and 25 years, 4.88% are between the ages of 35 and 40 years, and 2.44% are between the ages of 40 and 50 years. 57.32% of the participants hold a Master's degree, 28.05% hold a Bachelor's degree and 14.63% hold a Ph.D.

4.2. Independent variable: emotional intelligence

Emotional Intelligence (EI) was measured through 5 components which are Self-Awareness (SA), Self-Regulation (SR), Motivation (M), Social Skills (SS), and Empathy (E).

4.2.1. Self-awareness

SA questions are as follows:

- SA1: I can express my emotions.
- SA2: I can regulate or manage my emotions.

- SA3: I can control my emotions while dealing with my customers.
- SA4: I possess the capability to read other people's emotions or feelings.

The majority (69.5%) agree and strongly agree that they can express their emotions, the majority (57.3%) agree and strongly agree that they can manage their emotions, the majority (79.3%) agree and strongly agree that they can control their emotions while dealing with customers, and the majority (84.2%) agree and strongly agree that they possess the capability to read other people's emotions or feelings. Thus, the majority of the participants agree and strongly agree on the questions related to self-awareness.

4.2.2. Self-regulation

SR questions are as follows:

- SR1: I can finish my tasks consistently even under pressure.
- SR2: I can deal with conflicts and criticism.
- SR3: I can handle myself in case I face opposition.
- SR4: I can regulate my work-life balance by prioritizing.

The majority (78%) agree and strongly agree that they can finish their tasks consistently even under pressure, the majority (72%) agree and strongly agree that they can deal with conflicts and criticism, the majority (74.4%) agree and strongly agree that they can handle themselves in case they face opposition, and the majority (70.7%) agree and strongly agree that they can regulate their work-life balance by prioritizing. Thus, the majority of the participants agree and strongly agree on the questions related to self-regulation.

4.2.3. Motivation

M questions are as follows:

- M1: I have the necessary energy to achieve the targets.
- M2: My attitude at the workplace is optimistic.
- M3: I can accomplish my targets in the face of struggles and rejection.

The majority (68%) agree and strongly agree that they have the necessary energy to achieve the targets, the majority (76.8%) agree and strongly agree that their attitudes at the workplace are optimistic, and the majority (74.4%) agree and strongly agree

that they can accomplish their targets in the face of struggles and rejection. Thus, the majority of the participants agree and strongly agree on the questions related to motivation.

4.2.4. Social skills

SS questions are as follows:

- SS1: I enjoy working with a team.
- SS2: I can work effectively within a group.
- SS3: I can avoid fierce negotiations with my team/customers.
- SS4: I can build positive rapport with others.
- SS5: I can communicate with my team/customers even when frustrated.

The majority (79.3%) enjoy working with a team, the majority (82.9%) can work effectively within a group, the majority (76.9%) can avoid fierce negotiations with their team/customers, the majority (87.8%) can build positive rapport with others, and the majority (85.4%) can communicate with their team/customers even when frustrated. Thus, the majority of the participants agree and strongly agree on the questions related to social skills.

4.2.5. Empathy

E questions are as follows:

- E1: I can understand my team's circumstances and needs and deal with them.
- E2: I treat my team and co-workers with compassion.
- E3: I can build strong and trustful relationships with my teams, coworkers, and customers.
- E4: I can deal with empathy with my customers.

The majority (84.2%) can understand their team's circumstances and needs and deal with them, the majority (85.4%) treat their team and co-workers with compassion, the majority (90.2%) can build strong and trustful relationships with their teams, coworkers, and customers, and the majority (86.6%) can deal with empathy with their customers. Thus, the majority of the participants agree and strongly agree on the questions related to empathy.

4.3. Dependent variable: creativity of project managers

The creativity of project managers was measured through Communication Skills (C1), Motivating Others (C2), Multitasking (C3), Attention to Detail (C4), Knowledge (C5), Familiarity with PM tools (C6), Risk-taking and risk tolerance (C7), Norm-

doubting/Out of the Box (C8), Autonomy (C9), Attraction to Complexity (C10), Ambitious (C11), and Curiosity (C12).

The majority (84.1%) agree and strongly agree that they have outstanding communication skills; verbal and written, the majority (89%) agree and strongly agree that they have the ability to motivate team members to collaborate, the majority (87.8%) agree and strongly agree that they have the ability to multitask, the majority (81.7%) agree and strongly agree that they possess a keen attention to details, the majority (81.7%) agree and strongly agree that they have the basic knowledge of creative projects and processes, the majority (74.4%) agree and strongly agree that they are familiar with project management tools and workflows, the majority (81.7%) agree and strongly agree that they are risk takers who tolerate risk, the majority (78%) agree and strongly agree that they are norm-doubting persons who tend to think out of the box, the majority (72%) agree and strongly agree that they are self-governing and have personal autonomy, the majority (64.6%) agree and strongly agree that they are attracted to complexity, the majority (90.2%) agree and strongly agree that they are ambitious, and the majority (86.6%) agree and strongly agree that they have wide interests and curiosity. Thus, the majority of the participants agree and strongly agree on the questions related to the creativity of project managers.

4.4. Correlation between EI components and the creativity of project managers (C)

To test the hypothesis and investigate whether emotional intelligence in its five components affects the creativity of project managers, the Pearson correlation is used. Table 1 shows the Pearson correlation for the variables. The results show that there is a positive and significant correlation between SA and C ($r = 0.553$, $p\text{-value} = 0.000$), SR and C ($r = 0.755$, $p\text{-value} = 0.000$), M and C ($r = 0.666$, $p\text{-value} = 0.000$), SS and C ($r = 0.686$, $p\text{-value} = 0.000$), and E and C ($r = 0.760$, $p\text{-value} = 0.000$).

Thus, all the components of EI have a significant association with the creativity of project managers.

Table 2 shows the results after combining all components of EI in one variable. The obtained coefficient is 0.772 which shows a strong positive correlation between the variables. In addition, the $p\text{-value}$ is 0.000 which is less than 0.01 (2-tailed significance). Thus, using the Pearson correlation, it can be concluded that there is a positive, strong, and significant correlation between EI and C. This means that the hypothesis of the study is proved.

Table 1. Correlation between EI components and C.

Correlations		C	SA	SR	M	SS	E
C	Pearson Correlation	1	.553 ^a	.755 ^a	.666 ^a	.686 ^a	.760 ^a
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	82	82	82	82	82	82
SA	Pearson Correlation	.553 ^a	1	.771 ^a	.717 ^a	.656 ^a	.641 ^a
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	82	82	82	82	82	82
SR	Pearson Correlation	.755 ^a	.771 ^a	1	.818 ^a	.645 ^a	.705 ^a
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	82	82	82	82	82	82
M	Pearson Correlation	.666 ^a	.717 ^a	.818 ^a	1	.640 ^a	.628 ^a
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	82	82	82	82	82	82
SS	Pearson Correlation	.686 ^a	.656 ^a	.645 ^a	.640 ^a	1	.855 ^a
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	82	82	82	82	82	82
E	Pearson Correlation	.760 ^a	.641 ^a	.705 ^a	.628 ^a	.855 ^a	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	82	82	82	82	82	82

^a Correlation is significant at the 0.01 level (2-tailed).

Table 2. Correlation between EI and C.

Correlations		EI	C
EI	Pearson Correlation	1	.772 ^a
	Sig. (2-tailed)		.000
	N	82	82
C	Pearson Correlation	.772 ^a	1
	Sig. (2-tailed)	.000	
	N	82	82

^a Correlation is significant at the 0.01 level (2-tailed).

4.5. Regression analysis

Table 3 shows the multiple correlation coefficient, which measures the strength and direction of the linear relationship between the predictor variables (Components of Emotional Intelligence) and the dependent variable (Creativity of Project Managers). In this case, R is approximately 0.834, suggesting a strong positive relationship. The coefficient of determination indicates the proportion of the variance in the dependent variable that can be explained by the independent variables. Here, R Square is approximately 0.695, meaning that about 69.5% of the variance in the creativity of project managers can be explained by the five components of Emotional Intelligence. This is a substantial proportion of variance explained, indicating that the components of EI are major factors in determining creativity. However, it also implies that other factors beyond those components contribute to creativity. Adjusted R Square is similar to R Square but takes into account the complexity of the model. The

adjusted R Square is approximately 0.675. The ANOVA table indicates that the regression model is statistically significant, as the F-statistic is 34.655 with a very low p-value (0.000). The constant represents the intercept of the regression equation. In this case, the constant is approximately 0.419. When all the components of Emotional Intelligence (EI) are zero, the predicted Creativity of Project Managers is around 0.419. For Self-Awareness, Unstandardized Coefficient (B): -0.209 , Standardized Coefficient (Beta): -0.234 , t-value: -2.197 , p-value (Sig.): 0.031. This means that the result is not significant and can't be considered. For Self-Regulation, Unstandardized Coefficient (B): 0.417 , Standardized Coefficient (Beta): 0.493 , t-value: 3.722 , and p-value (Sig.): 0.000. Thus, Self-Regulation has a positive effect on the creativity of project managers. For Motivation, Unstandardized Coefficient (B): 0.092 , Standardized Coefficient (Beta): 0.110 , t-value: 0.947 , and p-value (Sig.): 0.346. This means that the result is not significant and can't be considered. For Social Skills, Unstandardized Coefficient (B): 0.096 , Standardized Coefficient (Beta): 0.108 , t-value: 0.831 , and p-value (Sig.): 0.409. This means that the result is not significant and can't be considered. For Empathy, Unstandardized Coefficient (B): 0.370 , Standardized Coefficient (Beta): 0.402 , t-value: 3.020 , and p-value (Sig.): 0.003. Thus, Empathy has statistically significant positive effects on the creativity of project managers.

Thus, based on the results, Self-Regulation and Empathy are the significant predictors based on the p-values. They are both components of Emotional

Table 3. Regression analysis.

Variables Entered/Removed ^a							
Model		Variables Entered		Variables Removed		Method	
1		E, M, SA, SS, SR ^b		.		Enter	
Model Summary							
Model		R	R Square	Adjusted R Square		Std. Error of the Estimate	
1		.834 ^c	.695	.675		.35930	
ANOVA ^a							
Model			Sum of Squares	df	Mean Square	F	Sig.
1	Regression		22.369	5	4.474	34.655	.000 ^c
	Residual		9.811	76	.129		
	Total		32.180	81			
Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	.419	.140			2.999	.004
	SA	-.209	.095	-.234		-2.197	.031
	SR	.417	.112	.493		3.722	.000
	M	.092	.097	.110		.947	.346
	SS	.096	.115	.108		.831	.409
	E	.370	.122	.402		3.020	.003

^a Dependent Variable: C

^b All requested variables entered.

^c Predictors: (Constant), E, M, SA, SS, SR

Intelligence which have a positive and significant impact on the creativity of project managers.

5. Conclusion and recommendations

5.1. Conclusion

Humans are emotional beings who are driven by their emotions. When we have a better understanding of those emotions, it can influence the actions we take, especially when creating something new. Emotion inspired the best inventions, products, music, and even services. Creativity is about reaching deeper into a data source we didn't know existed. It's also connecting with something that many of us don't quite understand, and believing in its potential. That data source is emotional intelligence or the awareness and acceptance of our deeper emotions. It's the knowledge that you don't get from reading more textbooks, researching competitors, asking other people how to do something, or gathering as many physical resources as possible. It's the information that comes from within you, something you already know, and trusting it.

The importance of EI was discussed by several authors such as [Butler & Chinowsky, 2006](#), [Lopes et al. \(2003\)](#), [Montenegro et al. \(2021\)](#), [Obradovic et al. \(2013\)](#), [Rezvani et al. \(2016\)](#), and [Zhang et al.](#)

[\(2018\)](#). However, the effect of EI on the creativity of project managers was not tackled. This led to the main motivation behind this study which is to investigate the effect of emotional intelligence on the creativity of project managers in architecture companies favoring sustainability. Those companies were chosen due to their relevance to contemporary issues. Sustainability has become a paramount concern in modern society. Architecture plays a crucial role in shaping sustainable practices, as buildings have a significant environmental impact. Investigating the relationship between Emotional Intelligence and creativity in this context addresses a pressing issue. Also, sustainable architecture often requires innovative and creative solutions to balance ecological and aesthetic considerations. Understanding how Emotional Intelligence influences the creativity of project managers in this field can contribute to more environmentally responsible and aesthetically pleasing designs. Furthermore, sustainable architecture projects can be complex and multifaceted, involving various stakeholders, regulations, and technical requirements. Effective project management is crucial in this context, and Emotional Intelligence is known to play a role in managing complexity and fostering collaboration. Nowadays, amid the evolving industry standards, many architecture firms are adopting sustainability

as a core value and are seeking ways to integrate it into their projects. This makes it an industry where the impact of Emotional Intelligence on creativity can be particularly relevant. Thus, understanding the role of Emotional Intelligence can help these firms in selecting and developing project managers who can navigate the challenges of sustainable design effectively. In brief, architecture companies favoring sustainability were chosen as the target population because they represent a context where the relationship between Emotional Intelligence and creativity has practical significance, given the industry's focus on sustainability and the complex nature of sustainable architecture projects.

The study hypothesized that there is a positive effect of emotional intelligence on the creativity of project managers. For this reason, a quantitative approach was employed and a questionnaire was distributed to collect responses from a sample of 82 project managers from architecture companies favoring sustainability. The findings of the study showed a positive, strong, and significant relationship between Emotional Intelligence in its two components self-regulation and empathy on the creativity of project managers in architecture companies favoring sustainability. Thus, the hypothesis of the study was supported. The findings are in line with the findings of previous studies that tackled project success such as [Fareed et al. \(2021\)](#) who concluded that highly emotionally intelligent project managers tend to deal with conflicts and complexities that may impact the project's success better than others, [Doan et al. \(2020\)](#) who found that through transformational leadership, a project manager's organizational commitment strengthens the interrelation between the project success and Emotional Intelligence, and [Xu et al. \(2019\)](#) who found a statistically significant moderate association between EI and creativity.

5.2. Recommendations

Based on the conclusion drawn above, several recommendations can be provided. First, it is recommended to boost the impact of EI on project managers' creativity so that the latter would enhance their proactive skills. Second, after reading this research paper, project managers should take into consideration the importance of emotional intelligence to manage projects effectively and be creative. Thereby, they can enhance their emotional intelligence abilities to increase their performance and creativity. Third, worldwide organizations and especially architecture firms that favor sustainability should support within their culture and work

environment the concept of emotional intelligence through organizing workshops to assess, develop, and enhance this vital skill and aspect in their employees in general and especially project managers.

5.3. Implications

The study underscores the significance of Emotional Intelligence in the realm of architecture firms favoring sustainability. Acknowledging the positive correlation between EI and the creativity of project managers suggests that these firms can benefit from actively promoting and nurturing EI skills among their project management teams. Furthermore, by recognizing the role of EI in enhancing creativity, architecture companies can potentially unlock new levels of innovation in sustainable design. Emotionally intelligent project managers may be better equipped to think outside the box and devise novel solutions that balance environmental concerns with architectural aesthetics and functionality.

The study offers valuable insights for the professional development of project managers in architecture firms. It highlights the importance of EI as a skill set that can be honed and developed. Organizations can provide training and resources to help project managers strengthen their EI competencies, which, in turn, can positively impact their creative problem-solving abilities.

Architecture companies committed to sustainability can integrate EI into their organizational culture and work environment. This can involve conducting EI assessments, offering EI development programs, and fostering a workplace culture that values empathy, effective communication, and collaboration, all of which are associated with EI.

In addition, the study suggests that architecture firms that invest in EI development for their project managers may gain a competitive edge in the industry. Creativity and innovation are increasingly important factors in winning contracts and delivering cutting-edge sustainable designs.

Finally, since this study intends to fill a gap in the literature on the subject matter, it opens the door to further research exploring the specific mechanisms through which EI influences creativity in project management and other factors that might impact creativity.

In conclusion, this research not only establishes a meaningful connection between Emotional Intelligence and the creativity of project managers in architecture firms favoring sustainability but also provides actionable insights that can guide organizational practices and strategies to enhance project

management effectiveness and sustainable design innovation.

5.4. Limitations of the study and future research

Limitations open areas for further research and provide gaps for other researchers to fill. Although this study has been prepared, implemented, and reported with care and interest, one can state the following as limitations faced throughout the process. The first limitation is that although a strong relationship was found between emotional intelligence and creativity, this study did not consider other factors that might influence creativity which could be a gap for future research. Second, the non-responsiveness to the survey questionnaire led to a limited number of responses. Although the researcher conducted a pilot test to make sure the questionnaire was respondent-friendly, clear, concise, and did not include any cause for someone not to respond to it, the responsiveness didn't meet the expectations. The researchers intended to target a bigger sample size and sent the link to a large number of prospects, but ended up with a sample size of 82. The third limitation is the lack of secondary data about project managers in architecture companies favoring sustainability. While reviewing the literature and previous research, numerous articles, studies, and published academic work were covered. No studies discussed project managers in architecture companies favoring sustainability and there were no published statistics about them.

For future research, it is recommended to study the factors fostering emotional intelligence among project managers in architecture companies favoring sustainability. This is based on the fact that the current study found that there is a positive relationship between EI and creativity. In addition, based on the limitations, it is recommended that this study includes a larger sample and improves the response rate of the questionnaire, recognizing that this is a challenging task. Moreover, this study included a sample of project managers in architecture companies favoring sustainability and found significant results. It is recommended that other types of companies be included in a study to investigate the effect of emotional intelligence. Finally, additional dependent variables can be considered, other than the creativity of project managers in architecture companies favoring sustainability. Other variables might be included such as project success or leadership skills of project managers.

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