The P.I.L.L(Power, Influence, Leadership, Learning) Approach To Construction Management

**Dr. Aaron Chadee**

Department of Civil and Environmental Engineering   
The University of the West Indies,St Augustine

**Keston N. Peterson**   
Department of Civil and Environmnetal Engineering   
The University of the West Indies, St Augustine

**Dr. Ravi Ande**

Department of Fabric and apparel Sciences

Lady Irwin College, University Of Delhi

New Delhi, India.

***Abstract****— The construction sector is well-known for being fast-paced and constantly changing, and key components are essential for achieving successful project completion. These crucial factors encompass the effective utilization of Power, Influence, Learning, and Leadership. This research paper aims to investigate the impact of P.I.L.L (Power, Influence, Learning, and Leadership) application in the construction industry and assess its effectiveness on project completion. Additionally, the primary purpose of this project is to contribute valuable insights to the field of construction management by illuminating crucial aspects of the topic under investigation. These aspects include power tactics, influential tactics, core learning elements, and leadership approaches that offer potential solutions to construction projects facing the risk of failure. The inception of data collection for this project involved the active involvement of seasoned professionals boasting more than two decades of experience in the construction industry. Utilizing the Delphi Method questionnaire as the foundation, a compelling survey instrument was formulated and subsequently distributed amongst a diverse group of over 100 proficient practitioners within the construction sector. The findings retrieved in the research paper indicated a significant knowledge gap among most individuals regarding the intricacies of Power, Influence, Learning, and Leadership within the construction industry. The findings demonstrated a lack of understanding regarding the dynamics of these essential elements, as well as their practical application and potential outcomes once effectively implemented. However, it was observed that power and influence are key factors in an employee’s ability to provide successful project delivery and outcomes, which is directly proportional to the learning and leadership qualities persons of authority must possess. The findings suggest a requirement to enhance awareness of power, influence, learning, and leadership as essential elements in the construction industry. This heightened awareness can drive positive changes in overall project outcomes.*

***Keywords****— power; influence; learning; leadership; empowerment; performance; effectiveness; construction industry; tactic; power tactics; influential tactics; Delphi technique; content analysis; positional power; expertise power; behavioural tactics; rational tactics.*

# **INTRODUCTION**

Recognition of structures' influence, power, learning, and leadership on construction projects is sparse yet has been well recognized in the general construction management literature (Walker and Newcombe 2000). Power and influence provoke – still to today (Ricken 2006). Even though power and influence are increasingly able to draw attention in both a practical and theoretical sense, their analysis is then crisscrossed by huge simplifications and false comparisons that make understanding the term much more challenging. Not only do the term's popularity and diffuse nature interact so that the supposed, still colors the debate of the term and thus tempts us to support long-outmoded interpretations. “Evidence of a phenomenon only increases the raging ‘uncertainty of the term’; but also because the idea of power and influence, being deeply rooted in daily life, rarely escapes the predominance of lifeworld ascriptions of significance, so that attempts at conceptual precision and systematic readjustment are often simply vain in the face of the persistence of familiar significance, but most of all because familiar judgment ‘that power and influence are evil in itself” (Ricken 2006).This research paper specifically sought to redress this position by reviewing the literature of Power, Influence, Learning, and Leadership and relating it to the management of construction projects to identify those characteristics which take precedence in small to large-scale projects. This approach will be charted through the Theory of Planned Behavior (TPB), which will provide a new perspective to construction management research, illustrating how Power, Influence, Learning, and Leadership affected persons of important roles’ behavior on project outcomes. The pace of change at this present time is fast, and we are assured to encounter new challenges with a lot of uncertainties. The proposition that the economic and social well-being of society, inclusive of those in it, greatly depends on the effective and efficient performance of organizations of varying kinds (Wan Muda, Ab Halim, and Libunao 2017), which in turn clutches on adequate or excellent leadership, learning, and management capability. (Brown and Posner 2001) explained learning and leadership as two rich lines of research, where one is about how people learn and the other is about how people lead. “Indeed, the entire process of learning is a journey of change- a change that is growth enhancing and development.”(Mazlan Ismail 2018) With the increasing importance of learning and leadership in project-based organizations, innovative leaders are essential for the sustainable development of construction projects (Mazlan Ismail 2018). The question now arises, “What relationship does the way people learn have with the manner in which they lead?” The construction industry plays a pivotal role in economic development locally, regionally, and internationally. In construction, the involvement of complex human interaction and incompatible interests are not taken into consideration, specifically through the lens of Power, Influence, Learning, and Leadership. The aim of this research paper is to investigate the impact of P.I.L.L (Power, Influence, Learning and Leadership) application in the construction industry and assess its effects on project completion.

**Research Objectives:** Through a meticulous examination of these facets, this study aims to contribute valuable insights into the mechanisms of leadership effectiveness and strategy in the construction industry, thereby providing a foundation for enhancing leadership practices and outcomes in this field.

R1:To identify the various categories of power and tactics that are presently used and examine their application within the construction industry environment.

R2: To identify the various categories of influence and tactics used and examine their application within the construction industry environment.

R3: To identify whether learning has a direct effect on leadership in the construction industry.

R4: To identify whether influence has a direct effect on leadership in the construction industry.

R5: To identify weather power has a direct effect on leadership in the construction industry.

**Research Questions:** The following research questions were formulated based on the aim and research problem: Q1: Does power have the ability to push or promote actions from persons without using a variety of tactics? Q2: Does influence have the ability to push or promote actions from persons without using a variety of tactics?Q3: How does learning affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?Q4: How does influence affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?Q5: How does power affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry? The main objective of this thesis focusing on Power, Influence, Learning, and Leadership within the construction industry can offer significant insights into leveraging these principles to enhance the efficiency and safety of construction projects. The research sheds light on gaining a deeper comprehension of how power, influence, learning and leadership can be employed to yield favorable results, like allocating resources and creating opportunities, as well as to produce adverse outcomes, such as perpetuating oppression and exploitation. This extensive scholarly inquiry endeavors to discern and proactively engage with project outcomes, leveraging the foundational principles of Power, Influence, Learning, and Leadership. The present paper adheres to a concise scope of fifteen thousand words and is meticulously structured, encompassing the following sections: Abstract, Introduction, Literature Review, Methodology, Results and Findings, Discussion, Conclusion, Recommendation, Limitations, and References. In the pursuit of this study's objectives, a judicious desktop approach was adopted, meticulously curating information from reputable sources, including peer-reviewed journal articles, electronic publications, and subject-specific textbooks that align closely with the overarching theme of the thesis.

# **2.LITERATURE REVIEW**

1. 1. **The Theory of Planned Behaviour (TPB)**

The TPB is being utilized to conduct an in-depth case study in a challenging multi-project environment. In accordance with (Wynn 2022), “the TPB claims that an individual’s behaviour as resulting from intentions, which in turn are influenced by attitudes, subjective norms, and perceived behavioural control.” The TPB has been utilized in several study investigations to comprehend behavior in a variety of contexts, from private to organizational. (Wynn 2022) continued by saying that "despite its widespread use, the application of the TPB to construction management research is novel." Through the lens of the TPB, this research illuminates actors who rejected the influence of structure and battled the forces of agency.This research took a case-study approach to obtain an in-depth appreciation of events and phenomenon of interest in its natural real-life context. It brings a multi-faceted understanding of complex issues and in return provides a holistic view of the research.

* 1. **Power and Power Tactics within the Construction Industry**

The construction sector is not unfamiliar to difficulties; in accordance with (Outridge 2019) “the basic features of the Construction industry is that it is largely made up of many small and medium enterprises who represent approximately ninety-five percent of the companies employed in construction activities.” The source and application of Power, Influence, Learning, and Leadership in organizations have received little attention in regard to their effects on the management of construction project,while being rather thoroughly research and developed in the broader management literature. The terms “influence” and “power” are frequently used interchangeably and without qualification. (Stokman 2011) The article **“Power and Influence as a Political Phenomenon”** raised an important point, where he garnered information that power and influence in social reality are certainly not as straightforward as examples suggest. Due to the mere fact, “Power can be a source of influence and influence a source of power. And second, processes occur whereby positions of influence are transformed into positions of power or, conversely, positions of power into positions of influence.” (Stokman 2011). With this perspective, power and influence have been introduced as essentially different phenomena – however intricately interwoven they may be conceived to exist without one another.In an article, **“The Power of Power- Questions to Michel Foucault”** written by (Ricken 2006) the author addressed the problem by rewording the query “what is power?” into the question: “to what problem can power be seen as a response.” Through the exploration of the paper, the author came to an elucidation that to question power means also to ask what makes us governable and enables us to govern. The way by which power is interpreted leans heavily on the way in which persons understand themselves. (Ricken 2006) went further to discuss that power does not only have sematic difficulties which are supposedly unnecessary burdens on the idea of power; because the term is assumed to be clear, although it’s very use caused interpretation problems. (Fryer 2007 ) brought some clarification to “power” where Fryer looked at power from a management perspective. He distinguished managers from others in their organizational setting, authority and the ability to get objectives completed, is by having “power” over others. (Fryer 2007 ) concluded that, “managers must know why people co-operate with them, because this is the basis of their power.” (Fryer 2007 ).Fryer went further to explain the five main power bases recognized in construction management as follows:

1. **Resource or Reward Power**

The manager can impact the ruminations by controlling some of the resources and rewards that other people desire.

1. **Positional Power**

Due to their position inside the organization, managers have some authority. This is frequently acknowledged as a legitimate power or role power.

1. **Personal /Referent Power**

Some managers have the charisma, presence, or personality to persuade people without compensated for other strategies. It occasionally works and with specific individuals. It is seldom dependable to regularly replace Positional Power and might disappear in crisis.

1. **Expertise or Expert Power**

The manager has an advantage over individuals lacking in special expertise and abilities. Most managers have a skill that their employees don’t, which strengthens their position.

1. **Coercive Power (Special case)**

Coercive Power is another source of power that is based on the threat of the fear that it merely creates. This strategy is typically used after all previous efforts have been determined to be fruitless.(Fryer 2007 ) explained that managers should understand the kinds of power which are utilized and observe the reactions and responses from employees.“People respond in different ways. They may accept power, ignore it or rebel against it” (Fryer 2007 ). The author went further to elaborate on the fact that most managers use a combination of strategies, incentives, legal requirements, regulations, rules, punishments, knowledge, and personal traits to accomplish their goals. The approaches heavily depend on the job at hand, the individuals involved, and the organization's level of support for the manager.**“Thinking Ahead: Power Tactics”** a journal article written by (Norman H. Martin 1956) examined executive functions in power environments through biographies of well-known leaders in history, from Alexander the Great to Theodore Roosevelt. The author has also explored the lives of successful industrialists like Rockefeller and Ford. In accordance with (Norman H. Martin 1956) from the examination of the aforementioned expletory persons, it has come to be understood that“beneath the general principle, attitudes, and ideals of ‘human relation’ lie the actual tactics and day-to-day techniques by executives achieve, maintain, and exercise power.”(Norman H. Martin 1956)These hard practical tools sometimes go unnoticed in the contemporary zeal to democratize business practices and the working environment, despite the fact that they still exist and, in many respects, follow Niccolo Machiavelli’s rejected admonition. Conversely, it is of the time we begin to have formidable and perspicuous discussions as them being important in their own right, whether good or bad (Norman H. Martin 1956). According to (Norman H. Martin 1956) “Executives whether in business, government, education, or the church – have power and use tactics.” This statement was agreed upon by (College 2022) where the author specifically indicated “people use a variety of **power tactics** to push or prompt other action through three categories: Behavioural, Rational, and Structural.”

1. **Behavioural Tactics** A gentle or strong strategy may be used. The relationship between the individual and the targets is exploited through soft techniques. Hard methods, on the other hand, take a forceful stance.
2. **Rational Tactics** While nonrational tactics focus on subjectivity and emotionalism, rational tactics consider the use of reasoning, logic, and objective judgment.
3. **Structural Tactics** This strategy takes use of certain relationships between various jobs and positions. Negotiations and other bilateral strategies need reciprocity from both the target and the person influencing them. As stated by (College 2022) “people tend to vary in their use of **power tactics**, with different types of people opting for different tactics.” This can be identified by a person in different group situations and according to whom they are trying to influence.
   * 1. **Case Studies** In an article written by **(Liu and Fang 2006)** titled **“A Power-Based Leadership Approach to Project Management”** the authors examined the effects of the project managers' referent power, positional power, and expert power - to power-sharing and power-amassing - and found that the project manager's innate personal traits and credentials are crucial to his/her power exercising, in order to inspire team members to ensure management effectiveness. The authors presented a theoretical claim, “The effects of project managers’ positional and personal (referent and expert) power upon team members’ performance are indirect and via the modification of team members’ motivation.” (Liu and Fang 2006) through a structural equation model developed by the authors. It was identified that the positional and personal authority of the project manager both significantly affect the performance through motivating the team. The manager's referent power, expert power, and positioning power have respective magnitudes of 0.2, 0.20, and 0.03 on the performance of the members. To bridge the power gap and, in particular, to increase team members' intrinsic motivation through empowerment and power-sharing, project managers employ their personal power (referent power and expert power). Furthermore, according to (Liu and Fang 2006) they came to the conclusion that power-amassing in raising members' drive to enhance performance. Power-amassing, on the other hand, has little impact on members' intrinsic motivation. The authors explained that positional power has little to no influence on people's willingness to press for or support initiatives and that referent power—a power that the project manager possesses—is more important for motivating people. Finally, the authors evaluated the effects of different power sources (referent power, expert power, and positional power) on members' performance and extrinsic motivation. They found that referent power had a 0.20 performance score and a 0.75 extrinsic motivation score, expert power had a 0.03 performance score and a 0.12 extrinsic motivation score, and positional power had a 0.02 performance score and a 0.08 extrinsic motivation score. An article titled **“The positive use of power on a major construction project”** written by (Walker and Newcombe 2000) explored the role of power in project procurement using a case study from Hong Kong, which highlights the influence of effective power utilization on project outcomes. The growth of the Hong Kong University of Science and Technology was the subject of the writers' investigation into a real-world scenario. The project had an estimated opening date for 1994 to have the first intake of students for the 1994 – 1997 triennium, however, the project became a ‘cause celebra’ due to a apparent cost-overrun from $280 million USD to $420 million USD. A slew of early-project occurrences that later became the subject of mostly baseless allegations contributed to the cost overrun problem. The activities included (1) the architecture company division assigned to serve as the project designers/consultants; (2) the contribution from the Hong Kong Jockey Club and the consequent selection of the Jockey Club as project managers; and (3) moving forward the university's opening date. The Hong Kong government made the decision to form a planning committee up of a group of competent individuals from various backgrounds. The terms of reference were the only documents given to the team to establish the University, which solely outlined the vast majority pupils enrolled and the extensive nature of the University. Hence the scope of the project was ambiguous and grey in nature. It also had the potential for informal authority – due to the regard in which the membership on the planning committee was held, by persons in Government and the community because of their expert and referent power. To attain an opening date of the 1991–1994 triennium, The Hong Kong Jockey Club was introduced as a significant supplier of finances for the project and as project managers. In order to accomplish this, the Chairman of the Planning Committee was knowledgeable that working outside of the normal Government procedures was necessary, therefore, the Jockey Club approved to generously donate a significant amount of US$190 million towards the capital cost of construction to expedite the project. In the long run, the capital cost increased to $420 million USD and the Jockey Club was responsible for donating $240 million USD. The approach to the Club simply stems from referent power outside the formal authority structure. Additionally, the Jockey Club's influence was so great that the Government was willing to provide a blank check for the remainder of the $190 million USD commitment, primarily because of the Jockey Club's track record of completing projects on schedule and under budget. The consultants were under the club's strict control, and the club prevented them from using their knowledge to their advantage. The conflict between the Club and the consultants was beyond dispute, especially since the Club's referent authority was strengthened by reward/coercive power due to their endorsement of future projects that the consultants would want to collaborate on. In the end, both the Planning Committee and the Jockey Club used their professional networks to form internal and external coalitions to advance the opening date to the 1991–1994 triennium. This resulted in a win–win scenario where the timing of the opening was later seen to be more advantageous than first thought. The article **“Face-saving tactics as an aid to construction negotiations in Hong Kong”** explored the role of ‘face’ in governing the behaviour of negotiating parties. The study found common face-saving strategies employed by construction negotiators. Subsequently, the main objective of this paper was: first, to develop the generic types of face-saving tactics used in construction negotiations; second, to investigate the relationships between the use of these tactics and the respective outcomes; and third, the effects of face-inducement factors on the tactics-outcomes relationships are examined. According to the author's description in the paper, "face" refers to a person's purported feeling of a favorable image in relation to social interaction, and is one of the intangible variables that play a tangible and crucial part in construction negotiations (Yiu and Chung 2014). (Yiu and Chung 2014) identified an array of “face-saving tactics” such as: polite talking and being courteous, not displaying negative emotion at the negotiation table, not breaking promises, allowing thinking time to calm down when counterparts feel insulted, angry, or frustrated, avoiding discussions of specific issues that cause embarrassment, being soft spoken and asking irrelevant questions to change the subject to prevent direct confrontation. The authors identified once these tactics were implemented, harmony was maintained, avoiding offending situations was achieved, future business was maintained, ambiguity in understanding of counterparts’ priorities were obtained and mutual agreements were facilitated. (Yiu and Chung 2014) concluded that these face-saving tactics do indeed contribute to positive outcomes in the construction negotiation process once applied correctly. Loosemore explained, “the essence of the bargaining processes are ‘tactics’ or ‘moves’ which parties use to influence each other to come closer to their position.” In light of this, the author conducted research by examining the communication and behavior patterns that developed in the wake of four disagreements that arose during the construction phase of four normally purchased building projects. In an article written by (Loosemore 1999) titled “**Bargaining tactics in construction disputes”** where the purpose of the paper was to investigate how construction disputes escalate. The author examined the behavioral complexities of the bargaining process during construction disputes and found that there are four major categories of "bargaining tactics" employed in the sector. Namly the kinds A, B, C, and D that exhibit the traits listed in **Table 1** below.

Table 1: Bargaining Tactics (Loosemore 19

|  |  |
| --- | --- |
| **Code** | **Cognitive Characteristics** |
| **A** | “Adversary is seen as aggressive. Only intentional war is possible. Escalation is easily controllable. The strategy is military. Aggressive warring approach to deterrence. Open use of force, fait accompli, or strong coercive action are seen as the best way to resolve a dispute. Inwardly orientated, little consideration given to possible response of adversary and its escalating impact. Define and measure success in the military rather than diplomatic terms.” |
| **B** | “Control of disputes is possible to a point where unintended escalation is possible. It is possible to understand the dynamics of escalation and, thereby, avoid the point where control is lost. Probabilities of escalation can be assigned to various tactics and strategies. Incremental small step escalations are seen as timid and a sign of weakness and are likely to lead to an escalation. Failure to show resolve is the most common cause of war.” |
| **Type B-I** |
| “Coercive diplomacy (i.e. verbal threats of extreme actions and all-out-war) and bluffing are the best means of dispute resolution. Escalation is assumed to come from failure to communicate a determination to protect one’s vital interests at any cost. It is dangerous not to brandish the ultimate weapon.” |
| **Type B-II** |
| “Bluffing and threats are dangerous since they may induce a counteractive aggressive response inadvertently. Best to use limited force to avoid an all-out war rather than to use threats of all-out war.” |
| **C** | “Difficult to determine whether an adversary is offensive or defensive, meaning tactics must be cautious and context driven rather than automatic. Two images of escalation: failure to show resolve and spiraling responses to perceived provocations. Many unpredictable paths to escalation, difficult to avoid slippery slopes, brink cannot be recognized in advance. Only partial control of dispute is possible and threats or use of power dangerous. Tread carefully, limited escalation and compromises preferred. Carrot and stick approach advocate as a means of manipulating an adversary.” |
| **D** | “Assume the adversary operates in a defensive mode. Control of dispute is extremely problematic if not impossible if even a modest emphasis upon coercion. A highly cautious approach in fear of triggering uncontrollable escalation. Accommodation and compromise are the best means of resolution. Entire effort aimed at avoiding bargaining situations.” |

The initial **first** construction project focused on a dispute where excavation works were happening near a roadway, and the bill of quantities contained an anomaly. The contractor claimed that permanent earthwork was required and should have been measured, but the Bill of Quantity (BOQ) only permitted the contractor to provide a quote for temporary earthwork support. The contractor vehemently objected and refused to support the excavation operations until the disagreement was settled, despite the quantity surveyor's assertion that temporary earthwork support could be accomplished. Unfortunately, the excavations collapsed during the construction shutdown, resulting in additional expenditures and delays, which prolonged and intensified the disagreement into a claim for loss and expense in addition to an extension of time. The quantity surveyor's negotiating tactic was classified as Class D, according to the author's examination of the case, due to the fact that it was more amicable and defused tension, which led to an analogous reaction from the contractor.The **second** issue involved the installation of a lift into a brand-new school in the middle of the building phase, which had significant organizational ramifications for the contractor and led to the contractor's request for a raise in fee payout and time entitlement. Since there was, at worst, a climate of uncertainty regarding the different negotiation codes between the two primary interest groups during the dispute, the author classified this disagreement as a Class C conflict. The contractor first assumed a defensive posture, which was apparent at the outset of the disagreement, but the consultant's soothing reaction rapidly subdued him.The **third** disagreement centered on a retaining wall that was discovered to be inadequately planned midway through the project's construction phase. The engineer's verbal directive to sustain the contractor's information supply and, consequently, advance on site, served as the focal point of the conflict. In essence, when the contractor submitted a claim, the client's quantity surveyor would not accept it since he had not been advised of any revisions. Because both sides unintentionally began utilizing counteractive aggressive behaviors, this disagreement was categorized as Type B-II. The consultant adopted a more conciliatory attitude in an effort to control the issue, but by this point, trust between the parties had diminished and the gesture was not perceived as sincere, which ultimately made this matter reach a litigation stage. Lastly, the **fourth** dispute revolved around a specification change during the construction phase of the project. The matter specifically revolved around responsibility patterns, where new materials were found to be faulty which caused works on the site to stop abruptly. The new materials were bought by the contractor at the request of the architect who furnished the contractor with the supplier listing. During the bargaining session all parties sought to protect their interests by avoiding bargaining and attempting to shun responsibility. Ultimately, the consultant accepted financial responsibility and compensated the contractor. It can clearly be seen that the bargaining code used here was D “entire effort aimed at avoiding bargaining situations.”

**Power and power tactics can be essential for navigating complex social dynamics and achieving success in various personal and professional settings.**

**2.3 Influence and Influential Tactics within the Construction Industry**

In accordance with (Kipnis, Schmidt, and Wilkinson 1980) “organizational psychologists have not been particularly interested in studying the ways in which people at work influence their colleagues and superiors to obtain personal benefits or to satisfy organizational goals.” The author stated this to further elaborate in the paper **“Intraorganizational Influence Tactics: Explorations in Getting One’s Way,”** interests within the organization has centered itself more so on the ways subordinates can be influenced to improve subordinate productivity and morals which can be classified as “leadership” whereas the former can be classified as organizational politics (Kipnis, Schmidt, and Wilkinson 1980). “Within the construction industry, organizations either produce a product or a service to generate revenue, they have a planned system within which to create those products or services and the necessary people to manage the systems. Subsequently, to manage the people, an organization must implement a structure that best suits the company’s goals and objectives, inclusive of the most efficient management procedure and practices to have the organization’s department operating efficiently. Different divisions and departments end up with their own policies, practices, and procedures, which may not always align with those of the organization as a whole.” (Kipnis, Schmidt, and Wilkinson 1980).(Furst 2011) stated in an article titled **“The Importance of Influence”**, “different divisions and departments end up with their own policies, practices, and procedures, which may not be aligned with those of the organization.” Which was also stated by (Kipnis, Schmidt, and Wilkinson 1980). As an organization grows and ventures into new waters, they become more complex in nature (Furst 2011). There are external aspects in addition to internal workings, such as clients, customers, business partners, vendors, suppliers, and contractors; all of whom, in one way or another, must collaborate to achieve success and display some degree of esprit de corps. (Furst 2011) shed light on internal stratification and external complexity, due to the mere fact that they can contribute to barriers to executing tasks and accomplishing a goal. To alleviate these aforementioned contributing factors, (Furst 2011) stated that “cooperating cross-national or influencing peers” can assist in this regard. The author went on to explain how influence may be used to persuade the executive, persuade others to help, collaborate, or perform, and perhaps even persuade direct reports to give it their all rather than just enough to get by.The construction sector is one of the biggest, and it presents a special issue since there exist contracts between the different parties for the award of projects, and one firm cannot order or direct another company's work to be done in a particular way. To insure that tasks are executed correctly by other parties who are not directly connected between various parties, (Furst 2011) listed the following ways in which influence tactics can be exerted, the following are: Rational Persuasion, Inspirational Appeal, Consultation, Ingratiation, Personal Appeal, Formation of a Coalition, Relentless Pressure.“The ability to influence is an essential leadership skill” (Florida 2006). Influence or control should not be confused with power. It is not about employing coercion to get your way; rather, it is about seeing what drives employee dedication and leveraging that insight to boost performance and achieve favorable outcomes.

* + 1. **Case Studies:** (Lee and Sweeney 2001) wrote an article **“An Assessment of Influence Tactics Used by Project Managers”**, where the authors investigated the implications of various influence tactics utilized by project managers within the construction industry, through an investigation of self-reported questionnaires from approximately 616 project managers. The authors concluded that tactics associated with rational reasoning, consultation, and inspiration appeal are in the reported high- use category and have led to push or promote actions from persons. (Lee and Sweeney 2001) also identified that influence tactics based on threats, fear, or assertiveness are in the low-usage group. Lee and Sweeney went further to note that appropriateness of influence tactics and its effectiveness are dependent upon a variety of perceptual and situational factors. Therefore, any single tactic or combination of influence tactics may not be the “best fit” for a particular situation, hence construction/ project managers should make it their duty to make use of a broad array of influence tactics. Construction/ project managers ought to make reading or diagnosing different situations and select suitable influence methods their double-edged sword.(Unger-Aviram, Katz-Navon, and Vashdi 2022) executed an investigation into influence strategies for self-managed teams. The study's aim was to investigate team-level impact strategies linked to dynamic team performance. The authors found through their findings that a high proportion of team members who tend to be assertive was detrimental to team performance in the early stages of team development, while a high proportion of team members who tend to be ingratiating was also detrimental at later stages of team development, while rationality was positively related to team performance. We can identify the comparisons between (Unger-Aviram, Katz-Navon, and Vashdi 2022) and (Lee and Sweeney 2001) through their separate studies into influence tactics.**The greatest influence you can have is when you are not trying to influence, but when other see the clarity of your purpose of the integrity of your actions**

**2.4 Influence and its Direct Effect on Leadership** Subsequently, in accordance with (Fryer 2007 ) “management and leadership are not the same thing. Management evolved with the growth of formal organizations, but leadership is one of the oldest and most natural relationships in society.” The author went further to elaborate that “Managers are appointed, but leaders emerge naturally, whenever people get together to do things” (Fryer 2007 ). Each domain of human effort reaps the advantages of having strong leadership. Due to the characteristics of the construction process and projects, leadership is even more crucial. Because constructed products affect long-term socio-economic development in developing countries, project failure can have disastrous effects on the nation and its citizens as a whole. “Hence, the need for effective and efficient leadership in the construction industry is heavily warranted. With increasing competition in the construction industry verses high demand from users, little resources and knowledge, service providers are striving to enhance the effectiveness in their fields” (Anwar and Balcioglu 2016). Anwar and Balcioglu indicated that “every manager’s role that should be filled in the organization is leadership.” Managers usually have a wrong assumption that they are not managing meanwhile they are effectively leading a group of people towards organizational goals or set of goals. But in truth and in fact, the manager’s position considers just a title, not leadership (Anwar and Balcioglu 2016). According to (Anwar and Balcioglu 2016) “to be an effective leader in the workplace, the manager should have the ability to affect subordinates effectively and positively in order to attain individual and organizational goals.”

* + 1. **Case Studies** According to (Văcar 2015) “influencing others is essential, but it is more than just giving commands. Leaders who inspire, persuade, and encourage can create a common goal and achieve results; leaders must master the ability to influence others.” This statement was supported by (Anwar and Balcioglu 2016) in an article titled **“The Relationship Between TransformationalLeadership Characteristics and Effectiveness: A Case Study on Construction Companies in Erbil”**, “every manager’s role that should be filled in the organization is leadership. Managers usually have a wrong assumption that they are not only managing meanwhile they are effectively leading a group of people towards an organizational goal or set of goals through the process of influence” (Anwar and Balcioglu 2016). To study the connection between the qualities of transformative leadership and its efficacy, the authors conducted extensive research in five of Erbil's leading construction companies. For their analysis of the current study, Anwar and Balcioglu used an empirical quantitative methodology. The authors provided examples of the relationships between efficacy as the dependent variable and the independent factors (intellectual simulation, inspiring motivation, idealized impact, and individual consideration). After doing their investigation, the authors discovered that idealized influence is the trait that transformative leaders value most highly. This independent variable has a value of 0.737 > 0.01, indicating that the idealized influence and effectiveness had a very high positive relationship. In the housing industry, (Oyaya 2017) in his study initiated a thorough investigation into **“Influence of Leadership Styles on Performance of Construction Projects,”** wherethe author insinuated that influence can affect the leadership style within the construction industry. Leadership styles are often shaped by various internal and external factors, and influence is one such factor (Oyaya 2017). Oyaya went further to explain that external factors such as industry norms, regulatory requirements, and stakeholder expectations can all influence a leader's style. For example, if there is a strong emphasis on safety within the construction industry, a leader may adopt a more authoritarian style to ensure that safety protocols are strictly followed. Whereas internal factors such as organizational culture, values, and individual personality can also impact leadership style. If an organization values innovation and creativity, a leader may adopt a more collaborative and participatory style to encourage new ideas and solutions. Influence can also come from various sources such as employees, peers, superiors, and even external stakeholders. The leader's willingness to be influenced by these sources can shape their leadership style. “Overall, influence can play a significant role in shaping the leadership style within the construction industry. It's important for leaders to be aware of these influences and to be adaptable in their approach to leadership.” (Oyaya 2017).A study undertaken through (Chadee, Hernandez, and Martin 2021) titled **“The Influence of Optimism Bias on Time and Cost on Construction Projects**” investigated the psychological effect of optimism bias as a root cause for the delays in cost overruns in projects. The authors confirmed that “project leaders and decision makers exhibit moderate levels of optimism bias where the top three influential factors were: project location, environment impact and historic preservation, and labour disputes.” (Chadee, Hernandez, and Martin 2021). The authors explained that “the propensity to be “overly positive” when forecasting and planning is viewed as optimism bias” (Chadee, Hernandez, and Martin 2021). The writers went further to explain that overconfidence has been reported in organizational dynamics which directly affects the handling of sensitive information, management, and effective communication. Chadee, Hernandez, and Martin concluded that the lack of recognition and accounting for optimism bias risk, decisions are solely based on project planner and key decision makers heuristics. “These decisions can negatively impact time, and costs, limiting the overall productivity and performance of a project” (Chadee, Hernandez, and Martin 2021). The authors also explained that cost overruns are influenced by an array of variables such as: politics, social, technical, and psychological roots. In alignment to (Chadee, Hernandez, and Martin 2021) study into **“The Influence of Optimism Bias on Time and Cost on Construction Projects**”. (Chadee, Ray, and Chadee 2021) conducted an investigation into **“Systemic Issues Influencing Technical Certainty in Social Housing Programmes in s Small Island Developing State.”** Where the authors investigated housing construction programmes in Caribbean Small Island Developing States (SIDS) to further understand the root cause of cost overruns within the realm of public sector housing programmes (PSSHP’s). The objective of research was to determine the degree of cost overruns due to political and technical influences on PSSHP’s and, subsequently, how these vested influences affect the programmes’ finial cost performance. Through though exploratory of case studies of cost performance in public housing programmes over the first decade the (Chadee, Ray, and Chadee 2021) were able to draw a conclusion. Chadee, Ray, and Chadee concluded that the technical team's acceptance or illusion of an inefficient organizational culture, along with compliance with politically motivated directions, contributed to the cost overruns phenomena. Further investigation by the authors revealed that cost overruns were associated with PSSH projects where political pressures predominated over technical impacts. Political forces are also more accountable than technical causes for cost overruns, poor decision-making, and span of control. **"A true leader has the confidence to stand alone, the courage to make tough decisions, and the compassion to listen to the needs of others. They do not set out to be a leader but become one by the equality of their actions and the integrity of their intent." - Douglas MacArthur**
  1. **Power and its Direct Effect on Leadership** In an article written by (Staff 2019) titled **“Power and Leadership Trends”** a research was done to learn more about how leaders utilize power and how people and organizations may enhance their leadership via effective use of power. The author interviewed top executive executives in the construction business to obtain information, and the data revealed certain issues around leadership and the allocation of authority. The data was evaluated by staff, who found that 53% of the respondents agreed that their business rewards leaders for empowering people while 60% of the respondents said they believed their organizations worked to empower their workers at all levels. More than half of respondents said that in their organization, power is concentrated among a small number of chosen individuals; 28% of respondents agreed that top leaders in their organizations abuse their power; and only 29% said that their organizations provide training for their leaders on how to use their power effectively. The research highlights the dynamics of power and leadership within the construction industry, illustrating the need for organizations to address power imbalances, promote empowerment, and equip leaders with the skills to utilize power responsibly and effectively. The author went further to suggest that power can have a direct effect on leadership in the construction industry, as in any other industry. Due to the fact that power can come from various sources such as expertise, position, reward and coercive power – which have been defined in detail by (Fryer 2007 ) in Section 2.2. (Staff 2019) also indicated that in the construction industry, leadership is important for achieving project goals and managing the team effectively. In an article titled **“Effective Leadership in the Construction Industry”** (Abdelhaleem and Seymour 1994) raised the question of how applicable models and approaches developed in settings other than construction are, when applied to the construction industry. The author came to the conclusion that task structure and "positional power" exerted by leaders were determined to be the two most important determinants of the leader's performance. “The concept of power and leadership have much in common, it is assumed that people are leaders because they exercise power, but that does not insinuate that leadership and power are the same thing” (Nayar 2017). According to (Nayar 2017) leadership acts reflect a choice of these tools, but in any organization, power, coercion, authority, and command must be engaged for the fulfillment of certain tasks. These instruments, being a key component of a leader, always relying on these instruments and even if he/ she has to make use of them, it should be used as a last resort. The author indicated that the leader who possesses power must be able to persuade, influence, motivate and inspire. The study **"Power and Leadership: An Influence Process,"** authored by (Lunenburg 2012), delved into the correlation between power and leadership. In this research, the author categorized different types of power into organizational power (legitimate, reward, and coercive) and personal power (expert and referent). The study revealed that personal power had a stronger association with employees' job satisfaction compared to organizational power sources in **Table 2**. The writer emphasized that these various power sources should not be viewed as entirely independent from each other. Instead, leaders tend to utilize a combination of different power sources depending on the specific situation they encounter.

**Table 2: Synthesis Table Cont’d**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item**  **No** | **Author** | **Title** | **Problem** | **Methodology** | **Key Findings** | **Limitations** |
| **(Date)** |
| 1 | **(Liu and Fang 2006)** | “A Power- Based Leadership Approach to Project Management” | According to research, leadership theories are connected to power structures, and project leaders may influence and encourage others through exercising authority. | In order to design a structural equation model to calculate the direct, indirect, and cumulative causal effects among latent components, the paper proposes to explore postulations through route analysis. | The positional and personal authority of the project manager were found to have a substantial effect on the performance through influencing the members' motivation. The manager's positioning power, referent power, and expert power have respective magnitudes of 0.2, 0.20, and 0.03 on the performance of the members. In order to close the power gap and increase team members' intrinsic motivation through empowerment and power-sharing, project managers employ their personal power (referent power and expert power). Additionally, according to (Liu and Fang 2006), they came to the conclusion that power-sharing is more successful than power-amassing in raising members' incentive to enhance performance. | A wider population size was not taken into consideration to acquire more data. |
| 2 | **(Walker and Newcombe 2000)** | “The Positive use of Power on Major Construction Projects” | The source and use of power organization have drawn considerable attention in regard to its impact on the management of construction projects, despite being relatively well established in the general management literature. | Specific case studies that demonstrated how power may be used for good and the effects they had on initiatives run by the Hong Kong University of Science & Technology. | It was clearly identified that professional coalition was strong used to have situations dissolved as well as to expedite particular aspects of the project’s life cycle. It was also identified that referent power was used in order to acquire great achievements within the project. | The limitation was identified in this article through the mere fact that it took a theoretical approach through the use of case studies only and no quantitative data. In addition, this case study demonstrates only positive uses of power. |
| 3 | **(Lee and Sweeney 2001)** | “An Assessment of Influence Tactics used by Project Managers” | According to research, project managers need to be able to effectively change their team members' behaviour. The paper delves deeper into the influence process | A quantitative approach was adopted. Questionnaires were distributed to project managers to rate how frequent they used influential tactics. | In this study, the project managers' reported usage of high- and low-use influence strategies with their team members was clearly recognized. The employment of logic and consultation strategies is among the most common strategies. However, strategies including inspirational appeals are also applied rather frequently. | There are limited empirical studies on the problems of benchmarking in developing countries. |
| 4 | **(Sujana 2020)** | “Contractor project manager leadership style based on path goal theory to support construction sustainability” | The significance of sustainability in construction projects continues to increase. Trained employees are required to apply sustainability to construction projects. | This study used a quantitative approach on the questionnaires distributed. The research was conducted in Bandung and Jakarta. | The downside of not utilizing learning and continuous education within the construction industry. Some of these downsides where identified during the analysis of the data retrieved from the questionnaires distributed include: inability to adapt to changing industry trends and technology, poor decision-making, inability to mentor and train employees, reduced job satisfaction | A wider and more diverse sample size could have been targeted. |

As a result, the study introduced the concept of "empowerment," which has emerged as a crucial factor in enhancing work outcomes. In conclusion, the research sheds light on the intricate relationship between power and leadership, showcasing the significance of personal power and the adoption of diverse power sources for effective leadership and empowerment in the workplace.(Fryer 2007 ) explained that empowerment aims to remove close management command unnecessary rules, procedures and other restrictions. The author explained that giving employees more control over their work, individually and as a group, aid in job satisfaction and work improvement. This privilege managers give to employees means that “managers must, to some degree, give up being in authority and spend more time being an authority.” (Fryer 2007 ). Seen in this way, empowerment does not lessen the manager’s power, but change the way it is applied (Fryer 2007 ). **The concepts of power and leadership are interconnected. While an individual may exert power without being a leader, an individual can’t be a leader without having power.**

* 1. **Learning and its Direct Effects on Leadership** The construction industry in its current state requires a combination of technical knowledge, interpersonal skills, and continuous learning, which in return can help leaders stay up-to-date with the latest industry practices and technologies, as well as develop their communication, problem-solving, and decision-making skills (Fryer 2007 ). The author went further to explain that learning about new construction methods or materials can help leaders make informed decisions about project design and execution. “Learning about construction/project management and leadership strategies can help leaders effectively manage their teams and lead them to success.” (Fryer 2007 ) As the construction industry evolves and becomes more complex, leaders who invest in their own learning and development are more likely to adapt and thrive in this changing environment (Brown and Posner 2001). In contrast, (Sujana 2020) indicated in a paper titled **“Contractor Project Manager Leadership Style Based on Path Goal Theory to Support Construction Sustainability”** the downside of not utilizing learning and continuous education within the construction industry. Some of these downsides include:
* **Inability to adapt to changing industry trends and technology:** The construction industry is continually evolving, and new technologies, materials, and practices emerge regularly. Leaders who do not engage in learning and continuous education may find it challenging to keep up with these changes, leading to a lack of competitiveness and reduced productivity.
* **Poor decision-making:** Effective decision-making in the construction industry requires a deep understanding of construction techniques, cost control, and project management. Leaders who do not engage in learning may lack this understanding, leading to poor decision-making that can negatively affect the project's outcome.
* **Inability to mentor and train employees:** Leaders who do not engage in learning and continuous education may not possess the necessary skills and knowledge to mentor and train their employees effectively. This may lead to a lack of skill development and training for the employees, which can negatively affect the project's outcome.
* **Reduced job satisfaction:** Leaders who do not engage in learning and continuous education may become complacent and stagnant in their roles. This can lead to reduced job satisfaction and motivation, which can negatively affect the project's outcome and team morale.

# **3.Research Methodology**

1. 1. **Introduction** The components of the research strategy comprise of; the targeted population, proposed sampling strategies, data collecting procedures, data analysis techniques, ethical considerations used in the study, and operational definitions of variables are all described in detail in this chapter along with the research methodology. This chapter's main topics are briefly discussed.
   2. **Research Approach** “Research approach provides a plan and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. It aims to answer complex research questions, test specific hypothesis, and specify the process of data collection.” (Thangaratinam and Redman 2005) This study adopted the Delphie technique, which is, “a way of obtaining a collective view from individuals about issues where there is no or little definite evidence and where opinions are important. The process can engender group ownership and enable cohesion among individuals with diverse views” (Thangaratinam and Redman 2005). This particular data collection method can be used as an alternative to conventional meetings, avoiding problems arising from powerful personalities, group pressures and the effects of status. Once this process is completed and the necessary data is retrieved, questionnaires consisting of open-ended questions are circulated to a panel of experts and practicing professionals within the construction industry. The responses to the open-ended questions are analyzed qualitatively by sorting, categorizing, and searching for common themes. “As a forecasting tool, researches have used the Delphi methodology to predict development in a variety of healthcare areas, finance, sports, business, politics and construction” (Thangaratinam and Redman 2005).
   3. **Target Population** Gay, Mills, and Airasian (1996, 111-112) defined a population as, “the group of interest for the researcher”, and differentiated from the sample as, “the individuals selected to represent the larger group from which they were selected”. Sampling is therefore the process of selecting the number of individuals as the sample of the study in such manner that they can represent the larger population from which they were selected (Gay, Mills, and Airasian 1996, 111-112). For this process, there are two main criteria that need to be taken into account, “What do you want to know, and about whom do you want to know it” (Chien and Barthorpe 2009). The study population is comprised of practicing Project/Construction Managers, Project Engineers, Contract Managers, Designers/Engineers/Architects, Lawyers, Quantity Surveyors, Consultants, Company Owners/Directors, etc within the construction industry. The thesis focuses on introducing a new approach to construction management that is designed to optimize project delivery and minimize risk. As such, it is intended to be of interest to professionals who are actively involved in construction projects and are looking to improve their management practices.This paper is expected to provide valuable insight that will be particularly relevant to those who are seeking to enhance their skills and expertise in this field, in conjunction with delivering successful projects.
   4. **Sample Size and Sample Procedure**

“Sampling is the statistical procedure used to select a sample from the population of interest to enable the study and statistical inferences on the population assuming that the sample provides generalized characteristics of the population.” (Thangaratinam and Redman 2005). Purposive sampling was used for this study, which is a non-probability method of sampling (Roberts 2010, 150). This approach is used when the researcher wants to develop an understanding and get insight into a phenomenon being investigated and, in order to do so, must select a sample from which the maximum can be learned (Palinkas et al. 2015). As mentioned previously, the targeted population for this study encompassed individuals from the construction industry of T&T with exposure to and experience in working with construction contracts (Chandee 2021). These included, but were not limited to Project/Construction Managers, Project Engineers, Contract Managers, Designers/Engineers/Architects, Lawyers, Quantity Surveyors, Consultants, Company Owners/Directors, etc. The sampling process involved exploring relevant organizations and experts within the local construction sector and distributing the questionnaires accordingly. The sample comprised of individuals from a number of construction firms throughout T&T, including the following:

* Organizations belonging to various sectors (public and private)
* Organizations of various categories (government agencies, contractors, consultants, etc.)
* Organizations of various sizes (micro, small, medium, and large)
* Organizations of various contractually designated roles on construction projects (the employer, the contractor, the engineer, consultants, etc.)

Distributing questionnaires across the above categories not only aimed to minimized bias from the results, but also allowed the researcher the ability to investigate any significant differences between the opinions/experiences from within these groups, as previously mentioned.

**Sample size**

This sample size formula suggested by (Webb 2022) was used in this investigation.

n is the sample size

N is the Population

e is the confidence level used for sampling

With a population of 100 and assuming e= 5%, a sample size of 80 was sufficient for the study.

* 1. **Research Instruments**

Instrumentation, simply put, describes all the instruments used to collect data for the study (Roberts 2010). The instrumentation used for this research included desk study and a questionnaire survey, for each of the research objectives’ parameters, as also outlined previously in the research model **Figure 1** below. Each type of instrumentation used is described in more detail below.

**Desk Study:** Desk study was utilized throughout the various stages of conducting the research, but was particularly fundamental in conducting and developing the literature review and to develop pertinent sections of the questionnaire. This was found to be an appropriate technique since it involved the collection of secondary data from existing resources that provided an effective, yet low-cost method of data collection. Desk research included the review and acquisition of information from journals, books, articles, websites, blogs, etc., in the research process. These resources were accessed via a number of credible portals including but not limited to the following:

* The University of the West Indies, St. Augustine, Alma Jordan Library’s online resources (databases, e-books, e-journals, dissertations/theses), and
* Google Scholar.

**Questionnaire Survey:** A questionnaire survey was the main instrumentation technique used for collecting data specific to the views, opinions and experiences (attitudinal research) related to the various parameters being investigated on the use of contracts on construction projects within the construction industry in T&T (Chandee 2021). Questionnaires are noted to be one of the most widely used data collection technique for conducting surveys (Naoum 2012, 52) and was found to be an appropriate technique for this study due to the following reasons:

* Effective and low-cost (Naoum 2012, 53) – The questionnaire was developed and modeled on Google Forms for distribution to the sample population. The Google Forms platform was chosen as it was free of charge, user friendly, allowed an unlimited number of responses and permitted the questionnaire to be modelled in accordance with the researcher’s design by offering various sections and response options (open ended responses – short or long answers; closed ended – multiple choice selections. Using the Google Forms platform, the research questionnaire was distributed via sending a hyperlink to the sample population, where the respondents were able to conveniently complete and submit their responses using interfaces such as smart phones, tablets, computers, etc. This posed particularly advantageous due to the constraints imposed as a result of the Covid-19 pandemic during the time of questionnaire distribution. Additionally, it allowed the data from the completed surveys to be exported in a format (CSV file) supported by SPSS for conducting the analysis, which saved on the time taken for coding and input of the data into SPSS.
* Speed (Naoum 2012, 53) – The questionnaire was designed to take the respondents approximately fifteen (15) minutes to complete and submit their responses. The entire process to distribute and ‘collect’ the responses took approximately three (3) weeks. The design of the questionnaire was a crucial part of the study, as the data collected from the survey was essential to fulfilling the purpose of the research and attaining the answers to the research questions (Chandee 2021). The questionnaire was designed to be as simple and straightforward as possible so that the respondents can easily interpret what was being asked and answer as accurate as possible (Abdul-Rahman, Wang, and Yap 2010).
  + 1. **Reliability of Research Instruments** “Reliability is the degree of consistency of a construct. A reliable research instrument will return the same results when the variables are tested severally under the same underlying phenomenon” Mugenda and Mugenda (2003). “The aim of testing reliability is to ensure a reduction in errors and minimize biases this approach was also implemented by” (Chadee, Hernandez, and Martin 2021). Considerations that a researcher should take into account in terms of obtaining valid and reliable data as outlined by Ali (2011, 178-179) were adapted for this study as follow:
* **Triangulation**: the use of multiple approaches to data collection via the desk study and questionnaire survey contributed to the reliability and validity of the research.
* **Population**: the use of a large number of participants in the questionnaire survey also contributed to the collection of reliable and valid data. The population sample was determined as seventy (70) persons using the Kish (1965) equation as described previously, however eighty-three (83) suitable respondents participated in the survey, exceeding the required sample size.
* **Experiences/Professionals**: by ensuring that the respondents were experienced professionals within the construction sector contributed to the reliability and validity of the data. The analysis of the demographic data collected from each respondent on their number of years’ experience and professional backgrounds were deemed to have satisfied these criteria (refer to Chapter 4).
* **Pilot study**: to ensure that the questionnaire was appropriate to obtain reliable and valid data, the pilot study was conducted as previously described.
* **Time**: adequate time for data collection (three weeks) and collation (one month) was given.
* **Electronic system and software**: The use of software (SPSS, Microsoft Excel, etc.) for data analysis was employed to create more valid and reliable results, lessening the opportunity for human errors.

Cronbach’s Alpha measures internal consistency, that is, how closely a set of items are related as a group, which is a test of reliability. It is given by the following formula (Cronbach 1951), however was attained using SPSS:

Where: N = number of items or questions

= the average inter-item covariance among the items

= the average variance of test scores

The dependability coefficient was calculated using the Cronbach Alpha technique. After performing the reliability test, a score of 0.8 was obtained, indicating adequate dependability. This score is higher than 0.6, which is regarded as a high degree of reliability and denotes consistency in questionnaire replies in **Table 3**.

**Table 3: George and Mallery (2003) rule of thumb for Alpha Ranges**

|  |  |
| --- | --- |
| Cronbach’s Alpha | Internal Consistency |
| α ≥ 0.9 | Excellent |
| 0.9 > α ≥ 0.8 | Good |
| 0.8 > α ≥ 0.7 | Acceptable |
| 0.7 > α ≥ 0.6 | Questionable |
| 0.6 > α ≥ 0.5 | Poor |
| 0.5 > α | Unacceptable |

* + 1. **Data Collection Procedures**

This research first obtained approval from UWI Scholar Ethical Approval Board to administer the questionnaires to the public (Chandee 2023). Followed by administering survey questionnaires through Google Forms to practicing professionals within the construction industry (Chandee 2021). Google Forms was able to collate the respondent’s information and present it in an excel format to begin the data analysis process.

**Data Analysis Techniques**

**• Content Analysis Technique**

**This research paper implemented the Content Analysis (CA) approach.**

“Content Analysis is a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data. (CA) is helpful for researchers to quantify and analyze the presence, meanings, and relationship of such certain words, themes, or concepts,” as indicated by (Clarke and Braun 2013). Hence, in content analysis, patterns form an important component of the data analysis process in describing a phenomenon under the study, since it has an aim of highlighting the most salient patterns in deriving meaning within qualitative datasets (Clarke and Braun 2013).

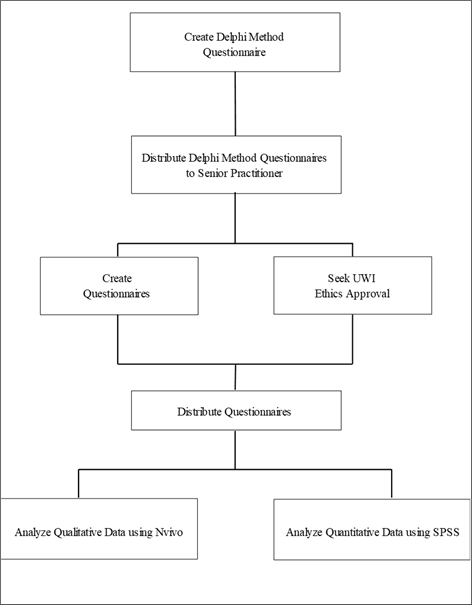
**Data Analysis Techniques**

* **Content Analysis Technique**

This research paper implemented the Content Analysis (CA) approach.

“Content Analysis is a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data. (CA) is helpful for researchers to quantify and analyze the presence, meanings, and relationship of such certain words, themes, or concepts,” as indicated by (Clarke and Braun 2013). Hence, in content analysis, patterns form an important component of the data analysis process in describing a phenomenon under the study, since it has an aim of highlighting the most salient patterns in deriving meaning within qualitative datasets (Clarke and Braun 2013).

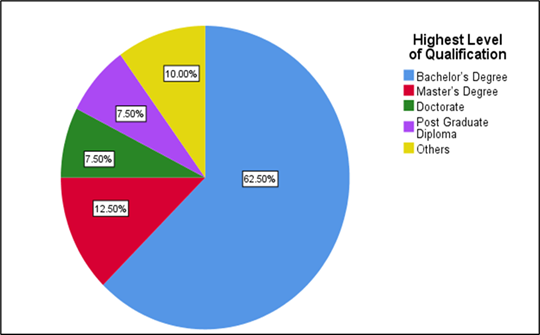
* **Software** According to (EvalCommunity 2023, Chadee 2023) “SPSS version 26 (Statistical Package for the Social Science) is a software package used for statistical analysis in the social sciences, including fields such as monitoring and evaluation. SPSS provides an efficient and organized way to manage large and complex data sets and perform advance statistical analysis, making it an essential tool for monitoring and evaluations professionals.” One of the main features that SPSS provides is data graphical representation in the form of histograms, scatterplots, and box plots. These visualizations can be used to explore the relationship between variables in your data. Another software utilized in this paper was NVivo version 10, “NVivo is the premier software for qualitative data analysis, NVivo allows researchers to manage, analyze, and visualize qualitative data and documents systematically and individually.” (NVIVOWindows 2018). As the software technology landscape continues to evolve, cost-effective electronic methods for data coding are progressively being integrated into intricate data analysis procedures. NVivo, a computer software package for Qualitative Data Analysis (QDA) developed by QSR International, offers numerous benefits that directly enhance the research quality. (Hilal and Alabri 2013)
* **Ethical Consideration** All respondents were informed of their choice to take part in the survey. All respondents were guaranteed complete secrecy during the study and were given the opportunity to participate voluntarily. This study paper's investigator acknowledged the use of works that were taken from other authors' works. Prior to distributing the questionnaires, approval from the appropriate research authorities was obtained. Proper information about the study was also provided to the respondents.
* **Methodology Conclusion** This chapter covered in detail, the methodology adopted to undertake this research, through the collection and analysis of data using various tools and techniques. Essentially, the methods chosen to conduct this study were found to be appropriate to be able to achieve the objectives of the study and answer the research questions. The following chapter will provide more detail on the results from analyzing the data in accordance with the methods outlined and offer relative points of discussion in Figure 1.



**Figure 1: Methodology Process Undertaken**

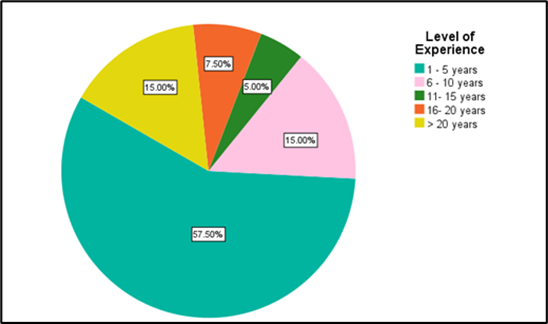
# **Data Analysis, Presentation, and Interpretations**

1. 1. **Introduction** This chapter contains findings on the study of the application of Power, Influence, Learning and Leadership within the construction industry. The findings have been discussed under content analysis areas and subsections corresponding to variables and objectives of the study. The (CA) includes study demographics, construction industry, and questions related specifically to people in management positions in their respective organization.
   2. **Questionnaire Response Rate 80** participants were chosen at random from the 100 participants in the research. 90 of the 120 completed questionnaires were returned, providing a response rate of 90% that was appropriate for the study's objectives. According to Mugenda and Mugenda (2003), “a return rate of 80% is deemed adequate, 60% is acceptable, and 70% or above is very good.”
   3. **Demographic Information The** study targeted Civil Engineers, Construction Supervisors, Engineering Assistants, Project Managers, Project Coordinators, Structural Engineers, and Construction Supervisors all within the private and public construction industry of Trinidad and Tobago. The demographic characteristics of the respondents were investigated in the first section of the questionnaire. The demographic captured level of qualification, years of experience, term of employment and category of industry situated the respondent is situated within. This chapter summarizes the findings of the respondents' demographic make-up as well as the current study's goals. Both closed-ended and open-ended questions were present in the survey given to the respondents. While content analysis was used to examine the open-ended questions, descriptive statistics, specific frequencies, and percentages were used to study the close-ended questions. The findings of the descriptive statistics were displayed in the form of graphs (pie charts and bar charts) and distribution tables using the Statistical Package for Social Sciences (SPSS) version 26. Inductive coding was used to convert the replies into codes and nodes for the content analysis. NVivo version 10 was used for the inductive coding. Tables with the categories, examples, counts/ references and results have been shown.
   4. **Demographic Characteristics of Respondents** This section contains results on the demographic characteristics of the respondents including the highest level of qualification, level of experience, position of the respondents in their respective organizations, the type of firm they work with and lastly, their type of employment. The results of these have been presented in **Figure 2, Figure 3, Figure 4, Figure 5, and Figure 6.**



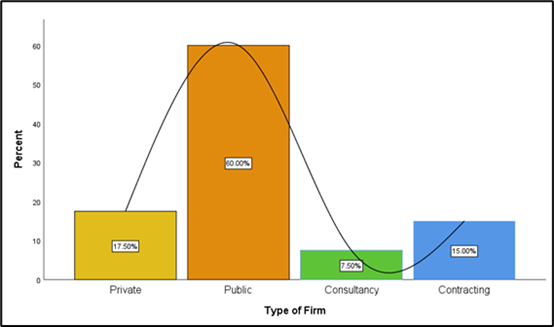
**Figure 2: Highest Level of Qualification**

**Figure 2** displays results on the highest level of qualification of the respondents. From the results, 62.5% of the respondents have attained a bachelor’s degree, whereas 12.5% are master’s degree holders and are yet to further their education. Furthermore, 7.5% are Ph.D. holders, 7.5% have post graduate diplomas and are yet to elevate their educational level and the remaining respondents representing 10% have had their education up to the diploma level, and advanced diploma level. Some of the respondents also have legal education certificates. From the results, it can be concluded that all the respondents have had some form of education, however some have climbed higher on the educational ladder. The study was dominated by respondents who have had their education to the bachelor’s degree level followed by master’s degree holders who are yet to pursue their doctorate. It can be concluded that the organizations in the construction industry have employed more talents whose highest level of qualification is bachelor’s degree.



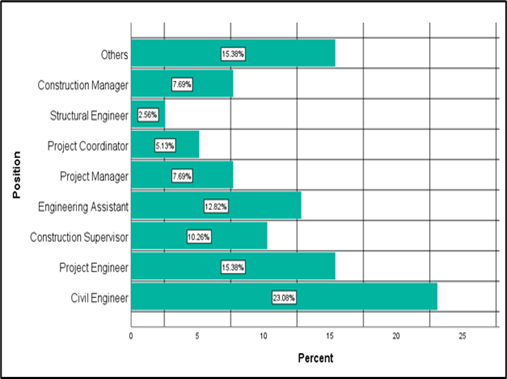
**Figure 3: Level of Experience**

The findings of a question concerning the respondents' degree of experience in the construction sector are shown in **Figure 3**. 57.5% of the respondents have one to five years of work experience in the construction business, 15% have six to ten years, and 5% have eleven to fifteen years. Additionally, 15% of the respondents have more than 20 years of work experience in the construction business, while 7.5% of the respondents have between 16 and 20 years. Although the levels of experience vary, it is clear from the findings that the respondents have some degree of expertise. In this survey, individuals with one to five years of job experience in the construction business predominated. It's possible that organization in the construction industry recruited more talent in recent times and are still recruiting.

****

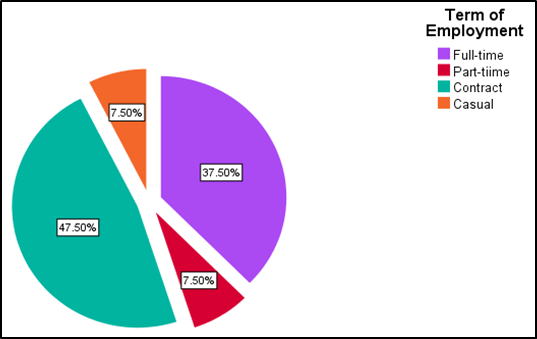
**Figure 4: Type of Firm**

The study aimed at ascertaining the types of firms the respondents work in and from **Figure 4**, 17.5% of the respondents work in private firms, 60% work in public firms, 7.5% work in consulting firms and the remaining 15% work in contracting firms. It can be deduced from the results that a vast majority of the respondents work in the public sector. The various public institutions have been making conscious efforts to employ more personnel who contribute to the attainment of organizational goals.



**Figure 5: Position of Respondents**

From **Figure 5**, which presents results on the position of the respondents, 23.06% of the respondents are Civil Engineers, 15.36% are Project Engineers, 10.26% are Construction Supervisors, 12.8% are Engineering Assistants, and 7.7% are Project Managers. Moreover, 5.1% are Project Coordinators, 2.6% are Structural Engineers, 7.7% are Construction Managers and the remaining 15.4% have other Managerial positions such as Drainage Supervisor, Property Manager, Human Resource Assistant, Legal Practitioner, and Building Facilities Coordinator. The respondents with diverse levels of qualifications have attained managerial positions in their respective organizations in the construction industry. Inferring from the results, Civil Engineers were predominant in this study followed by Project Engineers

****

**Figure 6: Term of Employment**

The respondents have diverse contractual agreements with their respective employers and **Figure 6** has results on that. 37.5% of the respondents are full-time employees, 7.5% are part-time employees, 47.5% are contract workers and the remaining respondents (7.5%) are casual workers. From the results, it can be observed that the study was dominated by contract workers followed by full-time workers. It could be that the organizations, being public, private, consulting or contracting have a penchant for employing personnel on a contact basis.The present study sought to ascertain the kind of power existing in the various organizations in the construction industry and Table 4 has results on this. The respondents gave more than one answer which denotes that there are diverse forms in their organizations. Resource reward power has 11.8% of the responses, positional power has 43.4% of the responses, and personal referent power has 5.3% of the responses. Furthermore, the responses accorded to expertise power was 30.3% and the responses accorded to coercive power was 9.2%. It can be deduced from the results that the kinds of power existing in the organizations in the construction industry are resource reward power, positional power, personal referent power, expertise power and coercive power. However, positional power had the most responses followed by expertise power. This denotes the positional power is what is mostly displayed by the managers of the various organizations in the construction industry. The components of the research strategy comprise of; the targeted population, proposed sampling strategies, data collecting procedures, data analysis techniques, ethical considerations used in the study, and operational definitions of variables are all described in detail in this chapter along with the research methodology. This chapter's main topics are briefly discussed.

**Table 4: Types of Power**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Responses | | Percent of Cases |
| N | Percent |
| Power | Resource Reward Power | 9 | 11.8% | 22.5% |
| Positional Power | 33 | 43.4% | 82.5% |
| Personal Referent Power | 4 | 5.3% | 10.0% |
| Expertise Power | 23 | 30.3% | 57.5% |
| Coercive Power | 7 | 9.2% | 17.5% |
| Total | | 76 | 100.0% | 190.0% |

The present study sought to ascertain the kind of power existing in the various organizations in the construction industry and **Table 4** has results on this. The respondents gave more than one answer which denotes that there are diverse forms in their organizations. Resource reward power has 11.8% of the responses, positional power has 43.4% of the responses, and personal referent power has 5.3% of the responses. Furthermore, the responses accorded to expertise power was 30.3% and the responses accorded to coercive power was 9.2%. It can be deduced from the results that the kinds of power existing in the organizations in the construction industry are resource reward power, positional power, personal referent power, expertise power and coercive power. However, positional power had the most responses followed by expertise power. This denotes the positional power is what is mostly displayed by the managers of the various organizations in the construction industry.

**Table 5: Influence of Leaders on Learning Opportunities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Absence of learning opportunities | It does not because they rather keep their knowledge to themselves. | 6 | 22.2% |
| Creating learning opportunities and selecting qualified persons | It impacts it greatly because learning opportunities are non-existent without them. | 4 | 14.8% |
| Culture of learning and development | Positive leadership behaviours can foster a culture of learning and development. | 2 | 7.4% |
| Favouritism | Learning opportunities are based on favoritism of employees by leaders. | 2 | 7.4% |
| Motivation | Positively, because it can motivate persons to upgrade themselves in the construction industry. | 8 | 29.6% |
| Provision of advice, resources, and training | Their reliability in providing sound advice and training. | 5 | 18.6% |

From **Table 5**, absence of learning opportunities was mentioned 6 times by the respondents, creating learning opportunities and selecting qualified persons was mentioned 4 times, and culture of learning and development was mentioned 2 times just like favouritism. Moreover, motivation was mentioned 8 times by the respondents and provision of advice, resources and training was mentioned 5 times. It can be therefore observed that motivation has the highest frequency followed by absence of learning opportunities. The leaders in the various organizations in the construction industry have been making conscious efforts to motivate the employees to further their education to acquire knowledge and skills. The motivation has been in diverse forms such as encouraging words, displaying of certificates and achievements and more. On the contrary, some of the respondents were of the view that there are no learning opportunities available to them, particularly in the public sector. Inferring from this, then it means that many a times, private organizations in the construction industry are the ones that create learning opportunities for their respective workforce. Moreover, even in organizations with such opportunities, some of the leaders do not relay the information to a vast majority of the employees.

**Table 6: Types of Continuous Learning and Development**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Group knowledge sharing | Yes, group knowledge sharing. | 1 | 4.8% |
| Mentorship | Yes, mentorship by persons who acquired years of experience in the field. | 2 | 9.6% |
| Professional courses | Yes, employees who show potential the organization invest in them in professional development courses. | 9 | 42.8% |
| Training sessions | Yes, they have training sessions to help educate and improve on skills needed for the job. | 9 | 42.8% |

**Table 6 :** The respondents were asked if their organization has a culture of continuous learning and development in place and if it is available, they should state the type. Out of the 90 respondents 45 indicated that their organizations have a culture of continuous learning and development. 21.4% of the respondents indicated that their culture has to do with training sessions, 21.4% also indicated that employees are allowed to take professional development courses, 4.8% averred that the leaders have incessantly been mentoring the workforce and 2.4% indicated that there is normally group sharing knowledge in their organizations. Based on the results, it can therefore be concluded that the organizations in the construction industry have mostly been sustaining the culture of continuous learning and development through professional development courses and training sessions.

**Table 7: Power Tactics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Responses | | Percent of Cases |
| N | Percent |
| Tactics | Behavioural Tactics | 31 | 50.8% | 77.5% |
| Rational Tactics | 18 | 29.5% | 45.0% |
| Structural Tactics | 12 | 19.7% | 30.0% |
| Total | | 61 | 100.0% | 152.5% |

**Table 7:** displays results on the power tactics utilized by persons in the various organizations and this also has multiple responses. Behavioural tactics has 50.8% of the responses, rational tactics has 29.5% of the responses and structural tactics has 19.7% of the responses. Based on the results, it can be concluded that people in the organizations have been utilizing three influential tactics namely behavioural tactics, rational tactics, and structural tactics. However, the most utilized tactic is behavioural tactics, and it may be that this tactic has been yielding positive results in the organizations.

**Table 8: Conflict Resolution/ Influential Tactics with External Stakeholders Frequencies**

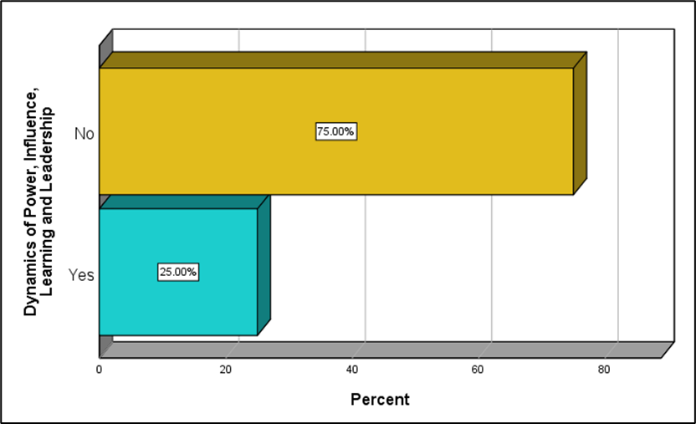
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Responses | | Percent of Cases |
| N | Percent |
| Conflict Resolution/ | Rational Reasoning | 24 | 39.3% | 60.0% |
| Influential Tactics | Consultation | 32 | 52.5% | 80.0% |
|  | Inspiration Appeal | 5 | 8.2% | 12.5% |
| Total | | 61 | 100.0% | 152.5% |

The respondents were asked about how their respective organizations resolve conflicts or disagreements with external stakeholders, and they provided multiple answers to the questions. From **Table 8**, 39.3% of the responses were accorded to rational reasoning, 52.5% were accorded to consultation and the remaining 8.2% were accorded to inspiration appeal. The results show that the organizations have been gravitating towards three approaches in their conflict resolution with external stakeholders which are rational reasoning, consultation, and inspiration appeal. However, the most used approach by the organizations has to do with consultation. Perhaps, it is the most effective approach which helps in resolving conflicts or disagreements.

**Table 9: Power vs Influence**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Influence | Influence. In the construction industry, influence is more likely to create a successful project outcome than relying solely on power. | 14 | 36.8% |
| Power | Power. It is more used in the construction industry than influence. It is also more widely spoken of in the field. | 24 | 63.2% |

**Table 9**: The study aimed at ascertaining which of the two concepts (power and influence) takes precedence in the construction industry. Influence had 36.8% of the responses and power had 63.2% of the responses. It can therefore be deduced from the results that in the construction industry, power is eminent, and it is the apex as it leads to getting work done. Decisions made in the organizations are as a result of power from persons from above or senior management and not influence. With power, managers give directives to the workforce to comply and get the work done.



**Figure 7: Understanding the Dynamics of Power, Influence, Learning and Leadership**

The respondents were asked if individuals in the construction industry comprehend the dynamics of four important elements which are power, influence, learning and leadership. From **Fig 7**, 25% of the respondents indicated yes as their answer and a whopping 75% indicated no as their answer. It can therefore be concluded that an overwhelming majority of persons in the construction are yet to comprehend the dynamics of power, influence, learning and leadership. A lot of people not understanding the dynamics may be a conundrum because these elements help in managing resources and achieving organizational goals.

**Table 10: Downsides of Not Using Learning and Continuous Learning**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Responses | | Percent of Cases |
| N | Percent |
| Downsides | Inability to adapt to change | 36 | 32.1% | 90.0% |
| Poor decision making | 37 | 33.0% | 92.5% |
| Inability to train or mentor employees | 19 | 17.0% | 47.5% |
| Reduced job satisfaction | 20 | 17.9% | 50.0% |
| Total | | 112 | 100.0% | 280.0% |

**Table 10:** displays results on the ramifications of not utilizing learning and continuous learning in the construction industry. The first ramification which is inability to adapt to change has 32.1% of the responses, and the second which is poor decision making has 33% of the responses. Moreover, 17% of the responses were accorded to inability to train or mentor employees and the remaining 17.9% were accorded to reduced job satisfaction. The results show that not adhering to learning and continuous learning comes with a myriad of repercussions including job dissatisfaction, making poor decisions, inability to adapt to change and inability to either train or mentor employees. Therefore, it will be prudent for the organizations in the construction industry to gravitate towards learning and continuous learning perpetually.

**Table 11: Power Distribution within Management Structures**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Even distribution | Power is distributed evenly throughout the structure. | 3 | 30% |
| Top-down approach to power | A top-down approach to power by management. | 6 | 60% |
| Uneven distribution | It is not distributed evenly. | 1 | 10% |

**Table 11:**  displays results on power distribution within the management structure and from the results, even distribution of power has a frequency of three, top-down approach to power has a frequency of six and last, uneven distribution has a frequency of one. Deducing from the results, the organizations in the construction industry have been distributing power within management structure in three ways: even distribution, uneven distribution, and top-down approach to power. However, a conclusion can be drawn that the organizations mostly utilize the top-down approach to power.

**Table 12: Strategies Utilized in Promoting Action through Influence**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Building of relationships and mentorship | I promote building of relationships and mentoring in the field. | 3 | 42.8% |
| Employee participation | Yes, the strategy of allowing persons ideas to be heard so that they feel a sense of belonging. | 1 | 14.3% |
| Motivation | Yes, by continuous motivation talks and encouragement. | 1 | 14.3% |
| Stoic approach | Having a stoic approach to situations and giving a listen ear to problems. | 1 | 14.3% |
| Teamwork | Teamwork is the main strategy used. | 1 | 14.3% |

**Table 12:** The respondents, particularly those with managerial positions, were asked if there are specific strategies they implement in the promotion of action via influence in their organizations. Seven managers indicated yes as their answer and gave diverse strategies they normally use to promote action through influence. three of the respondents averred that they do that by mentoring and building relationships, one of the managers do that by practicing employee participation, and another do that via motivation. Moreover, another strategy mentioned by a respondent has to with adhering to a stoic approach and last, one of the managers uses teamwork as a strategy. From the results presented, it can be concluded that in promoting action through influence in the construction industry, the managers have been gravitating towards approaches or strategies they deem effective, and they include building relationships and mentoring, employee participation, motivation, using stoic approach and teamwork.

**Table 13: Ways of Inhibiting Knowledge Sharing and Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Culture of short-term results | Creating a culture that emphasizes short-term results. | 1 | 10% |
| Favouritism and confidentiality | They inhibit sharing and learning amongst employees under the veil of confidentiality even amongst employees in same position. | 2 | 20% |
| Lack of collaboration and managerial support | Employees don't mix/mingle with other employees of other departments. | 3 | 30% |
| No feedback | Ignoring employee feedback. | 1 | 10% |
| Personal agenda | Influential individuals tend to inhibit knowledge as they carry their own agenda. | 3 | 30% |

**Table 13**: Despite the promotion of knowledge sharing and learning, some influential individuals have been orchestrating and implementing ways to inhibit knowledge sharing and learning. It was mentioned once that influential individuals create a culture that focuses on short term results. Favoritism and confidentiality were mentioned twice as a way of inhibiting knowledge sharing and learning. Lack of collaboration and managerial support was also mentioned three times just like personal agenda. One respondent also said failing to provide feedback inhibits the sharing of knowledge and learning. From the results, personal agenda and lack of collaboration and managerial support has the highest frequencies (3) with three each.

**Table 14: Leadership Approach and Success**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Assertive and yes | The leadership approach is categorized as assertive, and yes it brings project success. | 7 | 50.0% |
| Democratic approach and yes | My leadership approach is based on allowing and hearing from each person involved in the project and making a decision based on that. | 4 | 28.7% |
| Formidable and perspicacious and yes | As very formidable and perspicacious. I have found this approach to be successful. | 1 | 7.1% |
| Holistic approach and yes | Holistic and yes. | 1 | 7.1% |
| Relationship building and mentorship and yes | Relationship building and mentoring show expert knowledge in the field. Yes, it achieves success. | 1 | 7.1% |

**Table 14:** displays result on how influential persons in the construction industry have been promoting knowledge sharing and learning in their respective organizations. It was mentioned once that promotion is normally done through creating a positive learning culture. Mentoring and coaching has a frequency of 6, motivation has a frequency of 8, open communication has a frequency of 7 and provision of resources has a frequency of 2. Moreover, a respondent mentioned that promotion is done by publishing academic research and last it was mentioned 5 times that the organizations promote knowledge sharing and learning through training sessions. It can be deduced from the results that influential persons in the construction industry have been making conscious efforts to promote knowledge sharing and learning in diverse ways including creating positive learning culture, mentorship and coaching, motivation, open communication, provision of resources, publishing of academic research and training sessions. It can be concluded based on the results that the influential individuals normally do promote knowledge sharing and learning by constantly motivating the workforce.

**Table 15: Level of Connection between Influence and Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Examples** | **References** | **Percentages** |
| Great Extent | Individuals that are continuously learning and are open to share their knowledge, influence others to improve themselves. | 9 | 69.2% |
| Verry Little Extent | Very little. | 1 | 7.7% |
| Moderate Extent | In moderation. | 1 | 7.7% |
| No connection | In my experience, they are not that interconnected. | 2 | 15.4% |

The respondents were asked about the extent of connection between influence and learning and the result on this is showcased on **Table 15.**  From **Table 15**, great extent has the highest frequency with 9, very little extent was mentioned once just like moderate extent and last, it was mentioned twice that there is no connection between influence and learning. Deducing from the results, a conclusion can be drawn that there is a connection between both concepts (influence and learning). Moreover, the connection between influence and learning is great. Persons who have acquired knowledge and skills via learning are able to influence others in a particular field or task.

# **5.SUMMARY OF THE FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

1. 1. **Introduction**

This chapter comprises of a summary of findings of the study, discussion of results, conclusion, and recommendations in relation to each of the research objectives. Sections in this chapter contain an introduction, major findings of the study, conclusion, limitations, and suggestions for further studies.The study aimed to identify the outcomes of P.I.L.L when applied to the construction industry and identify which characteristics take precedence and their outcomes. By asking the following research questions:

* Does power have the ability to push or promote actions from persons without using a variety of tactics?
* Does influence have the ability to push or promote actions from persons without using a variety of tactics?
* How does learning affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?
* How does influence affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?
* How does power affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?
  1. **Summary of Findings**

The conducted study revealed a significant knowledge gap among individuals regarding the intricacies of Power, Influence, Learning, and Leadership within the construction industry. The findings demonstrated a lack of understanding regarding the dynamics of these essential elements, as well as their practical application and potential outcomes once effectively implemented. The need for further research, education, and awareness to enhance individuals’ comprehension of these critical aspects and their significant impact on the construction industry’s overall success and development are warranted.

* + 1. **Does power have the ability to push or promote actions from persons without using a variety of tactics?** Subsequent to conducting a thorough research and collection of data from the distributed questionnaires, it can be concluded that a variety of tactics are warranted to push or promote actions from persons with the use of power. We note within **Table 3** “Showing Kind of Power” 43.4% of the sample size which consisted of 76 persons suggested that positional power exists within their organization followed by the second highest ranking result of 30.0% thought that expertise power exists within their organization. An example of this can be seen in Liu and Fang 2006 study **“A Power-Based Leadership Approach to Project Managers”** the authors identified that project managers who utilize positional and personal power obtain significant effect on performance and members’ motivation. This observation from the data can be validated by taking a keen look and understanding of (Fryer 2007) interpretation of power within an organization setting. Fryer indicated that managers should understand the kinds of power which are utilized and observe the reactions and responses from employees. Fryer went further to elaborate that most managers achieve their objectives using a combination of tactics, rewards, contractual procedures, rules, sanctions, expertise, and personal qualities. These tactics strongly depend on the task, the people, and the support managers receive from the organization. The tactics identified in the study in accordance with **Table 7** “Power Tactics”illustrate that behavioural tactics were utilized the most amongst the respondents having a 50.8% response rate followed by rational tactics having a 29.5% response rate. **Table 9** “Power vs Influence” illustrates that the majority (63.2%) of persons believe that power is more used in the construction industry than influence compared to the minority (36.8%) which believe that influence in the construction industry is more likely to create a successful project. To add we can refer to **Table 13** “Power Distribution Within Management Structures” which displays 60% of the sample size express that their organization experiences a top-down approach to power.
    3. **Does influence have the ability to push or promote actions from persons without using a variety of tactics?**

Based on the data analysis in **Table 8** “Showing Conflict Resolution/ Influential Tactics with External Stakeholders Frequencies”, it is evident that influential tactics play a crucial role in motivating individuals to take action. The findings reveal that three main influential tactics were employed: consultation accounted for 52.5%, followed by rational reasoning at 39.3%, and inspirational appeal at 8.2%. These statistics support the identified theory that the ability to influence is a vital skill, distinct from power or control. Influence should not be misconstrued as manipulation to achieve personal ends. Instead, it revolves around understanding what drives employees' commitment and utilizing that knowledge to enhance performance and achieve favorable outcomes. For instance, Lee and Sweeney's 2001 study on "**An Assessment of Influential Tactics used by Project Managers"** demonstrated that tactics centered on rational reasoning, consultation, and inspirational appeal were the most frequently utilized and effectively prompted action from individuals. This conclusion aligns with the findings of Unger-Aviram, Katz-Navon, and Vashdi's 2022 study, which explored the influence tactics' impact on team performance as a dynamic process. Notably, rational reasoning was found to be positively associated with team performance, reinforcing the significance of influential tactics in achieving success. In summary, the data emphasizes the importance of influential tactics in driving action and promoting positive outcomes. Recognizing and utilizing these tactics effectively can lead to improved performance, team cohesion, and project success, benefiting both individuals and organizations in the construction industry.

* + 1. **How does learning affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?**

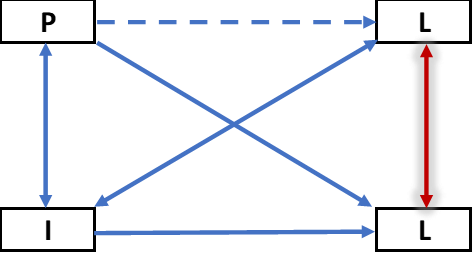
According to the data analysis, the impact of learning on the overall performance of leaders in the construction industry is significant. Individuals with crucial roles in this sector are greatly affected by their learning experiences. The data gathered from respondents highlighted that training sessions and professional development courses, combined with group knowledge sharing, are particularly effective in improving leadership capabilities and overall performance of persons with important roles in the construction industry. When leaders are equipped with such knowledge resources, they can efficiently manage their teams, leading them to success. By adopting this approach, leaders benefit from their employees' well-rounded knowledge, empowering them to make informed decisions regarding project deliverables and execution, ultimately contributing to successful project completions. However, **Table 12** showing “Downsides of Not Using Learning and Continuous Learning”, which showcases the downsides of neglecting continuous learning, reveals a concerning fact. Approximately 90.0% to 92.5% of the respondents agreed that the absence of continuous learning within the construction industry can hinder their ability to adapt to change and make crucial decisions, leading to unsuccessful project completions. In a research paper by Sujana (2020), several ramifications of neglecting continuous learning in the construction industry were outlined. These consequences include an inability to adapt to changing industry trends and technology, impaired decision-making abilities, a lack of capability to mentor and train employees, and reduced job satisfaction. In light of the study's findings, it was encouraging to note that 42.8% of the respondents had taken part in "professional courses" or "training sessions" organized by their organizations. These opportunities not only helped to educate them but also enhanced their skills, better preparing and equipping them for their roles in the industry to deliver highly successful projects. In conclusion, the data underscores the vital importance of continuous learning in the construction industry. Emphasizing learning and professional development opportunities can significantly enhance leadership effectiveness and positively impact project outcomes. On the other hand, neglecting continuous learning may lead to various challenges, hampering both individual and organizational success in this dynamic field.

* + 1. **How does influence affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?**

The data supports the theory from scholars that influence does affect the effectiveness of leadership and overall performance of persons with important roles in the construction industry. In this study even though 63.2% of the respondents indicated that power takes precedence in the construction industry over influence which had a 36.8% rate in **Table 9,** there were 14 common references which stated that influence in the construction industry is more likely to create a successful project outcome than relying on solely power. Where this successful project outcome can be seen stemming from “motivation” given to the employees which had the highest frequency of 29.6 in **Table 5.** The data garnered from this study satisfies the statement made by Vacar 2015 “influencing other is essential, but it is more than just giving commands. Leaders who inspire, persuade, and encourage can create a common goal and achieve results’ leaders must master the ability to influence others.” Which was supported by Anwar and Balcioglu 2016 in their articled titled **“The Relationship Between Transformational Leadership Characteristics and Effectiveness”** where the authors explicitly indicated that, “Every manager’s role that should be filled in the organization is leadership. Managers usually have a wrong assumption that they are not only managing meanwhile they are effectively leading a group of people towards an organizational goal or set of goals through the process on influence.” (Anwar and Balcioglu 2016) Effective leadership influence fosters trust, as it establishes a connection between the leader and their team members. When leaders are able to communicate their vision, values, and expectations clearly, they inspire trust and confidence in their leadership. This trust builds strong relationships and enhances teamwork, ultimately leading to higher levels of commitment and engagement from the team. Moreover, influential leaders have the ability to inspire and mobilize their followers. Through their words, actions, and personal example, they can motivate individuals to go above and beyond, tapping into their full potential. By effectively communicating the purpose and significance of their work, leaders create a sense of meaning and fulfillment for their team members, driving them to achieve exceptional results.

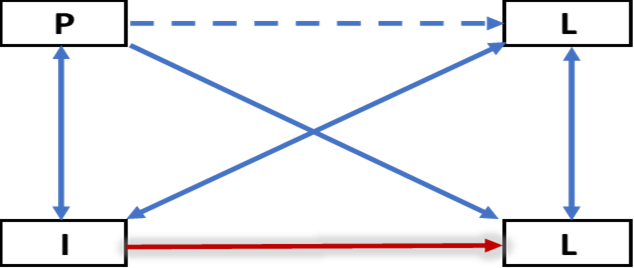
* + 1. **How does power affect the effectiveness of leadership and the overall performance of persons with important roles in the construction industry?**

Based on the garnered data, it becomes evident that power wields a momentous influence on leadership and overall performance within the construction industry, particularly concerning individuals holding pivotal roles. The study conducted by Staff in 2019, titled **"Power and Leadership Trends,"** revealed that a substantial 60% of respondents acknowledged their organizations' concerted efforts to empower personnel across all echelons. In a parallel vein, 53% of those surveyed concurred that their organizations duly reward leaders for fostering empowerment. Noteworthy observations emerged from the study, with a significant majority attesting that power gravitates towards a select few within their organizational structures. A disconcerting 28% of participants admitted witnessing the misuse of power by upper echelon leaders. Astonishingly, merely 29% believed that their organizations adequately instruct their leaders in the art of leveraging their full power effectively. The author further expounded on the direct correlation between power and leadership, identifying diverse sources such as expertise, position, reward, and coercion from which power emanates. These discerning findings were corroborated by Lunenburg in 2012, whose study titled **"Power and Leadership: An Influence Process"** classified power into two distinct categories—organizational power (encompassing legitimate, reward, and coercive facets) and personal power (involving expert and referent aspects). Notably, the research unveiled that personal power displayed a more profound association with employees' job satisfaction when juxtaposed against organizational power sources. Remarkably, this aligns seamlessly with the data presented in **Table 4** showing "Kind of Power," which underscores expertise power as the second most prevalent form of power employed within the construction industry according to the respondents. The profound significance of power's role is further underscored by Lunenburg's intriguing exploration of "empowerment," a concept central to the works of Staff in 2019 and Fryer 2007. These esteemed authors highlighted that empowering employee in the organizational context fosters considerable enhancements in work performance and leadership. (Fryer 2007 ) assertion that “managers must, to some degree, give up being in authority and spend more time being an authority.” to assume a more authoritative stance finds indirect confirmation in **Table 13** showing, "Power Distribution within Management Structures," where 30% of managerial personnel indicated an "even distribution" of power within their organizations. This approach, as corroborated by **Table 16** showing, "Leadership Approach and Success," facilitates project success by leveraging assertiveness to achieve optimal outcomes. **Interaction Between- Power, Influence, Leadership and Learning** In the dynamic and multifaceted realm of the construction industry, the interplay between Power, Influence, Leadership, and Learning forms a complex web that significantly shapes its trajectory. The construction sector, marked by its intricate project landscapes, diverse stakeholders, and evolving technologies, stands as a fertile ground to explore the intricate connections between these pivotal elements. Power, often manifested through hierarchical structures and resource allocation, exerts its force on decision-making processes and project outcomes within the construction domain. Concurrently, the art of influence finds its resonance, as individuals and entities seek to navigate the intricacies of collaborative endeavors. Leadership emerges as the driving force that not only guides



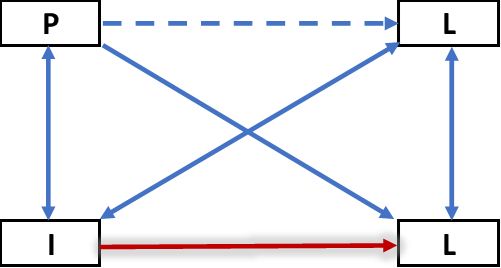
**Figure 8: Showing Interaction Diagram between Power, Influence, Learning and Leadership (Chadee 2023)**

project visions but also inspires and mobilizes teams towards achieving common goals. Amidst these dynamics, learning emerges as a cornerstone, providing the foundation for adaptive practices and innovation. The construction industry's propensity for constant change, driven by advancements in materials, techniques, and regulations, necessitates a learning-oriented approach to stay relevant and competitive in **figure 8**. This exploration into the interconnectedness of power, influence, leadership, and learning within the construction industry unveils a captivating narrative of how these elements converge to shape the industry's evolution. As this journey unfolds, it becomes evident that unraveling these relationships not only offers insights into effective project management but also sheds light on the broader socio-economic impacts of the construction sector.



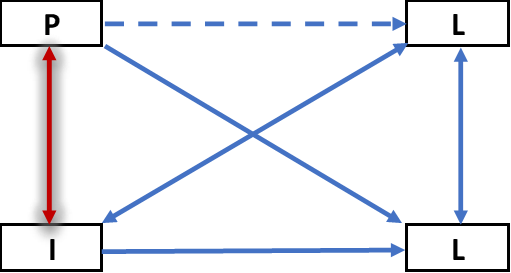
**Figure 9: Showing the relationship between Influence and Leadership (Chadee 2023)**

The construction industry is characterized by intricate networks of stakeholders, each wielding different degrees of power and influence. Power often derives from formal positions within the organizational hierarchy which was identified in **Section 5.2.1** where **Table 4** “Showing Kind of Power” 43.4% of the sample size which consisted of 76 persons suggested that positional power exists within their organization followed by the second highest ranking result of 30.0% thought that expertise power exists within their organization., with project managers, engineers, and senior executives holding decision-making authority. This power is crucial for resource allocation, project direction, and overall management. However, influence, rooted in expertise, relationships, and communication skills, complement power by shaping how decisions are made and executed. Key players in the industry, such as architects and experienced contractors, can leverage their expertise to influence decisions that align with best practices and innovation. The relationship between power and influence is not always straightforward; their harmonious synergy can lead to effective collaboration and successful project outcomes, while an imbalance can result in conflicts, inefficiencies, and missed opportunities. In the ever-evolving construction landscape, recognizing and managing this intricate relationship is pivotal for achieving both project excellence and industry advancement in **figure 9**.



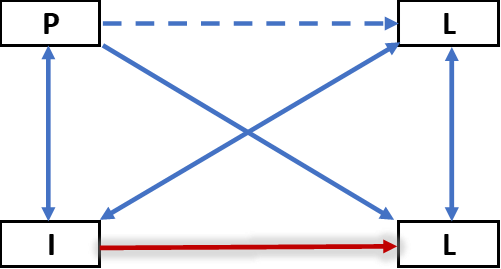
**Figure 10: Showing the relationship between Learning and Leadership (Chadee 2023)**

Within a construction organization , the symbiotic relationship between learning and leadership plays a crucial role in shaping the sector's adaptability and growth as discussed in **Section 5.2.3** . Leadership, often embodied by decision makers and seasoned professionals, serves as the guiding force that sets the tone for organizational culture and project direction. Effective leaders recognize that learning is not only a personal journey but also a collective endeavor. They foster a culture of continuous learning by encouraging their teams to acquire new skills, stay updated with technological advancements, and embrace innovative approaches. This proactive stance towards learning not only enhances individual competencies but also equips the workforce to tackle evolving challenges in construction methodologies, safety standards, and sustainability practices.Conversely, learning empowers leadership within the construction industry to remain agile and relevant in a rapidly changing environment. Leaders who actively engage in ongoing learning, whether through workshops, industry conferences, or staying abreast of regulatory changes, are better equipped to make informed decisions that align with industry trends and best practices. Moreover, a learning-oriented leadership approach nurtures open communication channels between leaders and their teams, fostering an environment where ideas are exchanged, problems are collaboratively solved, and lessons learned from past projects are applied. This two-way flow of knowledge enriches leadership strategies and ultimately contributes to improved project management, stakeholder engagement, and overall project success. In essence, the intertwined relationship between learning and leadership is a cornerstone of the construction industry's capacity to evolve, innovate, and meet the demands of a rapidly evolving landscape in **figure 10.**



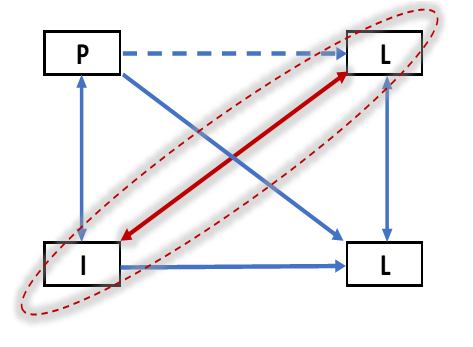
**Figure 11: Sowing the relationship between Power and Influence (Chadee 2023)**

In the intricate web of the construction industry, the interplay between influence and learning shapes the way projects are conceived, executed, and refined. Influence, often wielded by experienced professionals, stakeholders, and industry veterans, has the ability to guide decisions and direct the course of projects. These influential figures often serve as mentors, imparting their knowledge, insights, and experiences to less-experienced counterparts. This transfer of knowledge is a form of learning that fuels skill development and accelerates the learning curve for newcomers. Furthermore, the ability to influence decisions is closely tied to staying informed about the latest industry trends, technologies, and regulations. Thus, a commitment to ongoing learning enhances one's influence by equipping individuals with the expertise required to sway decisions in a positive and informed direction in **figure 11**.



**Figure 12: Showing the relationship between Power and Leadership (Chadee 2023)**

Conversely, learning itself can be a tool of influence within the construction sector. Individuals who actively seek out opportunities to acquire new skills, deepen their understanding of construction methodologies, or master emerging technologies gain a competitive edge. Their enhanced proficiency commands respect and influence, allowing them to guide project approaches, advocate for innovative solutions, and drive positive change. Additionally, as collaborative projects become increasingly complex, those who demonstrate a commitment to learning become valuable resources for problem-solving and process improvement in **figure 12**. This form of influence is rooted in a continuous learning mindset, enabling individuals to lead by example and inspire others to follow suit. Ultimately, the symbiotic relationship between influence and learning creates a cycle of positive growth, development and effective communication which trust builds strong relationships and enhances teamwork, ultimately leading to higher levels of commitment and engagement from the team as mentioned in **Section 5.2.4**. “Within the construction industry, the relationship between power and leadership is intricately woven”(Walker and Newcombe 2000), exerting a significant impact on project outcomes and organizational dynamics. Power, often vested in formal positions of authority, grants leaders the ability to make critical decisions, allocate resources, and set project directions. Managers, senior executives, and key stakeholders wield this power to navigate the complexities of construction projects, ensuring tasks are coordinated, deadlines are met, and budgets are managed effectively. Effective leadership, on the other hand, transcends the mere exercise of power, encompassing qualities like vision, communication, and the ability to inspire and motivate teams. “Leaders who prioritize collaborative decision-making and foster an inclusive work environment build trust among team members, enhancing project cohesion and individual performance.”(Fryer 2007 )However, “the intersection of power and leadership is not without its challenges. An excessive concentration of power can lead to autocratic decision-making and a lack of engagement from team members, stifling innovation and hindering the flow of ideas” (Norman H. Martin 1956). Conversely, leadership that values shared power and empowers team members to contribute fosters an environment where diverse perspectives thrive, innovation flourishes, and project outcomes are optimized. In the dynamic landscape of construction, striking the right balance between power and leadership is pivotal for achieving project success, promoting a culture of teamwork, and driving industry progress. While the construction industry has historically emphasized technical skills and experience, the relationship between influence and learning has emerged as a crucial determinant of project success. In this ever-evolving landscape, where project complexity and stakeholder collaboration are paramount, the significance of influence and learning becomes undeniable. Influence, often born out of expertise, experience, and interpersonal skills, shapes how decisions are made and executed. In a collaborative sector like construction, where multiple stakeholders with diverse interests interact, the ability to influence and



**Figure 13: Showing the relationship between Influence and Learning (Chadee 2023)**

guide decisions can prevent conflicts, streamline processes, and align project objectives. Notably, experienced professionals and industry leaders who wield significant influence often act as mentors, sharing their accumulated knowledge and lessons learned with younger professionals. This mentorship, a form of learning, accelerates the development of crucial skills and insights, ensuring that the collective knowledge base of the industry is continually enriched. Learning, in turn, provides the foundation for this influential capacity to thrive. The construction industry, marked by ongoing advancements in materials, technologies, and sustainable practices, demands a culture of continuous learning. Professionals who proactively seek opportunities to expand their skill sets and stay updated on industry trends become valuable assets, able to influence decisions through well-informed perspectives. Moreover, learning fosters adaptability in an industry susceptible to changes in regulations, safety protocols, and project methodologies. Professionals who engage in ongoing learning not only refine their technical skills but also cultivate communication and problem-solving abilities. This holistic growth enables them to communicate ideas effectively, collaborate seamlessly, and address challenges innovatively—key qualities that enhance their influential impact within teams and across projects in **figure13.** In essence, the symbiotic relationship between influence and learning has risen to the forefront of project success in the construction industry, underscoring the need for a balanced blend of expertise and continuous personal and professional growth.

# **CONCLUSION, LIMITATIONS & RECOMMENDATIONS**

This chapter aims to provide a comprehensive conclusion to the study, encompassing a summary of the key research findings concerning the research aims and questions, along with their significance and contributions. Additionally, the limitations of the study will be examined, and potential avenues for future research will be suggested. This study aimed to explore the outcomes of P.I.L.L (Power, Influence, Learning, and Leadership) when applied to the construction industry and identify which characteristics take precedence and its outcomes. The results indicated that P.I.L.L in the construction industry lack slight understanding regarding the dynamics of these essential elements, as well as their practical application and potential outcomes once effectively implemented. Further findings indicated that power and influence are key factors in an employee’s ability to provide a successful project delivery and outcome, which is directly proportional to the learning and leadership qualities that persons of authority must possess. In answering the first research question it was identified that “positional” and “expertise” power are utilized the most in the construction industry which yield significant positive results in relation to the respondents, which mirrors the literature findings. These types of power sources are amplified using a verity tactics predominantly “behavioural” and “rational” tactics. Looking at the second research question, it was found that influential tactics are essential to push or promote actions from people. The influential tactics identified were “consultation” and “rational reasoning” which complemented the literature garnered earlier in the research paper. As seen from these findings it can be said that power and influence are deeply rooted in the construction industry and its organization’s daily operations and is an intricate phenomenon and must not be shun upon by negative connotations but understood for what it is and implemented to archive project success and increase employee performance. The third research question indicated that learning is a crucial element to leadership and its effectiveness towards overall performance of individuals. The study showed training sessions, professional development courses and knowledge sharing are the key and essential learning attributes for effective leadership. When leaders are equipped with such attributes, they can efficiently manage their teams, leading them to success. However, the study also identified the downside of not utilizing learning to aid in effective leadership, which was explained to hinder the ability to adapt to change and make crucial decisions, leading to unsuccessful project delivery where Sujana (2020) stated the ramifications. Looking at the fourth research question, the study and results garnered indicated that influence does affect the effectiveness of leadership and overall performance of persons with important roles in the construction industry. The overall conscious of this aspect of the study showed that managers should always fill leadership roles in an organization and not just have a narrowed mindset of just managing but effectively leading a group of people towards organizational goals or set of goals through the process of influence. Last but not least, the fifth research question illustrated that power has a strong grip on effectiveness of leadership and overall performance of persons in the construction industry through a phenomenon identified as “empowerment”. Scholars indicated that managers must, to some degree, give up being in authority and begin to be an authority. This research study addresses a substantial gap in existing research papers used in this investigation. This study focused on P.I.L.L in the construction industry is particularly noteworthy, as it brings forth a multitude of essential findings and potential solutions to the industry's prevailing challenges, by implementing the finds this research paper archived through the meticulous investigation that was undertaken, and overall project success can be obtained.

**LIMITATIONS**The present research paper has contributed valuable insights to the field of construction management, shedding light on important aspects of the topic under investigation. However, like any research endeavor, it is not without limitations. Firstly, the sample size used in the study was relatively small, which may restrict the generalizability of the findings to a broader population. Secondly, due to time constraints, certain aspects of the research were not explored in as much depth as desired, leaving potential avenues for future studies to delve deeper into those areas. Additionally, the research heavily relied on self-reported data, introducing the possibility of response bias, and affecting the accuracy of the results. Finally, the mere fact that this study had a lack of pervious research done resulted in a limited amount of theoretical foundation to build on for the research. Despite these limitations, this thesis serves as a steppingstone for further investigation and encourages future researchers to build upon its findings to enrich our understanding of Power, Influence, Learning, and Leadership within the construction industry.

**Recommendations**

The integrated approach presented in this research paper offers a transformative paradigm for the construction industry. By utilizing Power, Influence, Learning, and Leadership in harmony, construction stakeholders can elevate project outcomes, promote sustainable practices, and facilitate continuous growth within the industry. Embracing this comprehensive framework will contribute to the overall advancement and prosperity of the construction sector in the face of evolving challenges(/.

**REFERENCES**

1. Abdelhaleem, M.T., and D. Seymour. 1994. "Effective Leradership in the Construction Industry " 7: 163-173.
2. Abdul-Rahman, Hamzah, Chen Wang, and Xiang Wen Yap. 2010. "How professional ethics impact construction quality: Perception and evidence in a fast developing economy." Scientific research and essays 5 (23): 3742-3749.
3. Ali, Mahdi Mohamed Abdulsamad. 2011. "A framework for enhancing the success of construction projects undertaken in Libya." Sheffield Hallam University.
4. Anwar, and Balcioglu. 2016. "THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP CHARACTERISTICS AND EFFECTIVENESS: A CASE STUDY OF CONSTRUCTION COMPANIES IN ERBIL." No. 5 (No. 02).
5. Brown, Lillas M., and Barry Z. Posner. 2001. "Exploring the relationship between learning and leadership." Leadership &amp; Organization Development Journal 22 (6): 274-280. <https://doi.org/10.1108/01437730110403204>. <https://dx.doi.org/10.1108/01437730110403204>.
6. Chadee, Aaron. 2023. "The Interrelationship Between Power, Influence, Leadership, and Learning in the Construction Industry ".
7. Chadee, Aaron, Salisha R. Hernandez, and Hector Martin. 2021. "The Influence of Optismism Bias on Time and Cost on Construction Projects " Emerging Science Journal 5.
8. Chadee, Aaron, Indrajit Ray, and Xsitaaz T. Chadee. 2021. "Systemic Issues Influencing Technical Certainty in Social Housing Programmes in Small Island Developing States " MDPI.
9. Chien, Hung-Ju, and Stephen Barthorpe. 2009. "The current state of information and communication technology usage by small and medium Taiwanese construction companies." Journal of Information Technology in Construction (ITcon) 15 (5): 75-85.
10. Clarke, Victoria, and Virginia Braun. 2013. "Successful Qualitative Research: A Practical Guide for Beginners ".
11. College, Granite State. 2022. Cultivating Your Leadership Capabilities 4.
12. Cronbach, Lee J. 1951. "Coefficient alpha and the internal structure of tests." psychometrika 16 (3): 297-334.
13. EvalCommunity. 2023. "Utilizing SPSS (Statistical Package for the Social Science) for Effective Data Analysis in Monitoring and Evaluation ".
14. Florida, University of. 2006. Leading by Influence University of Florida (Miami).
15. Fryer, Barry. 2007 The Practice of Construction Management Edited by Third Edition. Blackwell Science
16. Furst. 2011. "The Importance of Influence ".
17. Gay, Lorraine R, Geoffrey E Mills, and Peter W Airasian. 1996. Educational research: Competencies for analysis and application. Merrill Columbus, OH.
18. Hilal, AIYahmady Hamed, and Saleh Said Alabri. 2013. "USING NVIVO FOR DATA ANALYSIS IN QUALITATIVE RESEARCH " International Interdisciplinary Journal of Education 2 (2).
19. Kipnis, David, Stuart M. Schmidt, and Ian Wilkinson. 1980. "Intraorganizational influence tactics: Explorations in getting one's way." Journal of applied psychology 65 (4): 440-452. <https://doi.org/10.1037/0021-9010.65.4.440>.
20. Kish, Leslie. 1965. Survey sampling. Vol. 04; HN29, K5. New York: John Wiley and Sons, Inc.
21. Lee, David R., and Patrick J. Sweeney. 2001. "An Assessment of Influence Tactics Used by Project Managers." Engineering management journal 13 (2): 16-24. <https://doi.org/10.1080/10429247.2001.11415112>.
22. Liu, Anita M. M., and Zhaoyang Fang. 2006. "A power-based leadership approach to project management." Construction Management and Economics 24 (5): 497-507. <https://doi.org/10.1080/01446190600567944>.
23. Loosemore, Martin. 1999. "Bargaining tactics in construction disputes." Construction management and economics 17 (2): 177-188. <https://doi.org/10.1080/014461999371673>.
24. Lunenburg, Fred C. 2012. "Power and Leadership: An Influence Process." International Journal of Management, Business, and Administration 15.
25. Mazlan Ismail, Mohamad Syazli Fathi. 2018. "Leadership in Construction: Leadership Styles Practiced in
26. Construction Project - A Review." Journal of Advanced Research in Business and Management Studies 13 (I): 24-30.
27. Naoum, Shamil G. 2012. Dissertation research and writing for construction students. Routledge.
28. Nayar, P. 2017. "Relationship between Leadership and Power Public Adminstration " Political Science
29. Norman H. Martin, John Howard Sims. 1956. "Thinking Ahead: Power Tactics." Managing People
30. NVIVOWindows. 2018. "About NVivo."
31. Outridge, Derek Irvine author. 2019. The Trinidad & Tobago construction industry : a multifacted disposition / Derek Irvine Outridge.
32. Oyaya, Walter O. 2017. "Influence of Leadership Style on Performance of Construction Projects: A Case of Housing Projects in Westlands Sub- County, Nairoby Kenya " Masters of Arts Project Planning and Management University of Nairobi.
33. Palinkas, Lawrence A, Sarah M Horwitz, Carla A Green, Jennifer P Wisdom, Naihua Duan, and Kimberly Hoagwood. 2015. "Purposeful sampling for qualitative data collection and analysis in mixed method implementation research." Administration and policy in mental health and mental health services research 42 (5): 533-544.
34. Ricken, Norbert. 2006. "The Power of Power. Questions to Michel Foucault." Educational philosophy and theory 38 (4): 541-560. <https://doi.org/10.1111/j.1469-5812.2006.00210.x>.
35. Roberts, Carol M. 2010. The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation. 2nd Edition ed.: Corwin Press.
36. Staff, Leading Efectively. 2019. The Role of Power in Leadership
37. Stokman, Frans N. 2011. "Power and influence as a political phenomena ".
38. Sujana, Caroline Maretha. 2020. "Contractor project manager leadership style based on path goal theory to support construction sustainability." IOP Conf. Ser.: Earth Environ. Sci 426 (1): 12007. <https://doi.org/10.1088/1755-1315/426/1/012007>.
39. Thangaratinam, Shakila, and Charles WE Redman. 2005. "The Delphi Technique ".
40. Unger-Aviram, Esther, Tal Katz-Navon, and Dana Rachel Vashdi. 2022. "Advancing influence tactics to the team level: the case of self-managed teams." Team Performance Management: An International Journal 28 (5/6): 306-330. <https://doi.org/10.1108/TPM-01-2022-0001>. <https://doi.org/10.1108/TPM-01-2022-0001>.
41. Văcar, Anca. 2015. "Influence And Leadership." Studies in business and economics (Romania) 10 (2): 196-201. <https://doi.org/10.1515/sbe-2015-0030>.
42. Walker, Anthony, and Robert Newcombe. 2000. "The positive use of power on a major construction project." Construction management and economics 18 (1): 37-44. <https://doi.org/10.1080/014461900370933>.
43. Wan Muda, W. H. N., F. Ab Halim, and W. H. Libunao. 2017. "Exploring Leadership Capability Team Leaders for Construction Industry in Malaysia: Training and Experience." IOP Conf. Ser.: Mater. Sci. Eng 226 (1): 12201. <https://doi.org/10.1088/1757-899X/226/1/012201>.
44. Webb, Mollie. 2022. "Using R to analyze your data ".
45. Wynn. 2022. "How Power Influences Behavior in Projects: A Theory of Planned Behavior Perspective ": 1-45.
46. Yiu, Tak Wing, and Yuet Nog Chung. 2014. "Face-saving tactics as an aid to construction negotiation in Hong Kong." Engineering, construction, and architectural management 21 (6): 609-630. <https://doi.org/10.1108/ECAM-05-2013-0049>.
47. Chadee, A. A., Martin, H., Chadee, X. T., Bahadoorsingh, S., & Olutoge, F. 2023. "Root cause of cost overrun risks in public sector social housing programs in SIDS: Fuzzy synthetic evaluation." Journal of Construction Engineering and Management, 149(11), 04023106
48. Chadee, A. A., Martin, H. H., Gallage, S., Banerjee, K. S., Roopan, R., Rathnayake, U., & Ray, I. 2023. "Risk evaluation of cost overruns (COs) in public sector construction projects: A fuzzy synthetic evaluation. Buildings, 13(5), 1116.
49. Chadee, A. A., Chadee, X. T., Ray, I., Mwasha, A., & Martin, H. H. 2021. "When parallel schools of thought fail to converge:" The case of cost overruns in project management. Buildings, 11(8), 321.
50. Chadee, A. A., Chadee, X. T., Chadee, C., & Otuloge, F. 2022. "Violations at the reference point of discontinuity: Limitations of prospect theory and an alternative model of risk choices." Emerg. Sci. J, 6, 37-52.
51. Chadee, A. A., Chadee, X. T., Mwasha, A., & Martin, H. H. 2021. "Implications of ‘lock-in’on public sector project management in a small island development state." Buildings, 11(5), 198.