

A literature review on leadership qualities among Project Managers of building refurbishment

Una revisión bibliográfica sobre las cualidades de liderazgo entre los Gerentes de Proyectos de rehabilitación de edificios

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Abstract

This research provides a review of potential leadership qualities among building refurbishment project managers. The scope of work in rehabilitation projects is very different from that of new buildings projects. The key features associated with remodeling projects are unique, risky, highly complex and intrinsically full of uncertainties that are constant throughout the life cycle of the project. In addition, these projects have always been identified with the poor performance of the project that covers aspects of time, cost and quality. The objective of this study is to identify potential leadership qualities among managers of buildings refurbishment projects. In addition, the relationships between the factors of uncertainty and the performance of refurbishment projects will also be determined according to leadership qualities. To achieve this goal, a comprehensive bibliographic search was carried out, wherefrom this review, a research model was proposed. This model serves as a basis for broader research on leadership qualities among project managers to better manage uncertainties in refurbishment projects.

Keywords: Project Manager, rehabilitation of buildings, uncertainty, project performance, leadership

Resumen

Esta investigación proporciona una revisión de las cualidades potenciales de liderazgo entre los gerentes de proyectos de remodelación de edificios. El alcance del trabajo en los proyectos de rehabilitación es muy diferente al de los proyectos de nuevos edificios. Las características clave asociadas con los proyectos de remodelación son únicos, arriesgados, altamente complejos e intrínsecamente llenos de incertidumbres que son constantes a lo largo del ciclo de vida del proyecto. Además, estos proyectos siempre se han identificado con un desempeño deficiente del proyecto que abarca aspectos de tiempo, costo y calidad. Este estudio tiene como objetivo identificar las cualidades potenciales de liderazgo entre los gerentes de proyectos de rehabilitación de edificios. Además, también se determinarán las relaciones entre los factores de incertidumbre y el desempeño de los proyectos de rehabilitación según las cualidades de liderazgo. Para lograr este objetivo, se realizó una búsqueda bibliográfica exhaustiva, en donde a partir de esta revisión, se propuso un modelo de investigación. Este modelo sirve como base para una investigación más amplia sobre las cualidades de liderazgo entre los gerentes de proyectos para manejar mejor las incertidumbres en los proyectos de rehabilitación.

Palabras clave: Gerente de Proyecto, rehabilitación de edificios, incertidumbre, desempeño del proyecto, liderazgo

1. Introducción

Many industry sectors such as information technology, management consulting and construction, are increasingly being project-based, of which construction is probably the largest and most complex sector (Sydow et al., 2004); (Cheng et al., 2005); (Whitley, 2006). The importance of project managers has been widely recognized in project-based industry sectors, especially in construction (Cheng et al., 2005); (Turner and Müller, 2005); (Papke-Shields et al., 2010). As a result, a great deal of research efforts has been made to investigate project managers. Existing studies on project managers are divided into five categories: (1) studies on the competencies/skills of project managers such as (Crawford, 2000) and (Cheng et al., 2005); (2) studies on the selection of project managers such as (Ahsan et al., 2013) and (Mohammadi et al., 2014); (3) studies on the leadership of project managers such as (Turner and Müller, 2005), (Bossink, 2004) and (Yacob et al., 2017); (4) studies on the personality and emotional intelligence (EI) of project managers such as (Dolfi and Andrews, 2007) and (Zhang and Fan, 2013); and (5) studies on the role of project managers such as (Ammeter and Dukerich, 2002) and (Sommerville et al., 2010). These studies contribute to an updated understanding of the existing knowledge of project managers, as well as to more developed project management.

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It is important to mention that the environment around an organization puts constant pressure on a leader to further develop his or her skills in dealing with uncertain situations. Self-awareness and maturity within oneself are required from the leader, skills that are very visible in both success and failure (Nilsson, 2001) page 14; (Das, 2019). In the rapidly changing environment we live in today, the world outside the company is a very important factor that decides how leadership can and should be carried out. It is the individual ability to accept the change that comes from the outside, as well as the ability within the organization given to the leader who decides the possible outcome of his or her actions. That is to say, without the freedom of action within an organization, the ability of the leader to accept change will not matter (Nilsson, 2001). page 15.

In this sense, leading an organization is an act of balance between pursuing the intentions and objectives of the organization and caring for the best interests of the employees. Quite often, the objectives of the organization include a change in the way things are done in a company, which in turn affects the employees who have to make a change in habits. For this reason, it is in the role of the leader to be able to manage the crisis in a human way, involving self-knowledge and knowledge of human reactions (Nilsson, 2001), p. 30. According to (Hersey, 1984), there are two behaviors of the leader: 1) task-management oriented; 2) relationship-management oriented. A task-management oriented leader focuses primarily on explaining how, where and when tasks should be completed, whereas a relationship-management oriented leader focuses on building strong relationships and trust between the manager and subordinates so that less instruction is needed to perform the tasks (Hersey and Blanchard, 1972), pages 82-83; (Grimard, 2019); (Hassan et al., 2019); (Imron et al., 2019). In general, Project Managers use combinations of these two leadership styles depending on the situation. An effective or ineffective leadership style is a question of how well the leadership style fits the given situation. However, it is not enough to consider only the situation and leadership style when measuring how effective a leadership style is, it is also necessary to consider the organizational environment in which the leadership works.

Building refurbishment works use valuable and functional elements to extend the use of aging building stock (Ekanayake et al., 2018). Such works can be classified as repair, refurbishment, restoration, upgrade, and expansion (Ali and Rahmat, 2009); (Yacob et al., 2018). Refurbishment works begin for several reasons, such as physical deterioration, differences in functionality over time, the dynamics of economic activities, innovation, technological changes, legal problems, aesthetics and land constraints in urban areas, etc. (Ali et al., 2008); (Rahmat et al., 2012). In countries like the UK and Germany, building refurbishment work is one of the most important sectors in the construction industry, contributing to about half of total construction production (Ali et al., 2008). In addition, (Villa et al., 2013) mentioned that the existing refurbishment works have become the priority of the European Union to reach its ambitious goal of being carbon-free by 2050.

According to the literature, the management of building refurbishment works is demanding, risky, inherently full of uncertainties, highly complex and involves many unforeseen elements (Ali, 2014); (Yacob et al., 2017); (Baudrit et al., 2019); (Kimiagari and Keivanpour, 2019); (Kim et al., 2020). In addition, uncertainties in refurbishment projects are constant throughout the life cycle of the project and are often listed as a reason for poor performance and efficiency (Ali and Rahmat, 2009), being one of the causes of the increase in costs and estimated time, due to the uncertainties in the design process, the recovery of design information and design changes are unpredictable during the construction phase. In this regard, extensive research has been conducted on building refurbishment projects to manage the factors that contribute to uncertainties. However, it takes time for these research findings to be adopted into practice, due to the existing technical and non-technical barriers (qualitative results) (Sunikka-Blank et al., 2012); (Yacob et al., 2017). Not surprisingly, most of the studies focused on technical issues, as opposed to issues related to the leadership characteristics of project managers (Duit and Galaz, 2008); (Yacob et al., 2017); (González et al., 2018); (Rybakova et al., 2020).

Apart from that, (Rahmat and Adnan, 2012) and (Noori et al., 2016) stated that building refurbishment or rehabilitation projects were one of the riskiest; inherently, due to complex and uncertain factors. (Egbu et al., 1996) mentioned that managing renovation projects means managing an uncertain project as the situation could change dramatically. This was also cited by many construction management writers, such as (Egbu, 1999) and (McKim et al., 2000), who reiterated that the uncertainty and complexity of rehabilitation projects were the main reasons for low efficiency. An investigation conducted by (Jens, 2013) stated that moving from an environment of stability to one of complexity and constant change required new skills and leadership qualities. Supported by (Jaeger and Adair, 2010), successful management is said to be based primarily on the commitment of project managers to construction projects; where leaders, followers and organizational factors strongly influence the behavior of people and the environment at work, so that it could increase or decrease the efficiency of a project (Okakpu et al., 2018). Under this assumption, there is a relationship between leadership qualities, uncertainty and efficiency in building rehabilitation projects.

(Berg and Karlsen, 2013) observed that project managers faced many leadership challenges and problems, for example, on issues related to leadership style, stress, uncertainty, motivation, learning, and teamwork spirit. Also, in the work environment, leaders are under constant pressure to further develop their skills to manage uncertain



situations and improve overall project performance. This has resulted in a high turnover of project managers in many organizations (Powell, 1995); (Harrison et al., 1997); (Harzing, 2001). Therefore, this research intends to contribute towards a more integral vision—through a literature review—of the leadership characteristics among building refurbishment project managers, as an element of human impact for the management of uncertainties and performance in building refurbishment projects.

2. Theoretical Framework

The role of project managers has been studied by several researchers and professionals with different approaches. For example, (Ireland, 1992) examined the role of project managers in ensuring customer satisfaction. (Ammeter and Dukerich, 2002) addressed the role of project managers in the formation of the project team. (Liebowitz and Megbolugbe, 2003) analyzed the role of project managers in the implementation of knowledge management. In addition, (Blindenbach-Driessen and Ende, 2006) recognized project managers who excel in innovation management in project-based companies. (Crawford and Nahmias, 2010) emphasized the role of project managers in change management. Although (Davis and Pharro 2003) identify relationship management as the next generation of project management, where few studies to date have systematically investigated the role of project managers in project-based relationship management, (Bourne and Walker, 2008) and (Veal, 2011) described project-based relationship management as the way a project manager and his or her team build and maintain relationships with the right stakeholders at the right time.

In recent years, there has been growing research evidence on the characteristics of a project manager and how he or she influences his/her relationships with the working team. For example, (Walker and Hampson, 2003) and (Davis and Walker, 2009) illustrated relationship-based acquisition strategies for construction projects. (Pryke and Smyth, 2006) provided a relationship approach for managing complex construction projects, delivering a construction project through the development of social relationship capital. (Yeung et al., 2009) created an efficiency index for relationship-based construction project management. (Davis and Love, 2011) presented a structured way of developing relationships to add value to construction projects. (Meng, 2012) showed the significant effect of relationship management on project performance in construction. (Jelodar et al., 2016) proposed a quality relationship framework in the management of construction projects. All these investigations make a joint effort to detail the importance of relationship management that the project manager should have in a refurbishment project.

For this reason, the competencies and skills among project managers have attracted the greatest attention in research. For example, (Crawford, 2000) created a profile of competent project managers. (Clarke, 2010) grouped 24 competency elements within the Project Manager Competency Development Framework according to the Project Management Institute into four competency measures: communication, teamwork, attentiveness and conflict management. (Bredillet et al., 2015) provided definition and evaluation approaches to see “what is a competent project manager?” from the Aristotelian perspective and they believed that the project manager should be “wise” and act “correctly” or perform a “good” action to become competent. In addition, (Cheng et al., 2005) presented a model in the United Kingdom, based on competencies for the performance of project managers to answer “what makes a good project manager?”, in which twelve competencies are goal-orientation, initiative, search for information, focus on customer needs, impact and influence, management and leadership skills, teamwork and cooperation, team leadership, analytical thinking, conceptual thinking, self-control and flexibility. (Ahadzie et al., 2008) developed competency-based measures for the performance of construction project managers in developing countries, covering four task skills (cognitive ability, work knowledge, expertise and experience) and two contextual skills (work dedication and interpersonal facilitation). Therefore, choosing the right project manager is a challenge for any project-based organization (Ahsan et al., 2013); (Sloof and von Siemens, 2019); (Klijn et al., 2020).

Apart from that, a competency development framework can be used to assess past performance and predict the future performance of project managers. For example, (Hadad et al., 2013) and (Zavadskas et al., 2008) took into account competencies and performance when selecting project managers. (Ahsan et al., 2013) identified communication, technical skills, stakeholder management, cost management, time management, educational background, planning, leadership, team building and professional qualifications as the top ten criteria for the selection of the project manager. According to (Mohammadi et al., 2014) and (Gotsis and Grimani, 2016), decision-making for the selection of the project manager always involves complexity and uncertainty. For this reason, establishing appropriate and systematic criteria is crucial to the successful selection of the project manager, which must reflect the needs and expectations of the project customer.

Moving from a stable to a complex and constantly changing environment unavoidably requires new skills and leadership characteristics (Powell, 1995); (Kramer et al., 2019); (Moldoveanu and Narayandas, 2019); (Tsai et al.,



2019); Cleveland and Cleveland, 2020), where the presence of different uncertainties requires specific leadership qualities among project managers to manage them (Gregersen et al., 1998); (Hodgson and White, 2003). Leadership qualities have thus been an important factor for refurbishment project managers and therefore they became a key component of successful project performance. In addition, improving team member morale and performance begins with the leader, as exemplified by the department leader or manager (Mitchell et al., 2015). Similarly, (Jaeger and Adair, 2010) found out that successful management of construction projects depended mainly on the level of commitment of the project managers.

In this research, new directions are proposed for future research, which consists of considering the leadership characteristics among building refurbishment project managers as a human impact element for the management of uncertainties in building refurbishment projects. The rest of this article is organized as follows: (a) methodology; (b) discussions, proposing a research model; and (c) conclusions, with suggestions for future research.

3. Methodology

(Lowe and Gardner, 2000) reviewed 10 years of research articles between 1990 and 1999. A total of 188 articles on “quarterly leadership” were analyzed, and it was found that 64% of the studied research used a method based on data collection questionnaires. Also, (Toor and Ofori, 2008) recognized that quantitative research methods are characterized by the assumption that human behavior can be explained by social facts. Consequently, it was applied as evidence for the research methodology adopted in this study. See (Figure 1).

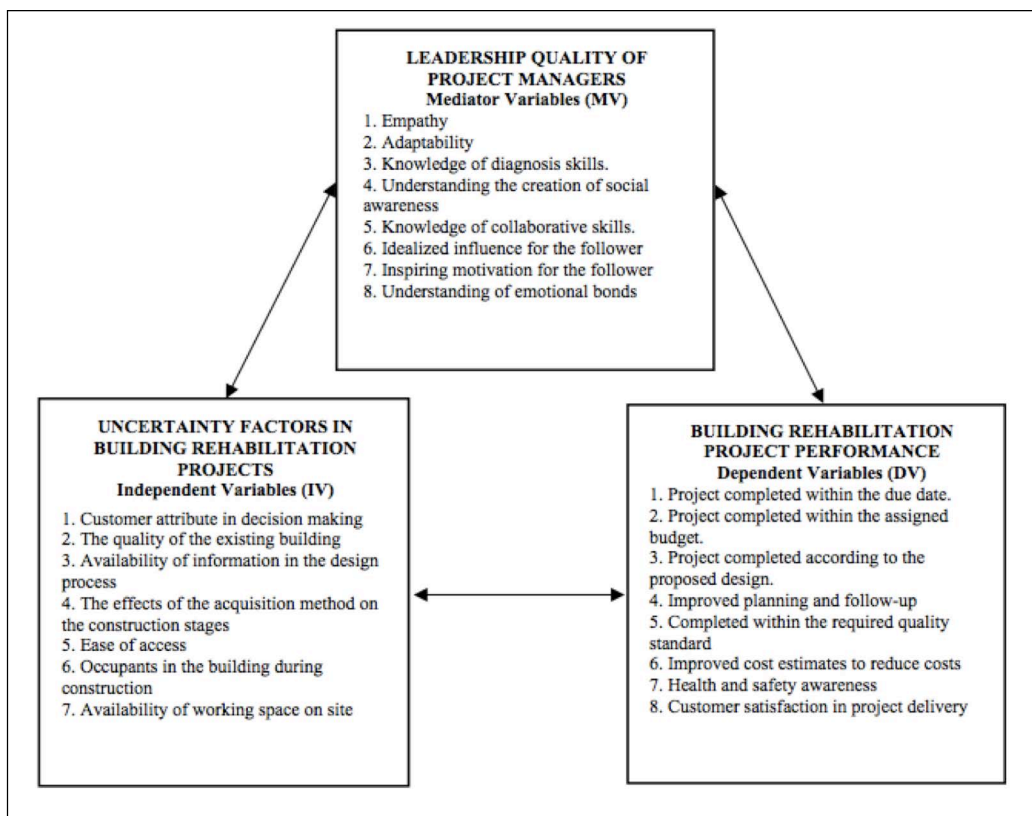


Figure 1. Conceptual framework of the effects of uncertainty factors on the performance of renovation projects in relation to the leadership qualities of project managers.
Source: Adaptation of the Statistics Mediation Model of (Cooper, 2015)



In addition, the statistics mediation model should be adapted to identify and explain the relationship between an independent variable (VI) and a dependent variable (VD) by including a third hypothetical variable, known as the mediating variable (VM). (Cooper, 2015) emphasizes that a mediator explains how or why an independent variable relates to a dependent variable and mediation is exemplified by the question "how did it work?" or how does it relate? The approach involves the chain of causal events. Also, a critical discussion should be provided, related to quality, reliability and validity which in turn have become the model for data collection, measurement and analysis. Therefore, it was found that the quantitative research method is suitable for future research.

In the case of this research, the literature review considered scientific articles within the last 15 years. One validation criterion of the proposal is that in addition to being mentioned in a report or technical document, it must have related academic articles, and of relevance according to bibliometric criteria. The keywords used in the English search with the greatest impact were: Project Manager, rehabilitation, uncertainty, performance, leadership, building, and construction.

The literature review provided an updated understanding of existing knowledge about project managers see (Table 1).

Table 1. Expected contributions

Contribution Areas	Contribution	Impact
Conceptual	Clarify the concept of uncertainty factors in building renovation projects.	Literature in the body of knowledge
Methodological	Verify the validity and reliability of the relationship between uncertainties and efficiency of building refurbishment projects through a literature review. To test the mediating effect of leadership characteristics among project managers between uncertainty factors and the performance of building refurbishment projects.	Model of relationship between leadership characteristics of the project manager, project uncertainty factors and project performance /efficiency
Empirical (for future research)	Check the integrated effect of the following relationships: <ul style="list-style-type: none"> • Project performance and uncertainty factors • Leadership characteristics of project managers and uncertainty factors • Leadership characteristics of project managers and building renovation project performance 	Literature in the body of knowledge

In this study, the initial stage was to review the leadership characteristics of building refurbishment project managers. Scientific papers were reviewed to identify relationships between uncertainty factors in the construction of refurbishment projects and project performance. In addition, the main reasons for the uncertainty of rehabilitation projects were identified (Table 2), and the main reasons for the performance of building restoration projects (Table 3), where the main literature references on the leadership characteristics expected from building restoration project managers were also identified (Table 4). The remaining articles provided supporting information for this study. Therefore, after an analysis based on the literature review, the relationships identified allowed proposing a research model that supports the desirable leadership characteristics among building refurbishment project managers.

3.1 Uncertainties in refurbishment projects

A large number of researchers agree that, compared to new construction projects, the scope of work for



building refurbishment projects is different, including key characteristics such as uniqueness, high risk, uncertainties and difficult management (Quah, 1992); (Egbu, 1999); (Rahmat and Ali, 2010); (Saurin et al., 2013). Rehabilitation works tend to have a higher unit cost than new works. Project complexity can be measured in terms of site access, design building capacity, design coordination, site conditions and quality management (Walker, 1994); (Chan and Tam, 2000). In this context, uncertainties can mean differences in the amount of information available to implement a specific task (Rahmat and Ali, 2010). In addition, uncertainty is also related to the "lack of certainty" and "ambiguity" that points to a deficiency in data, elements, working resources and assumptions (Saurin et al., 2013); (Biswas and Zaman, 2019). Apart from that, (Egbu et al., 1998) reported that management of refurbishment projects includes the management of project risks and uncertainty factors where the condition may change dramatically. Therefore, this requires a lot of knowledge and information to improve the overall performance of a project (in addition, risk assessment involves investigating known probability, while uncertainty refers to events where it is not possible to quantify the probability or likelihood of occurrence) (Ekung and Onwusonye, 2015); (Zolfaghari and Mousavi, 2018). Consequently, the slight modification of the management process to carry out successful refurbishment works is not enough. In addition, it can be observed that uncertainties in refurbishment projects are persistent throughout the life cycle of the project (Ali and Rahmat, 2009). These can become more complex and uncertain when refurbishment works include structural modifications, which are more dangerous and involve more difficult operations (Ali, 2010).

In addition, uncertainty factors could be managed and minimized through good relationships between all project participants, especially with local authorities (Reyers and Mansfield, 2001); (Miller and Hobbs, 2007). Other issues related to refurbishment projects include lack of information on operating facilities, limited space for reconstruction projects, maintenance of safety and health, and involvement of many stakeholders, such as building owners (McKim et al., 2000). In addition, planning refurbishment works can be demanding and requires more flexibility. This occurs when frequent requests for design changes by the customers and unfinished designs (due to problems only revealed during the construction stage) have contributed to variations in the scope of work and the time exceeded.

In this sense, (Yacob et al., 2017) established that the human attributes and leadership characteristics of project managers have a significant relationship with the uncertainties in refurbishment projects (Table 2). However, the existing literature has limited information on this subject. Consequently, it is appropriate and important to develop an alternative solution to manage the uncertainties in restoration projects through the specific leadership characteristics of project managers.

Table 2. Uncertainties in building refurbishment projects

Dimensions	Authors
<p>1. Design process Experience, knowledge, meeting multidisciplinary requirements and involving many participants.</p>	Stone, 1976; Baldwin et al., 1999; Ali et al., 2009.
<p>2. Planning and control process Integration of all parties, workflow and work coordination, a large number of subcontractors and fragmentation problems.</p>	Den; Laufer et al., 1996; Hartog et al., 2007; Rahmat and Ali, 2010; Christiansen, 2012; Shah, 2012; Strachan, 2013; Yacob et al., 2017.
<p>3. Refurbishment works on occupied buildings Interferes with the normal use of occupants, disruption of the workflow, difficulty in determining the needs of residents and unpredictable situations.</p>	Daoud, 1997; Egbu et al., 1998; Quah, 1998; Mitropoulos and Howell, 2002; Noori et al., 2016; Yacob et al., 2017.
<p>4. Acquisition methods The type of acquisition influences the level of uncertainty, the management of the contract by specialized contractors and the inadequacy of the specifications.</p>	Abdul Rashid et al., 2006; Ali and Au-Yong, 2013; Yacob et al., 2017.
<p>5. Legal requirements Affected by the complexity of the law, changes and updates affect approval, inconsistencies in design requirements and required expertise.</p>	Keeping and Shiers, 1996; Holm, 2000; Hardie et al., 2007.



3.2 Performance of refurbishment projects

One of the reasons for the uncertainty in refurbishment or rehabilitation projects has been the poor performance (Yacob et al., 2017). This is because the refurbishment implies a new design, structural modifications, high contents of service works, as well as energy efficiency and sustainability problems (Masrom et al., 2017); (Amiri and Nasiri, 2018); (Baumhof et al., 2018). These types of projects can be sensitive, dangerous and require the implementation of additional safety precautions (Egbu et al., 1998); (Yacob et al., 2017).

Specifically, refurbishment works require greater involvement of all stakeholders in the decision-making process to reduce fragmentation in the design and construction stages. However, this has not been implemented as more than half of the projects have exceeded the budget and time objectives (Rahmat and Ali, 2010); (Yacob et al., 2017). Also, (Thomas et al., 2002) and (Josephson and Lindstrom, 2007) agreed that the performance of a project could be measured using numerous parameters related to cost, time and quality aspects. Specifically, the parameters that affect the performance of refurbishment projects include time variations, cost variations, percentage of variations in work, an average of complaints received an average of non-compliance reported (Egbu, 1999); (Tang and Ng, 2014); (Mokhtar, 2015). An important contribution of this current study relates to the collection of well-established performance dimensions identified in previous research (Table 3), as well as to test the relationships between refurbishment project performance and uncertainty factors using leadership characteristics of project managers as the mediating variable.

Table 3. Performance in building refurbishment projects

Dimensions	Authors
<p>1. Cost variations</p> <p>Cash flow, change in order and missing items in the Quantity Invoices The cost is often higher than specified in the original contract due to the lack of design and specification details, and the absence of quantity invoices during the tendering</p>	<p>Thomas et al., 2002; Josephsonm and Lindstrom, 2007; Thylin and Andersson, 2009; Masrom et al., 2017</p>
<p>2. Time variations</p> <p>Payment and communication problems with customers and consultants. Failure to pay for variations in the work by the customer results in unhealthy cash flow management by contractors, causing variation over time, and the contractor will suffer a monthly loss of revenue.</p>	<p>Dissanayaka and Kumaraswamy, 1999; Thomas et al., 2002; Chan and Chan, 2004; Josephsonm and Lindstrom, 2007; Thylin and Andersson, 2009.</p>
<p>3. Variation work</p> <p>Decision-making by customers and consultants. The absence of quantity invoices during the tendering process can lead to great variations in the works.</p>	<p>Ballard and Howell 1994; Thomas et al., 2002; Josephsonm and Lindstrom, 2007; Thylin and Andersson, 2009.</p>
<p>4. Number of customer and occupant satisfaction complaints</p> <p>The effectiveness of the refurbishment process depends largely on the quality of communications between the parties involved which can reduce failure. The poor quality of the executed work can lead to complaints from the customer. Attention should focus on occupant satisfaction and socio-cultural problems that may arise during the refurbishment or restoration of the building.</p>	<p>Thomas et al., 2002; Dainty et al., 2003; Josephsonm and Lindstrom, 2007; Thylin and Andersson, 2009; Tang and Ng, 2014; Noori et al., 2016.</p>
<p>5. Number of non-compliance reports</p> <p>Quality of work, communication skills and customer satisfaction. Poor planning and control will delay refurbishment projects. Specifically, an incorrect workflow causes the contractor to incur higher costs, poor quality of work, increases in work rates and additional costs, as well as non-compliance reports.</p>	<p>Thomas et al., 2002; Tam et al., 2006; Josephsonm and Lindstrom, 2007; Thylin and Andersson, 2009; Maciel et al., 2016</p>



3.3 Expected leadership characteristics of project managers to direct the performance of the building refurbishment Project

According to (Bassioni et al., 2004), leadership is the combination of the strong characteristics of a person, and the vision and mission of an organization to achieve specific goals. Apart from that, the role of refurbishment project managers refers to the application of skills and knowledge throughout the life cycle of the project (Egbu et al., 1998). In addition, there are some overlaps in management levels that are associated with planning, conflict and crisis management, the well-being of occupants, the ability to integrate multidisciplinary teams, and the decision-making process (Noori et al., 2016). However, these tasks are totally different, reflecting the uncertain nature and higher complexity levels, compared to the management of the construction of new buildings (Yacob et al., 2017).

Based on previous studies, such as those by (Cohen and March, 1974), leadership is the art of influencing others to reach their highest level of performance and efficiency, to accomplish any task. (Murphy, 1997) emphasized the importance of selecting the right people to achieve organizational success. Also, in the fast-paced and globally competitive market, leaders must adopt a new global mindset. On the one hand, researchers as (Yang et al., 2011) agreed that project implementation requires construction leaders who can play a key role in ensuring that the process starts smoothly so that it contributes positively to the performance of the project. On the other hand, (Yacob et al., 2017) concluded that to manage the various uncertainties, specific leadership characteristics are needed among project managers. Apart from that, (Montequin et al., 2015) stated that uncertain situations could seriously expose the quality of leadership.

In this regard, (Udhayakumar and Karthikeyan, 2014) state that during the execution of the project the quality of leadership would affect the performance of the project. Successful management of construction projects is based primarily on the level of engagement shown by the project manager (Jaeger and Adair, 2010). In addition, when the vision and behavior of team members are improved, project managers feel more committed to their team and would be more cooperative (Den Hartog, 2007); (Martinuzzi, 2009). Also, the power of influence is an important criterion, necessary to achieve specific objectives and extract maximum performance from team members (Cohen and March, 1974). Therefore, a project manager plays an important role in the success of the project.

(Montequin et al., 2015) emphasized that the most efficient project managers shared common characteristics such as extroversion, rational judgment and structured behavior. Apart from that, (Hanna et al., 2016) stated that issues related to human elements, especially those related to project managers, were the key to solving productivity problems. (Hanna et al., 2016) recommended that project managers should focus on developing their cognitive skills, management skills, experience and understanding throughout the life cycle of the project.

The above said, being a successful leader means being adaptable, flexible and capable of leading change, as well as getting the best out of others. Constant change requires improvements in leadership characteristics, such as building extensive technical and political networks, collaboration and engagement with staff members and stakeholders, and acquisition of the social intelligence and conceptual skills to achieve results (Hodge and Greve, 2012); (Muldoon, 2018). The leadership qualities of project managers can help form a high-performance culture and set the training bar for team members (Yacob et al., 2018). The research of (Egbu, 1999) on skills, knowledge and competencies for the management of building refurbishment works was based on the feedback provided by the project managers. The organizations identified challenges and opportunities where the survival of the project depended on the necessary skills, knowledge and competencies of their employees (Hersey and Blanchard, 1972), p 50; (Setiawan et al., 2019), as well as innovative processes, products, services, technologies and markets.

Similarly, a project manager must meet specific characteristics to be able to manage a team effectively, for example, technical knowledge, punctuality, attitude, effective communication, dedication, participation, and to be able to bravely face challenges (Udhayakumar and Karthikeyan, 2014). It is important to mention that, there is no unique form of leadership that is suitable for all the circumstances of the project. However, to face problems, solid leadership characteristics are required, such as communication skills, team building, decision making, sense of responsibility, vision, planning and strategy, relationship management skills, empowerment, ethics, influence and integrity (Yang et al., 2011). Thus, through the literature search, 14 desirable leadership characteristics were identified for building refurbishment project managers associated with uncertainty and project performance factors see (Table 4).



Table 4. Desirable leadership characteristics for building refurbishment project managers

Dimensions	Authors
1. Empathy <i>The power to project personality, including social and verbal skills, and body language</i>	Thylin and Andersson, 2009; Yacob et al., 2017
2. Motivational <i>Motivate and inspire the working team, setting realistic expectations and demonstrating engagement to a shared vision</i>	Oke et al., 2009; Yacob et al., 2017
3. Inspirational <i>Having the right vision provides a platform for empowering others, giving the social structure needed to achieve the vision.</i>	Levine et al., 2010; Yang et al., 2011; Udhayakumar and Karthikeyan, 2014; Yacob et al., 2017
4. Emotional Intelligence <i>In the face of uncertainty, humans overreact. However, successful people can reverse this mechanism and change their thinking in a rational direction. This requires emotional intelligence.</i>	Bradberry and Greaves, 2006; Yacob et al., 2017
5. Perseverance and flexibility <i>In an uncertain world with limited resources, perseverance and flexibility have become critical skills. To persevere is to believe in the chosen direction and to overcome difficulties and setbacks while moving towards established objectives and goals.</i>	Hodgson and White, 2003; Schwegler, 2006; Udhayakumar & Karthikeyan, 2014; Yacob et al., 2017
6. Focus <i>People who are better at making decisions, when faced with uncertainty, do not waste time.</i>	Hodgson and White 2003; Bradberry and Greaves 2006; Yacob et al., 2017
7. Confidence and modesty <i>Believing in personal ability and effective leadership goes hand in hand. Confident leaders are self-confident in their judgments and abilities.</i>	Smith and Imbrie, 2004; Meng and Boyd, 2017; Yacob et al., 2017;
8. Effective communication <i>None of the aforementioned dimensions can be achieved without effective communication and listening skills. Effective communication involves the ability to engage in transparent, open and frequent dialogue with staff members and stakeholders.</i>	Mazur and Pisarski, 2015; Sun et al., 2015; Nasaruddin and Rahman, 2016; Yacob et al., 2017
9. Intellectual <i>Intellectual stimulation is the ability of a leader to help the team to discover new ways of performing tasks.</i>	Levine et al., 2010; Shadraconis, 2013; Udhayakumar and Karthikeyan, 2014; Yacob et al., 2017
10. Transparency <i>Keeping up with uncertainty is as much about planning for failure as it is about hoping for the best. Experts in managing uncertainties do not hesitate to admit that they could be wrong, and that frees them to make detailed, rational and transparent contingency plans before acting. This also involves disclosing bad news and offering positive and critical feedback to reinforce the best behaviors.</i>	Bradberry and Greaves, 2006; D'Amato and Roome, 2009; Yacob et al., 2017
11. Not just looking out for own interests <i>Valuing the interests of stakeholders, rather than using people for individual gains.</i>	Crane and Matten, 2004
12. Long-term orientation <i>Focused on long-term goals, and not pressured with different and competitive goals.</i>	Hind et al., 2009; Yacob et al., 2017
13. Integrity <i>Demonstrate honesty and other moral values in both personal and professional life, which stakeholders see as a positive role model.</i>	Hind et al., 2009; Montequin et al., 2015; Yacob et al., 2017
14. Optimism <i>It allows project managers to overcome the obstacles associated with the working environment.</i>	Davis and Cable, 2006; Dolfi and Andrews, 2007; Meng and Boyd, 2017



4. Discussions

According to the literature, a combination of specific characteristics would enable project managers to be more effective leaders, allowing them to attract others through focused engagement, unite their team to achieve the performance of the project, and inspire the team members by making them feel valued. In addition, most influential leaders could motivate their team through joint identification with the collective goal and vision. The expected leadership characteristics of building refurbishment project managers were identified according to the nature of refurbishment projects, which includes the relationship between the performance of the project and uncertainties. Therefore, leadership characteristics are considered key dimensions that affect the process of managing uncertainties in refurbishment projects. In addition, it was observed that the leadership characteristics of refurbishment project managers, as an element of human impact, were rarely examined in previous studies by other researchers. Consequently, a knowledge gap was identified. Finally, based on the literature findings, a research model is proposed see (Figure 2).

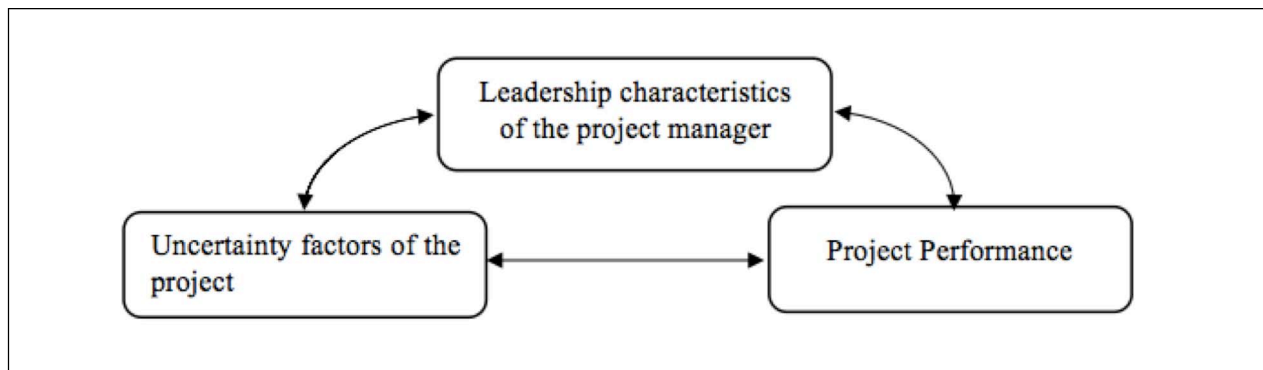


Figure 2. Proposed research model.

Source: adapted from (Bradberry and Greaves, 2006); (Yacob et al., 2018)

Therefore, this current study expands the scope of the existing literature on the relationship between project performance and uncertainties, covering aspects of time, cost and quality with leadership characteristics among building refurbishment project managers as a mediating variable. It is also expected that this research will have provided insights into the management of uncertainty factors through leadership qualities among project managers and by providing a basis for future research.

5. Conclusions

In times of uncertainty, when the level of maturity and confidence of an employee has declined, the leader must recognize his or her personality characteristics that are important to the employee. By doing this, the leader has a better chance of helping the employee to increase his or her level of maturity. When the degree of maturity returns to normal, the previous internal organizational stability is restored. This model would help a project manager to get an overview of the leadership situation in times of uncertainty, being useful when reviewing the leadership characteristics to better adapt it in times of uncertainty.

This research has provided an overview focused on the relationships between uncertainty factors and project performance, with leadership characteristics among building refurbishment project managers as a roadmap. Fourteen leadership characteristics associated with uncertainty and project performance factors were identified. In addition, a knowledge gap was revealed, so it was observed that only a few studies have been conducted on leadership characteristics among building refurbishment project managers, specifically on the management of uncertainty factors. However, further empirical research is recommended to justify and validate the aforementioned findings.



This study is expected to provide new information to the existing body of knowledge. The first contribution area is conceptual, with the concept of uncertainty factors in the construction of refurbishment projects. The second area is methodological, which consists of verifying and validating the scale to measure the dimensions of the relationship between uncertainty factors and project performance. In addition, the methodology can be extended through statistical testing of the mediating effects of leadership characteristics among building restoration project managers. And it could be extended to a third area that would relate to empirical contributions, where research analysis can be conducted to extend and verify the integrated effect of uncertainties on project performance with leadership characteristics of project managers. The ability to manage uncertainty factors will improve project performance and will help to control cost variations, time variations and quality. Finally, future studies can also be conducted to replicate the proposed research model.

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