

**Evaluative Quantitative Research on the Success Measurement in the field of
Project Management**

Mayuresh Vilas Gaikwad

**Dissertation submitted in partial fulfilment of the requirements for the
degree of**

M.Sc. Management Practice

At Dublin Business School

Supervisor: David Duff

August 2023

DECLARATION

'I declare that this dissertation that I have submitted to Dublin Business School for the award of M.Sc. Management Practice is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.'

Signed: Mayuresh Vilas Gaikwad

Student Number: 10686200

Date: 29-Aug-2023

ACKNOWLEDGMENTS

I would like to thank all the people who helped and guided me in the writing of this thesis carried out within my study of Master of Science in Management Practices in Dublin.

I would like to thank David Duff, my thesis supervisor who followed and advised me throughout the research writing process. His thorough guidance has helped me in different stages of this thesis preparation.

I would like to thank all the participants who completed the survey and provided me with their valuable inputs for the analysis of this study.

I would also like to thank Dublin Business School, for allowing me to have this opportunity on preparing a research thesis. This has been an exemplifying experience for me both personally and professionally. It is during this year that I developed the necessary skills for me to achieve the necessary skillset. I would like to thank my teaching staff and all the contributors who helped me during the dissertation process and made it possible.

I would like to thank my family and friends who supported, guided and helped me in the research and questioning of this thesis.

ABSTRACT

This study uses an evaluative quantitative technique to look into the vital project management success assessment area. The report compiles a thorough literature analysis, highlighting central ideas and perspectives influencing project success evaluation. Success indicators in real-world project situations are then experimentally evaluated using a survey-based data-collecting approach that uses the Statistical Package for the Social Sciences (SPSS). The literature study shows many viewpoints on project success that consider time, money, stakeholder satisfaction, etc. The dynamic interaction of various variables gives rise to themes, emphasizing the diverse nature of project results. For this study, project management experts from various sectors participated in a structured survey to collect quantitative data. Using SPSS makes comprehensive data analysis possible, allowing for the discovery of trends, correlations, and patterns in success assessment techniques. The study aims to improve our comprehension of assessing project success using this all-encompassing methodology. A comprehensive assessment of success measures' efficacy and applicability is made possible by combining theoretical ideas and empirical facts. The study's findings provide project managers with practical knowledge and a data-driven basis for improving success evaluation techniques and encouraging better project results.

Table of Contents

DECLARATION.....	2
ACKNOWLEDGMENTS.....	3
ABSTRACT.....	4
INTRODUCTION.....	8
LITERATURE REVIEW METHOD	12
Success Measurement in Project Management for IT Projects: A Quantitative Evaluation	14
Contribution of individual/group of project success factors to project success or failure..	17
Causal interactions between individual/group of project success factors and simulations of these	20
The role and importance of project managers	22
Project success factor framework.....	25
Literature gap.....	27
Conceptual framework	28
Conclusion.....	28
METHODOLOGY	29
Introduction	29
Research Philosophy	29
Research design	30

Research approach.....	31
Sampling technique	31
Data collection method.....	32
Data analysis technique	33
Validity and reliability	33
Ethical consideration.....	34
Conclusion.....	34
DATA ANALYSIS (Qualitative/Quantitative)	35
Demographics	35
Frequency analysis.....	38
RESULTS.....	70
Introduction	70
Survey Findings	70
DISCUSSION.....	76
CONCLUSIONS.....	80
Conclusion.....	80
Linking with Objectives	81
Recommendations	82
Research limitations.....	83

Future perspective	85
REFERENCES	87
APPENDICES	94
Appendix 1: Survey Questionnaires.....	94
Appendix 2: Survey Analysis	98
Appendix 3	106

INTRODUCTION

During the past decade, modern project management precepts have emerged to instill a vitalized professional approach to project management across countless industries. Individual capabilities in project management have been strengthened and enlarged through a combination of developments in project management process and techniques, the implementation of training programs, and automated tools that use advanced design concepts and technology. Many organizations today have therefore implemented an organizational entity, the project management office (PMO), to achieve project management oversight, control, support, and alignment. The PMO's role is to help both the project manager and the relevant organization (whether an entire enterprise, a business unit, or a department) to understand and apply professional practices of project management, as well as to adapt and integrate business interests into the project management efforts. (Hill, 2004)

Combining project management success with wider organizational success is not without problems, since determining what 'success' itself means is not always well-defined (Ika and Pinto, 2022). This is partly because success and performance are not the same thing— a project can fail in terms of its management but might still be considered a success by stakeholders in the end; alternatively, a project may be managed well in terms of expected time and cost but fail to accomplish its wider objectives that are meaningful to its stakeholders. While project management success can often be considered the accomplishment of a project according to certain predetermined metrics, understanding a project's contribution to wider organizational success is a more difficult task. Overall, organizational success can be pragmatically understood as long-term performance that stems from operational activities that are based on and adhere to organizational missions and values (Nørreklit, 2017). A practical way of looking at wider organizational success would be to analyse whether a project helps achieve the initially established business case targets or if it eventually ends up being comprehended as a valuable investment (Zwikael and Meredith, 2021). However, it is still unclear how the social construction of 'success' takes place in different stages of a project's lifecycle in "messy" project management realities. Furthermore, it is unclear how different project success dimensions are interrelated (Ika and Pinto, 2022) and how they can be measured in a way that is valid from the contextual perspective.

Providing such clarity, however, would require embracing the complexity and dynamism that are often present in projects, meaning that some ambiguity regarding project 'success' still remains in the end (Korhonen *et al.*, 2023). Therefore, the question arises—how do we address this ambiguity? (Korhonen *et al.*, 2023)

Project-based work is widespread as projects have increasingly become a preferred means by which organizations, both public and private, seek to deliver value, through products and services. Projects offer a methodology for realizing strategic goals, improve economic, social and environmental conditions for billions of people across the planet, and at the same time, organize work (Ika and Pinto, 2022).

In the world scenario today, situations of risk may arise unexpectedly, and with the potential to influence organizations and business viability. Several studies attest to the current moment in history as challenging, with increasingly frequent and inevitable changes. This moment is often referred to as the VUCA era, which stands for Volatility, Uncertainty, Complexity, and Ambiguity (Szpitter and Sadkowska, 2016).

VUCA describes the nature of some challenging conditions and situations in the environment in which organizations operate (Bennett and Lemoine, 2014). Volatility links to the unpredictability and instability of change, Uncertainty refers to the lack of knowledge of future events and their consequences, and Complexity refers to multiple connected parts forming an elaborate network of information and procedures. Finally, Ambiguity represents a lack of precedent for making predictions due to a lack of knowledge and understanding of the causes and effects of events and their relationships (Luis de Moura, Janes Carneiro and Lemos Dias, 2023).

Projects exist to promote organizational changes. Because they are into the organizational scenario, they influence and are influenced by the environment. This scenario impacts the way products and services are developed, increasing risks and creating difficulty for management (Szpitter and Sadkowska, 2016). This may explain the high rate of projects that fail to meet their goals. On average, 36% of projects executed worldwide do not meet the established goals and are considered unsuccessful. Project failures are estimated to cost

hundreds of billions of dollars a year and are not limited to specific regions or industries (Luis de Moura, Janes Carneiro and Lemos Dias, 2023).

Projects come up to create something unique. Being unique, they need different methods for their management. In the absence of a method to choose the most appropriate method to apply in each case, organizations adopt classic project management methods. Classic project management methods mean a homogeneous collection of standardized tools, processes, procedures, and practices to improve project effectiveness and increase the chances of success. Classic methods homogenize organizations' project areas and the way to manage projects. They assume that there are more similarities than differences in projects, thus enabling performance optimization through adopting practices based on process standardization. On the other hand, the discussion of the nature of a project's success considers that projects are not isolated in time and space. They are implemented in an environment that influences and is influenced by the project. Assuming that methods apply to all projects, classical management methods can, in some situations, lower project success rates. Thus, project management literature diverges on what leads to project success: standardization of procedures, which implies slight environmental adjustment; the flexibility of procedures, which implies adjustments to the context; or hybrid models that propose combinations of both approaches (Luis de Moura, Janes Carneiro and Lemos Dias, 2023).

Studies continue to show that only a minority of IS and IT projects can be considered completely successful, even when success is defined as being delivered on time, within budget, and meeting the technical specification. With the aim of improving this success rate, there has been a steady rise in the adoption of formal project management methodologies, together with the implementation of project management offices. A PMO is an organizational entity that provides functions and services ranging from maintaining standards to the provision of staff and resources to advising executive management regarding the organization's portfolio of projects. According to the Project Management Institute Body of Knowledge, a PMO is An organizational body or entity assigned various responsibilities related to centralized and coordinated management of those projects under its domain. The responsibilities of the PMO can range from providing project management support functions to actually being responsible for the direct management of a project. Studies show the majority of PMOs are unstable organizations themselves and that almost half of them cease

their operations within three years. PMOs are established with various objectives including to improve efficiency of resource use (a process objective), make more effective use of scarce resources (a user objective), reduce the risk of project failures (through learning), and increase the success in terms of benefits delivered (a value objective). However, among a range of reasons identified for the “death” of a PMO is the lack of recognition of the contribution of the PMO, and the need to agree what services should be delivered and how the value of those services can be made visible to those stakeholders who decide the future of a PMO (Kutsch *et al.*, 2015).

This leads us to the purpose of this article: to examine the universality of IT project success and failure factors — considering national cultural context, gender, role, experience, and time (Aranyossy, Blaskovics and Horváth, 2018).

LITERATURE REVIEW METHOD

While a wide stream of literature focuses on the exploration of IT success and failure factors, the universality of these factors gets less attention or is sometimes implicitly assumed. In a literature review states that “the idea of a universal set of project success criteria, on one hand, and a universal grouping of CSFs (critical success factors), on the other, would appear to be gathering more attention”. While this trend still continues we propose to examine the underlying assumption of universality of success and failure factors (Aranyossy, Blaskovics and Horváth, 2018).

Baccarini (1999) concluded that project success should be measured in two categories: product success, which involves meeting the customer’s organizational expectations, and project (management) success, which involves satisfying time, budget and functionality criteria. The first category was considered to be more important. Another conclusion was that a project can be successful in one of the categories but unsuccessful in another (Lech, 2013).

Nelson (2005) indicated that different stakeholders (e.g., users, project managers, team members, sponsors, and top management) are interested in different aspects of the project’s success. The issue of users’ criteria for evaluating an IT project as success forms a separate research topic that is widely covered by the literature regarding user acceptance. According to Nelson, project managers tend to favour the iron triangle criteria, whereas the top managers are more interested in business outcomes. It is important to note that meeting functional requirements does not ensure the achievement of organizational goals or specific business outcomes. Shenhar, Levy & Dvir (1997) stated that poor project definition and weak articulation of the product requirements may result in a project that meets the specifications but does not provide a useful product. What is more, even if a product is useful, it may fail to provide business value to the organization due to the changing business environment or organizational strategy (Lech, 2013).

Eveleens & Verhoef (2010) made another finding that is crucial for assessing the project success criteria used in the Standish reports, namely that Standish compares the actual data only with the initial project forecasts and does not account for the forecasting biases. According to these authors, different organizations have different forecasting routines.

Some would show the lowest possible estimates, some would try to make their forecasts as exact as possible, and some others would steer towards the Standish criteria fulfilment and overestimate the project parameters such that all projects are always 'successful.' Regardless of the forecasting routines adopted by a given company, deviations of the actual values from the initial plan may also occur due to various reasons, and these reasons may affect the project assessment as a success or failure. A deviation from the plan may occur due to poor forecasting, may be the result of poor project performance or management and may also be caused by changes inside or outside an organization that could not be anticipated during the initial planning stages, just to name a few. In other words, as Eveleens & Verhoef summarized, 'the part of the project's success that's related to estimation deviation is highly context-dependent.' (Lech, 2013).

Projects come up to create something unique. Being unique, they need different methods for their management. In the absence of a method to choose the most appropriate method to apply in each case, organizations adopt classic project management methods. Classic project management methods mean a homogeneous collection of standardized tools, processes, procedures, and practices to improve project effectiveness and increase the chances of success. Classic methods homogenize organizations' project areas and the way to manage projects. They assume that there are more similarities than differences in projects, thus enabling performance optimization through adopting practices based on process standardization (Luis de Moura, Janes Carneiro and Lemos Dias, 2023). On the other hand, the discussion of the nature of a project's success considers that projects are not isolated in time and space. They are implemented in an environment that influences and is influenced by the project. Assuming that methods apply to all projects, classical management methods can, in some situations, lower project success rates (Varajão, 2022). Thus, project management literature diverges on what leads to project success: standardization of procedures, which implies slight environmental adjustment; the flexibility of procedures, which implies adjustments to the context; or hybrid models that propose combinations of both approaches. Classic project methodologies are regarded as the source of formality in project management, with rigid natures and the adoption of strict linear processes (Owen *et al.*, 2006). Agile project management has a flexible and adaptable approach to delivering projects, products, and services. Agile project management involves the ability to act proactively in a dynamic,

arbitrary, and constantly changing environment in a manner which is flexible, lightweight, and collaborative (Rico, 2008). A hybrid approach could combine two different methodologies, producing a new and more efficient model by mixing, for example, the agile mindset with plan driven structured frameworks. The outcome could improve corporate policies and procedures and promotes flexibility and productivity (Papadakis & Tsironis, 2020). Shenhar and Dvir (1996) were the first proponents of customizing project management methods. This position was contrary to the literature's tendency that stated the "one size fits all" mantra.

The present research premise is that project management needs adjustments throughout the project life cycle. This study assumes that the globalization of markets and rapid technological changes of the VUCA era cause changes in the environments in which the projects are inserted (Bennett and Lemoine, 2014). Projects are influenced by this business environment, leading to a mismatch between the management method and project results. This scenario emerges in this study to analyze the impact of project management's adverse environment on project success and the moderating role of the project management method choice. The environment is one factor that impacts the success of projects (Luis de Moura, Janes Carneiro and Lemos Dias, 2023). Other factors also have influences, but this study is limited only to those related to the environment of projects characterized by VUCA.

Success Measurement in Project Management for IT Projects: A Quantitative Evaluation

Its dynamic and diverse nature best describes the field of project management, especially within information technology (IT). Project stakeholders and practitioners place a high value on the capacity to accurately measure IT initiatives' performance. The existing evaluative quantitative research studies that concentrate on measuring the performance of IT projects are critically analyzed in this literature overview. This study will examine these studies to explore the variety of quantitative measures used to measure success, the subtleties of how they are used, and the difficulties in understanding them. Several research initiatives have been made to provide quantitative indicators for evaluating the success of IT projects. Errida & Lotfi, (2021) have presented several measures beyond standard benchmarks like cost, scope, and schedule. Their contributions include brand-new metrics for system effectiveness, user satisfaction, and adherence to quality standards. These studies shed light on how success

criteria have evolved dynamically in line with the complex environment of IT projects. These researchers highlight the necessity for a comprehensive and flexible strategy to evaluate the successes of IT efforts in today's complex technological environment by going beyond conventional measurements (Gunduz & Almuajebh, 2020).

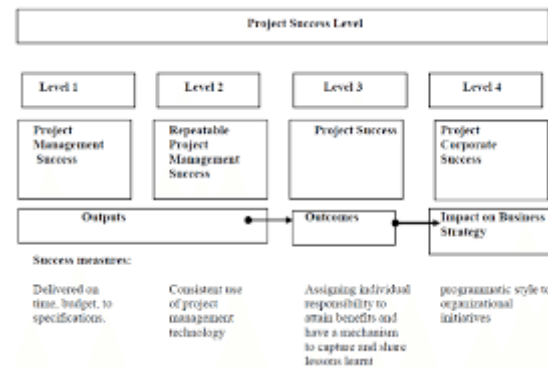


Figure 1: Success measurements

Source: Project Success level, 2021.

Numerous factors might affect the quantitative measurements used to evaluate the effectiveness of IT projects. The perspectives of various stakeholders substantially influence the importance given to different indicators. For instance, a project manager could emphasize deadline adherence, but end users might emphasize user happiness and functionality. This diversity underlines the demand for a comprehensive evaluation system. Iriarte & Bayona (2021) highlight the significance of balanced scorecards that integrate financial and non-financial variables to guarantee thorough success evaluation. Such a strategy acknowledges the complexity of IT projects and considers the differing viewpoints of stakeholders, thereby improving the precision and applicability of success assessments. It might be challenging to apply quantitative measurements to evaluate the performance of IT initiatives (Errida & Lotfi, 2021). Such projects' naturally dynamic character usually causes changes in requirements and objectives during development. Determining a firm set of performance metrics as a result becomes challenging. External factors like market movements and technological advancement might influence metric results, adding to the complexity. This variation needs to improve the development of globally applicable success measurements. Li et al., (2019) emphasize how contextual elements, such as project size, complexity, and corporate culture, affect how quantitative measures should be interpreted. These considerations complicate the

alignment of measurements with project specifics because they add a degree of subjectivity. The speed of IT projects can often make conventional measures outmoded or insufficient. For instance, the emphasis on ongoing revisions and customer feedback may make traditional "on-time delivery" criteria less critical in an agile development context (Gunduz & Almuajebh, 2020).

Targeted efforts in particular areas are required to increase the accuracy of success measurement in IT projects. Prioritizing the development of standardized frameworks that combine objective and subjective measures is a task for researchers. Such frameworks would allow for a comprehensive assessment of success, appropriately capturing the many stakeholder perspectives. As per the view of Podgórska & Pichlak, (2019), These frameworks may present a more nuanced view of success by integrating quantitative data with qualitative observations. Another way to improve success in measuring effectiveness is through longitudinal research. Monitoring the changes in success indicators over time enables a dynamic evaluation of their adaptability and usefulness in the ever-changing IT ecosystem (Li et al., 2019). These studies would be an excellent resource for understanding which measures hold up over time and which must be changed to remain relevant (Wuni & Shen, 2019). Using a collaborative strategy that includes researchers, practitioners, and project managers is crucial. By sharing their knowledge, these stakeholders may help design comprehensive and flexible success assessment models. With the help of this partnership, it would be possible to develop more robust and situationally appropriate success evaluation procedures by ensuring that the many subtleties of IT projects are effectively handled. Tam et al., (2020), IT project management evaluative quantitative research studies emphasize the dynamic nature of success measurement. The variety of measures suggested to assess the performance of IT projects reflects the changing expectations of stakeholders and the technological landscape. The constant improvement of success assessment methodologies is necessary due to difficulties brought on by various stakeholder viewpoints, project volatility, and contextual variables. Future success measurement of IT projects may be made possible by standardized frameworks and cooperative initiatives (Podgórska & Pichlak, 2019). In turn, this would improve project management procedures and support the general success of IT endeavours.

Contribution of individual/group of project success factors to project success or failure

The literature examining the impact of individual or group project success elements on the accomplishment or inadequacy of IT projects provides insightful information into the complicated dynamics of managing technology-driven initiatives. Researchers have thoroughly studied the distinctive qualities that affect IT project success. The key drivers of success for IT projects have been recognized as internal elements such as project management techniques, stakeholder participation, and technical knowledge. Research by Ayat et al., (2020) shows how efficient project management techniques, which include scope definition, risk management, and resource allocation, have a substantial impact on the success of IT projects by assuring alignment with goals and optimal resource use. The success of a project is significantly influenced by stakeholder participation (Ayat et al., 2020). According to research, the active engagement of end users, sponsors, and stakeholders throughout the project lifecycle has significant ramifications. It helps streamline requirements, reduce change resistance, and boost customer happiness. The project's overall success is improved by this collaborative approach, which also helps project objectives match stakeholder expectations. The technical expertise of the project team is also essential and serves as a critical indicator of success. A skilled workforce knowledgeable about the nuances of IT projects is necessary, as studies by Javed Iqbal et al., (2019) emphasize. Their knowledge becomes crucial in managing the difficulties involved in such initiatives. A talented team plays a critical part in the achievement of the project's goals by improving not only the project's execution but also ensuring the prompt delivery of results. Ultimately, it becomes clear that stakeholder involvement and the technical proficiency of the project team are essential elements that impact project success through promoting teamwork and deftly managing the complexities of IT projects (Javed Iqbal et al., 2019).

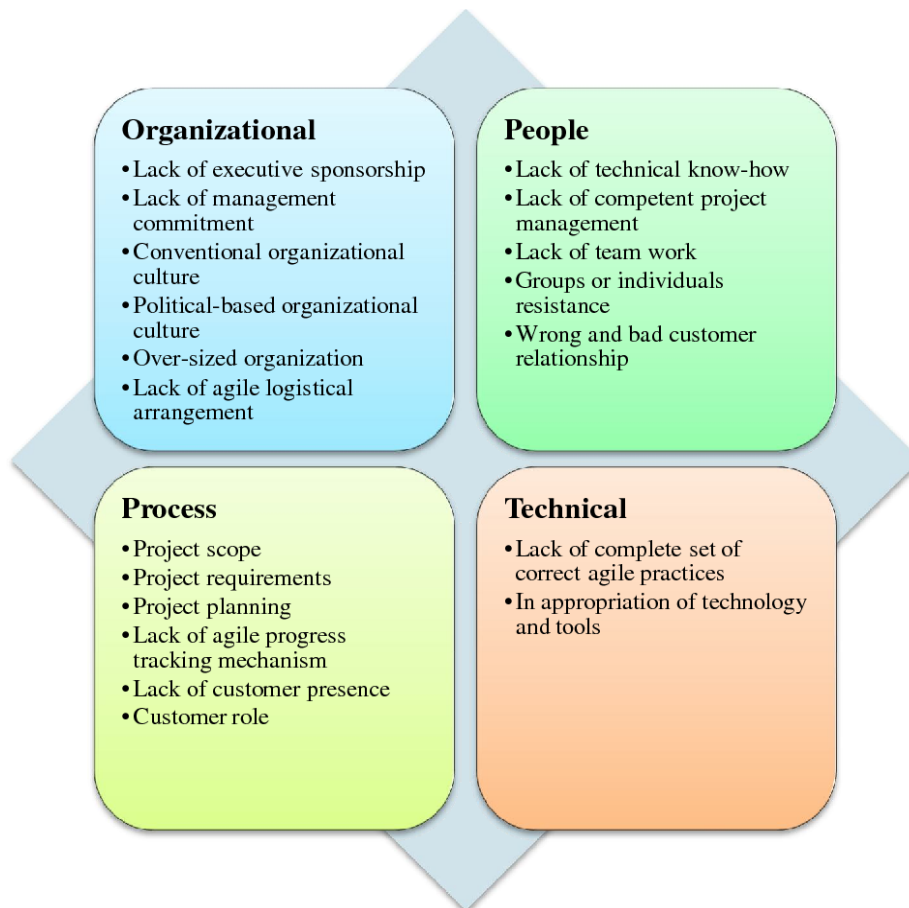


Figure 2: A Theoretical review on IT project

Source: Luna-Reyes et al., (2021)

Outside variables significantly influence the results of IT initiatives. Organizational support, regulation adherence, and alignment with corporate objectives are significant influencers. The study by Luna-Reyes et al., (2021) highlights the importance of these elements in determining project paths. It emphasizes the critical importance of senior management backing and organizational commitment to IT activities in ensuring project success. Project effectiveness, resource allocation, and stakeholder collaboration may all be significantly impacted by the amount of commitment displayed at the managerial level. Regulatory norms are also a crucial external component, especially in data-driven initiatives where compliance is paramount. In particular, following laws like the General Data Protection Regulation (GDPR) is vital (Luna-Reyes et al., 2021). The report underlines that ensuring legal conformance, reducing the possibility of legal entanglements, and protecting against potential liabilities are all achieved by aligning projects with such standards. The success and reputation of the project may be seriously damaged if regulatory compliance is neglected. Organizational support, regulatory

compliance, and alignment with business objectives all highlight the complex external environment IT initiatives operate. Beyond the confines of the project, their influence significantly impacts organizational goals, project success, and legal viability.

It is well known that one of the critical determinants of project success is how well IT initiatives fit with broad business objectives. According to Montenegro et al., (2021), industries that are well-aligned with organizational plans and priorities are more likely to be successful and have the potential to provide significant and noticeable benefits. The connection between IT initiatives and corporate goals is crucial in today's complicated and quickly changing business environment, when technology affects almost every facet of operations. Projects are purpose-driven and connected to the company's requirements and goals when integrated with the organization's strategic direction (Montenegro et al., 2021). Projects are ensured to be strategic facilitators that promote growth, efficiency, and innovation rather than merely technology undertakings by this alignment. A framework where IT activities are not undertaken in isolation but relatively smoothly incorporated into the larger organizational fabric is fostered by such alignment. This synergy guarantees that IT initiatives immediately aid in attaining the desired business results, optimizing resource allocation, and reducing duplication. For instance, an IT project to modernize customer relationship management (CRM) software is consistent with corporate goals to improve client loyalty and experiences.

Furthermore, senior management and stakeholders automatically support and interact more with linked IT initiatives. This is so people can understand how these projects affect the organization's performance. A compelling story that resonates throughout the business is created by telling how an IT endeavour directly leads to increased revenue, cost savings, and customer satisfaction (Javed Iqbal et al., 2019). The alignment of IT initiatives with business objectives is not just a desired feature but also a crucial one, as shown by Turner and Keegan's perspective. Projects that closely resemble organizational plans consider fundamental business requirements, promote value creation, and transform technology from a tool into a strategic asset. By bridging the gap between technology and business, this alignment helps companies to advance in a coordinated and significant way toward their objectives.

Causal interactions between individual/group of project success factors and simulations of these

A helpful method for improving project management techniques is the analysis of the causal relationships between individual and group project success elements and their simulations. This literature review investigates how these causal links affect project results and how simulations show their dynamic character.

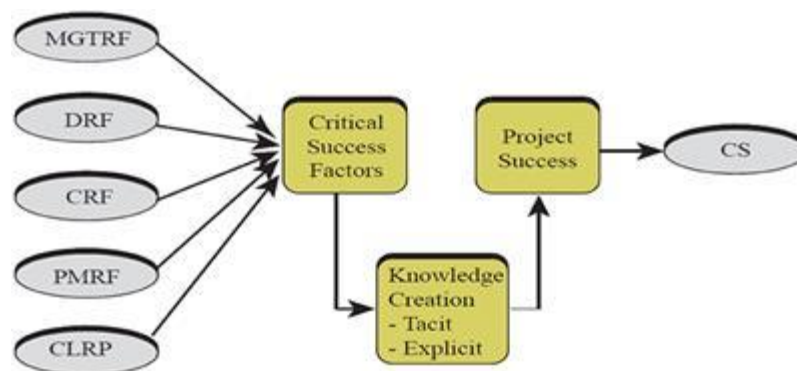


Figure 3: Impact of critical success

Source: Muñoz & Chion, (2020)

Numerous studies have examined the combined effect of individual and group project success elements on the final result of projects. By illuminating the complex relationships between several components, such as leadership, resource distribution, and team proficiency, Li et al., (2019), have added to our understanding of these relationships. Their study demonstrates how these factors, whether taken into account alone or together, significantly affect the course of a project. When resources are allocated wisely, team expertise assures excellent execution and effective leadership may inspire direction. The success or failure of the project is determined by how these elements interact. Muñoz & Chion, (2020) clarify the significance of group-level variables in affecting project results. Their study focuses on how several components, including communication, risk management, and the well-known "Iron Triangle" of scope, time, and cost, are interconnected. Cooperation and understanding between team members are facilitated by effective communication, while project risks are reduced through skilful risk management. The "Iron Triangle" symbolizes the interconnection of project restrictions and how changes in one can influence the project's success.

Dynamic and engaging simulations may uncover project management's intricate network of causal linkages. Researchers use simulations to create virtual worlds where different scenarios may be modelled, components can be changed, and the impacts on project outcomes can be seen. This approach comprehensively explains the complex interactions between numerous contributing factors (Pall et al., 2019). Simulations offer a priceless tool for analyzing the cause-and-effect relationships influencing project success. For instance, a simulation may demonstrate that improving leadership effectiveness has a beneficial impact on team performance and resource allocation, which fosters a favourable climate for the entire project's success. Simulations uncover insights that could go unnoticed by simulating real-world variables and situations in a regulated virtual environment. Simulator use has benefits that go beyond the academic world. Project managers are given practical knowledge through simulation insights that allow for strategic optimization and well-informed decision-making (Sperry & Jetter, 2019). Managers may create plans that capitalize on advantages and address weaknesses if they know how changes to particular characteristics may spread throughout the project environment. This proactive strategy may boost project success rates, increase efficiency, and reduce hazards.

Simulations' integration of causal relationships opens up a pathway with enormous promise for predictive project management. Leading scientists like Toledo et al., (2023) have demonstrated how including the interaction of individual and group elements in simulations may provide prescriptive insights on potential project paths. Simulations provide a framework for foreseeing difficulties, identifying crucial success variables, and anticipatorily resolving risks by modelling these intricate interactions. These simulations' usefulness extends beyond their sensitivity analysis capabilities. Simulations allow professionals to analyze the complex web of interdependencies among project variables (Zhang et al., 2020). The project managers may efficiently prioritize their efforts, which equips them with a thorough grasp of how changes in particular factors affect the project environment. The use of predictive simulations may significantly improve project management tactics. These simulations enable project managers to take a proactive approach by providing a look into prospective futures. Using resources wisely and making well-informed decisions is possible when potential hurdles are anticipated and critical success criteria are recognized (Muñoz & Chion, 2020). This

anticipatory strategy provides a clear benefit in reducing difficulties and guiding projects toward successful results as projects get more complicated.

A comprehensive knowledge of project dynamics is aided by the research of the causal relationships between the many aspects that determine individual and group project performance, as well as by their simulations (Zhang et al., 2020). The interaction of these elements dramatically influences project results, and simulations are an effective tool for modelling and forecasting their impacts. This research enhances project management tactics, allowing practitioners to traverse uncertainty with greater accuracy and improving the general success of projects by bridging theory and actual practice.

The role and importance of project managers

Project managers have been widely discussed in the literature concerning their importance and function in IT project management, underlining their crucial contributions to project success. Leadership, coordination, communication, and strategic decision-making are just a few of the many tasks that project managers play. The study by Alvarenga et al., (2019), underlines how project managers are conductors, coordinating various project components to produce desired results. Their capacity for navigating difficulties, wise resource management, and successful teamwork is crucial. The project manager's position is much more critical in IT projects because of the frequent evolution of technology and dynamic needs. The project manager's role in addressing technology-driven uncertainties and coordinating project goals with shifting business requirements is highlighted by studies by (Armenia et al., 2019). It is emphasized that key competencies for IT project managers include effective stakeholder involvement, risk management, and communication. The value of project managers is found in their ability to connect technical teams, end users, and senior management. Their management ensures that the project has a clear goal, uses resources effectively, and is delivered on schedule. The literature, on its whole, emphasizes that project managers in IT projects act as linchpins, coordinating many components, matching technology with business goals, and assuring effective project results in the ever-evolving environment of technology-driven efforts.

As competent orchestrators tasked with coordinating the complex elements that characterize the project's lifespan, project managers play a crucial role in IT project management. Francisco

de Oliveira & Rabechini Jr, (2019), research confirms that project managers serve as bridges between technical teams, stakeholders, and organizational leadership. Their work is characterized by clear communication and the ability to explain complex technical concepts to various stakeholders. Project managers are responsible for coordinating technical efforts with broad commercial objectives in the changing environment of IT initiatives. This entails monitoring the project's advancement and each step's alignment with the company's strategic goals. Project managers encourage informed decision-making, increasing the probability of successful project results by developing a thorough awareness of both the technical and commercial worlds.



Figure 4: Project Management

Source: Khosravi et al., (2020)

Project managers also promote collaboration across cross-functional teams as they coordinate the activities of developers, designers, analysts, and end users. They make sure that various components seamlessly converge, resulting in a final product or solution that is coherent and useful. This orchestration also includes risk management, where project managers foresee difficulties and implement mitigation plans to protect project timetables and deliverables.

Due to their crucial oversight of the project's scope, schedule, and resources, project managers' importance becomes clear. Notably, Khosravi et al., (2020) emphasizes the crucial function that projects managers take in maintaining the well-known "Iron Triangle" idea. As a fundamental framework for project management, this framework considers project scope,

time, and resources. Project managers skillfully manoeuvre this triangle's complexities to keep projects in line with the goals and limits that have been established. Project scope management is a critical component of a project manager's job (Khosravi et al., 2020). By carefully specifying project limits and deliverables, project managers avoid scope creep, which can result in project delays and resource overruns. Their adept handling of scope revisions and amendments reduces the risk of project objectives getting hidden or diluted. They play an essential time management function, too. Project managers create detailed timetables, establish milestones, and efficiently distribute resources to guarantee that projects are completed on schedule. They can manage bottlenecks and minimize delays proactively, preserving project timelines, thanks to their proficiency in identifying essential pathways and managing dependencies.

Resource management emphasizes the crucial function of project managers even more. They balance availability and project demands by wisely distributing human capital and financial allocations. This not only maximizes resource usage but also avoids resource shortages that can jeopardize the timeliness or quality of a project (Pan & Zhang, 2021). Ultimately, a project's success depends on the manager's ability to keep the "Iron Triangle" intact. Their capacity to balance project scope, time, and resources aids in the timely and cost-effective completion of projects, which meets stakeholder expectations and ensures project viability. Their skilful management of conflicting demands exemplifies their crucial contribution to accomplishing project goals.

Additionally, project managers' leadership dramatically impacts how the team works and how the project turns out. Project managers not only give guidance but also build a motivated and cooperative team atmosphere, according to research by Thesing et al., (2021). Their leadership skills impact the project's morale, productivity, and cohesiveness. Technical aptitude and domain knowledge are of the utmost relevance for project managers in IT projects because of the numerous technology breakthroughs and complexity present. According to research, project managers knowledgeable about the intricacies of IT can make wise judgments, anticipate problems, and interact with technical teams efficiently.

Project success factor framework

In the literature on project management, the idea of a project success factor framework has drawn much interest as a thorough method of comprehending the various factors that make a project successful. An in-depth examination of the creation, use, and consequences of project success factor frameworks is done in this literature study. Frameworks for measuring project success offer systematic, thorough representations of the many aspects of project performance. Researchers like Abal-Seqan et al., (2023) emphasize the need to meticulously collect and categorize these aspects to provide comprehensive knowledge of the project's trajectory. These frameworks, tailored to particular sectors, environments, or project kinds, consider the various nuances determining success. These frameworks help project managers with strategic planning by classifying elements like leadership, stakeholder involvement, risk management, and resource allocation (Abal-Seqan et al., 2023).

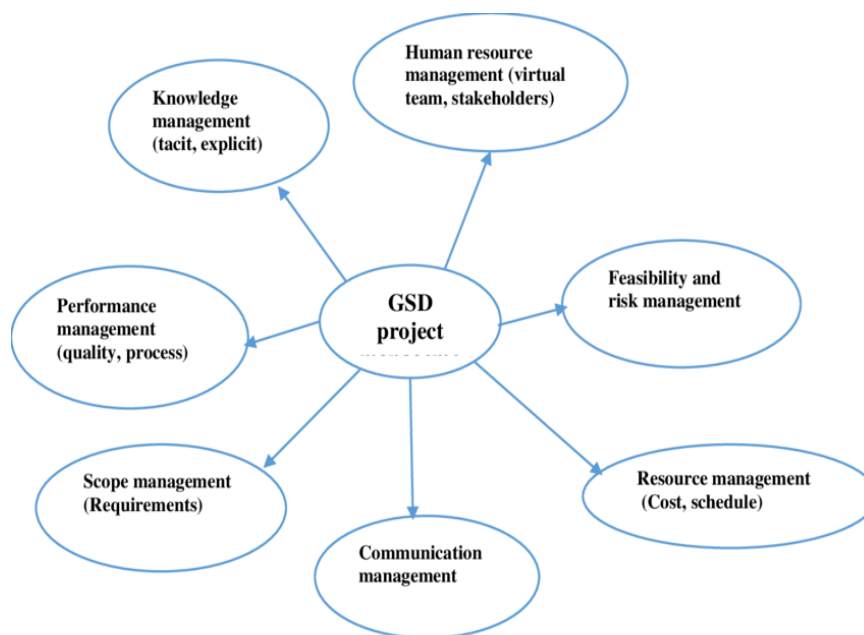


Figure 5: Success Factor Framework

Source: Ahmadabadi & Heravi, (2019)

Project success factor frameworks operate as complete warehouses for various factors in IT projects, including tangible and intangible aspects of project outcomes. These frameworks frequently take a variety of elements into account, such as but not limited to project scope, cost, time, quality, stakeholder satisfaction, and alignment with corporate goals. The

pioneering work of Ahmadabadi & Heravi, (2019), who propose a comprehensive framework including technological, organizational, and external factors, is a noteworthy contribution to this subject. Project managers may more easily negotiate the complex terrain of IT projects with the help of their framework, which offers an integrated and systematic perspective of project success factors. In the dynamic and changing environment of IT initiatives, these frameworks help decision-makers, create good communication, and increase the chances of obtaining successful project results by including both quantitative measurements and qualitative components. Project success factor frameworks go beyond simple categorization and offer a basis for evaluation, prioritizing, and decision-making throughout a project's lifespan (Ahmadabadi & Heravi, 2019). Armed with such frameworks, practitioners may examine the relationship between these variables and pinpoint potential risks, difficulties, and possibilities. With the help of this proactive strategy, project managers can better target their systems, allocate resources wisely, and increase the likelihood that their projects will be successful.

Furthermore, these frameworks provide perceptions of the changing character of project success. The relevance of elements may change as a project develops, according to research by Arshad et al., (2023). While early-stage factors like stakeholder participation and a clear project concept may strongly influence overall performance, execution-stage aspects like risk management and adaptive leadership take centre stage. This temporal dimension highlights the flexibility and responsiveness that these frameworks enable. The use of project success factor frameworks, however, has its challenges. Careful customizing and adaptation of these frameworks are necessary due to the contextual heterogeneity between sectors, projects, and organizational cultures. Furthermore, figuring out how important each component is in the context of a particular task is still a complex undertaking. Awuzie & Monyane, (2020) research supports a dynamic strategy considering the specific project environment and stakeholders' expectations.

Frameworks for project success factors offer a thorough lens through which to examine, rate, and improve project results. These frameworks provide a disciplined approach to project management by methodically classifying and prioritizing various variables that affect success. Although tailoring these frameworks to specific projects can be difficult, it is impossible to overstate how useful they are for assisting with resource allocation, risk management, and

decision-making (Kivijärvi, 2020). How these factors' importance changes throughout a project's lifespan illustrates the flexibility and responsiveness that project success factor frameworks provide to modern project management techniques.

Literature gap

Although there is a sizable body of research on project success factor frameworks, there needs to be more clarity in our understanding of the dynamic interactions and relative importance of these variables in the context of quickly developing industries and technology. Even though existing research offers insights into identifying, categorizing, and prioritizing project success factors, more is needed to know how these factors adapt and manifest differently across various project types, such as traditional versus agile methodologies or emerging fields like artificial intelligence and sustainable development projects. Additionally, most current research focuses on the individual effects of success determinants, frequently ignoring the intricate interconnections and trade-offs that arise when numerous factors are considered (Miller, 2022). Most of the research has concentrated on developing and validating success factor frameworks for specific sectors, omitting the possible variation in their efficacy when applied to projects in other corporate cultures or geographical situations. A growing focus on stakeholder participation, sustainability, and ethical issues is another feature of the modern project management environment. There must be a significant knowledge gap on how project success factor frameworks consider and represent these shifting objectives (Simon et al., 2020). Project success may be redefined and assessed in the contemporary project management environment by investigating how these unique dimensions interact with established success metrics.

Conceptual framework

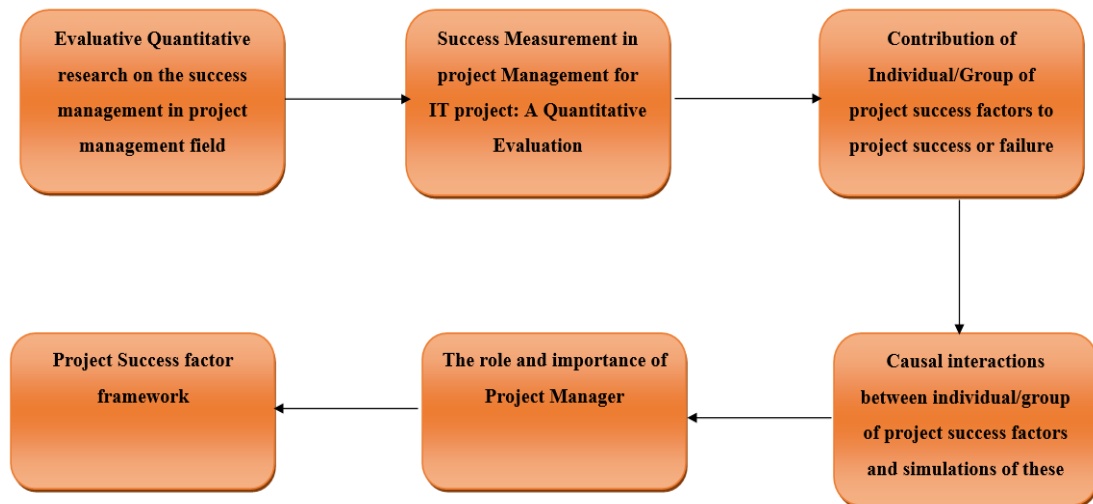


Figure 6: Self-Made

Conclusion

In conclusion, the literature study highlights the complexity of project success, particularly in the context of IT projects. The interaction of individual and group variables, the function of project managers as orchestrators, and the use of simulations for predictive insights all work together to shed light on the intricate dynamics at work. Understanding the complexities of project management is further aided by the crucial role that project managers play in coordinating projects with corporate objectives and the necessity of project success factor frameworks. This study gives readers a solid basis for comprehending the many factors influencing project success and offers insightful advice for efficient project planning and execution.

METHODOLOGY

Introduction

The chapter on research methodology describes the systematic process used to compile, examine, and evaluate data for a study. It provides a road map for guaranteeing the study's validity, dependability, and general credibility by outlining the selected methodology, instruments, and approaches.

Research Philosophy

A study's approach to knowledge and reality is supported by its research philosophy. Insisting on practicality, pragmatism promotes using techniques appropriate for the research objectives. Through deliberate observation and measurement, positivism looks for empirical proof. Realistic thinking acknowledges an external reality while also considering the role of perception. The goal of interpretivism is to comprehend social processes by using context and individual interpretations. These ideologies direct the selections made by researchers about technique, data collecting, and analysis, influencing the study's viewpoint on reality and knowledge. The epistemological attitude of the researcher is aligned with the philosophy chosen, which affects the design and results of the investigation (Al-Ababneh, 2020). In project management, using interpretivism as the research philosophy for evaluative quantitative research gives a complex way of comprehending success assessment. In this situation, interpretivism recognizes that numerical measures cannot just measure project management success. Interpretivism allows exploring the many facets of success more deeply by accepting subjective meanings and contextual insights. This ideology acknowledges that attaining project success entails more than just hitting quantitative benchmarks; it also considers stakeholder views, project team dynamics, and environmental elements that affect project outcomes. Through interpretivism, this study can reveal subtleties that would otherwise go unnoticed, helping to create a more complete and holistic picture of success measurement beyond purely statistical analysis and considering the social and human factors fundamental to project management. The evaluative quantitative research philosophy for project management's success measurement did not include pragmatism, positivism, or realism (Babii, 2020). To explore the intricate and individualized facets of success, interpretivism was

recommended. The emphasis on context and subjective meanings in interpretivism is more in line with examining the subtle and qualitative components of success in project management than the empirical focus of positivism or the acknowledgement of external reality in realism.

Research design

A study's methodology, approach, data collecting, and analysis are all outlined in the research design. Exploratory research, which frequently uses qualitative techniques like focus groups and interviews, tries to obtain an understanding of a novel or complicated subject. It aids in creating hypotheses and directing further study. By confirming current ideas or putting proposed theories to the test, conclusive research aims to arrive at definite findings or judgments. It comprises causal and descriptive analysis, the latter examining cause-and-effect links. Exploratory analysis offers preliminary insight, whereas conclusive research shows tangible results or answers. Both styles are essential at various phases of the study (Dodds & Hess, 2020). Choosing the conclusive research design for the evaluative quantitative survey on project management success measurement is advisable. The study's objective, to quantify success, is aligned with the design's organized methodology, which guarantees exact results. The study can produce unmistakable revelations about the efficacy of project management strategies by using tried-and-true measuring techniques and statistical analysis. The design's definitive character facilitates the confirmation of hypotheses and provides verifiable data to support judgments. This approach ensures sound findings, helping to improve project management methods and practices because the area necessitates rigorous assessment and valuable outcomes (Dzwigol, 2022). The conclusive research design increases the validity and relevance of the study's findings within the ever-changing field of project management through a well-structured methodology. The survey of success measurement in project management excluded the exploratory research design. Instead, a definitive study strategy was picked. While preliminary ideas and the creation of hypotheses might have come from experimental research, the emphasis switched to quantitative validation and exact conclusions. In keeping with the study's goals and the demand for precise results in the field, this choice intended to give tangible conclusions about project management effectiveness.

Research approach

Research approaches guide the logic and methods of a study. Deduction is a standard method in quantitative research that starts with a basic theory and then evaluates particular assumptions. As is common in qualitative research, induction starts with individual observations before drawing broad generalizations. Abduction, frequently used in qualitative and exploratory research to bridge the gap between theories and data, proposes plausible explanations for observed occurrences. Induction seeks abstraction, abduction elicits novel hypotheses, and deduction seeks confirmation (Greening, 2019). Researchers might address inquiries with accuracy, depth, or originality depending on the nature of their study because each strategy has certain advantages and fits with different research aims. The inductive research technique has several advantages for Evaluative Quantitative Research on Success Measurement in Project Management. In this situation, precise facts gathered through quantitative assessments of project performance serve as the foundation for the inductive method. This method finds patterns, trends, and insights that would not have been immediately obvious. It is possible to identify developing patterns and correlations in quantitative data via careful analysis, which can inspire fresh hypotheses or improved ideas (H. R. & Aithal, 2022). The inductive approach is constructive in this study because it permits a data-driven analysis of success variables in the context of project management, which adds to a richer and more complex knowledge of success measurement. Drawing conclusions anchored in fact and supported by data makes it easier to discover unexpected insights and raises the credibility of the study's findings.

Sampling technique

By putting people into clusters that share particular traits, cluster sampling is a valuable strategy used in research to increase the effectiveness of data collecting. The selection of 100 participants, ages 18 to 75, clearly illustrates the age span in the context of an evaluative quantitative study on success assessment in project management. This method records various experiences and viewpoints pertinent to the study goals. Cluster sampling begins with identifying clusters, such as project groups, teams, or organizational units. These clusters are typical of the larger population that is of interest. The selection of sets to participate in the study will be made at random. Since gathering data from every member of the whole

population would be challenging, clusters are chosen at random, making the sample more manageable and affordable (Mahuika & Mahuika, 2020). Following the selection of collections, researchers can collect data from each member of the selected groups, ensuring a thorough grasp of success measurement in Project Management across multiple units. To effectively generalize results from the sample to the broader population, it is essential to consider any potential biases resulting from cluster similarities and use the correct statistical approaches.

Data collection method

Analyzing data entails looking at, analyzing, and making sense of gathered information. It includes qualitative and quantitative methods. Analyzing qualitative data focuses on material that isn't quantifiable, including text, pictures, or videos. It uses strategies including thematic, content, and narrative analysis to find themes and patterns. Quantitative approaches quantify correlations, trends, and practices when analysing numerical data. Regression analysis, inferential statistics, and other statistical methods are used to determine statistical significance and make predictions. Both techniques facilitate a comprehensive knowledge of research findings across diverse domains (Newman & Gough, 2019). In the context of Evaluative Quantitative Research on Success Measurement in Project Management, a qualitative data-collecting approach using surveys through social media platforms is a beneficial route for accumulating rich insights. This strategy requires creating a survey instrument with open-ended questions that enable respondents to go into more detail about their experiences, perspectives, and difficulties connected to project success. Researchers in project management may connect with a comprehensive and possibly worldwide audience by using social media sites like LinkedIn or specialized forums (Ryder et al., 2019). The survey may be extensively shared through these venues, allowing professionals, practitioners, and experts to provide their qualitative opinions. Reflecting on their own experiences, participants might describe the elements that they believe indicate a project will be successful, the difficulties they have faced, and their successful techniques. By reaching out to a wide range of project management experts who might not be reachable through conventional ways, social media platforms improve accessibility and engagement.

Data analysis technique

Analyzing acquired data entails carefully looking for patterns, connections, and insights. It includes gathering, cleansing, and turning raw data into insightful information. Analysts use statistical and computational techniques to discover patterns, correlations, and relevance in the dataset. The findings aid in testing hypotheses, forming conclusions that align with the study's goals, and making well-informed decisions. The Evaluative Quantitative Research on Success Measurement in Project Management includes essential processes such as interpreting the data gathered and doing thematic data analysis (Snyder, 2019). The interpretation step starts after organized surveys measuring project success measures have collected quantitative data. Statistical procedures, including descriptive analysis and correlation analyses, are used to reveal links between variables. Contrarily, thematic data analysis focuses on the qualitative information gleaned from open-ended survey responses gathered through social media platforms. Researchers look for recurrent themes, patterns, and viewpoints to measure project success. These thematic insights supplement the quantitative findings by giving context for the success-influencing components. The depth and usefulness of the study are enhanced by integrating both quantitative interpretations and theme analyses into one holistic picture.

Validity and reliability

Research fundamentals like validity and reliability uphold the integrity and dependability of study findings. When a research study is considered valid, it may be said to measure the variables it set out to correctly. Validity in the context of Evaluative Quantitative Research on Success Measurement in Project Management guarantees that the chosen success indicators accurately reflect the multifaceted nature of project success. To improve content validity, researchers must carefully identify and select the right success indicators, incorporating factors like project completion time, budget adherence, stakeholder satisfaction, and quality of deliverables (Urcia, 2021). Contrarily, reliability is concerned with the accuracy and constancy of research measurements. Reliability is essential in the study described so that the success measures selected produce repeatable outcomes. This can be accomplished via strategies like test-retest reliability, in which the same participants are given the same survey several times to gauge the consistency of their replies.

Furthermore, a key component of thematic data analysis is assuring dependability. The qualitative data can be independently analyzed by many coders, who can then check for consistency in the discovered themes by measuring inter-coder reliability. This raises the theme analysis's legitimacy (Wohlin & Runeson, 2021). Transparency in study methodology, operational definitions of variables that make sense, and effective data collection techniques are necessary to address validity and reliability issues. Utilizing recognized scales with known validity and reliability in project management for quantitative data improves the credibility of the research. Triangulation, which involves using numerous data sources or methodologies, can increase validity and reliability by correlating results using various techniques.

Ethical consideration

Ethical concerns must be made while conducting research surveys on social media networks. Informed permission is crucial to start. Participants must be fully informed of the research's objectives, the intended use of their data, and their rights to withdraw from the study at any time. Participants will be better able to decide whether to participate if these features are clearly explained in the survey introduction. Confidentiality and privacy are also essential. According to researchers, participants' personal information must be safeguarded, and their answers must stay private (Al-Ababneh, 2020). Privacy hazards are reduced by gathering the required data and employing secure platforms for data storage and communication. Concerns must also be taken for accidental data sharing or breaches brought on by the platform's features. On social media, it's crucial to act with decency and professionalism. Researchers should follow the platform's rules and refrain from sending spam or other intrusive communications that can damage the study's credibility or the impression of its participants. Additionally, because social media users are self-selecting, researchers must be wary of potential biases. The participant pool should be expanded to cover a more comprehensive demographic range to ensure more accurate findings.

Conclusion

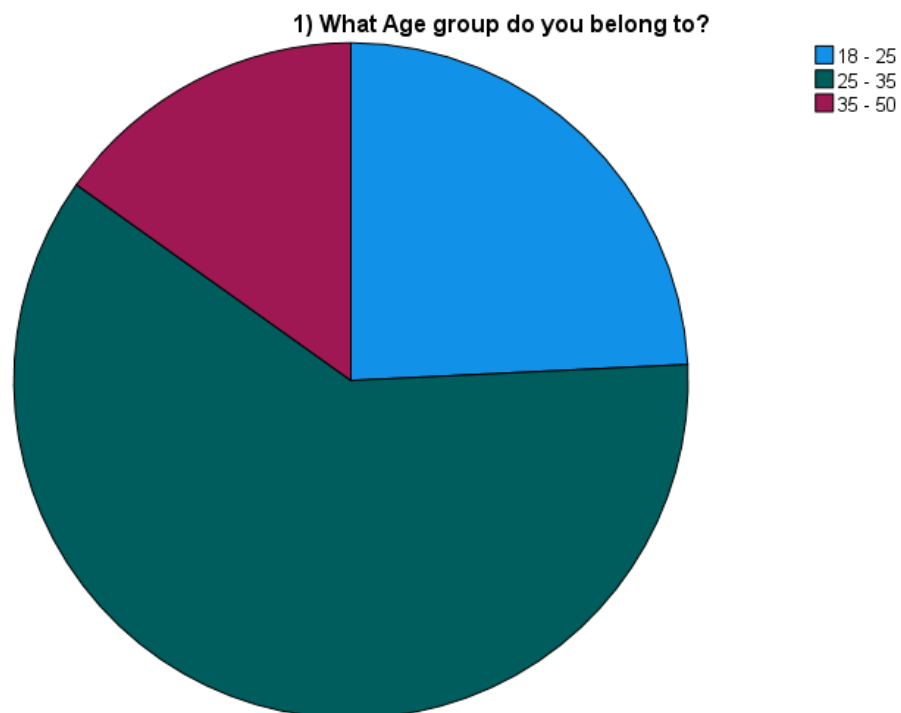
In conclusion, the study methodology chapter describes the methodical strategy used to examine success assessment in project management. The study seeks to offer thorough insights by utilizing qualitative data collected through social media questionnaires. Ethical issues have been included to ensure the study's integrity and validity.

DATA ANALYSIS (Qualitative/Quantitative)

Demographics

1) What Age group do you belong to?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	18 - 25	8	24.2	24.2	24.2
	25 - 35	20	60.6	60.6	84.8
	35 - 50	5	15.2	15.2	100.0
Total		33	100.0	100.0	



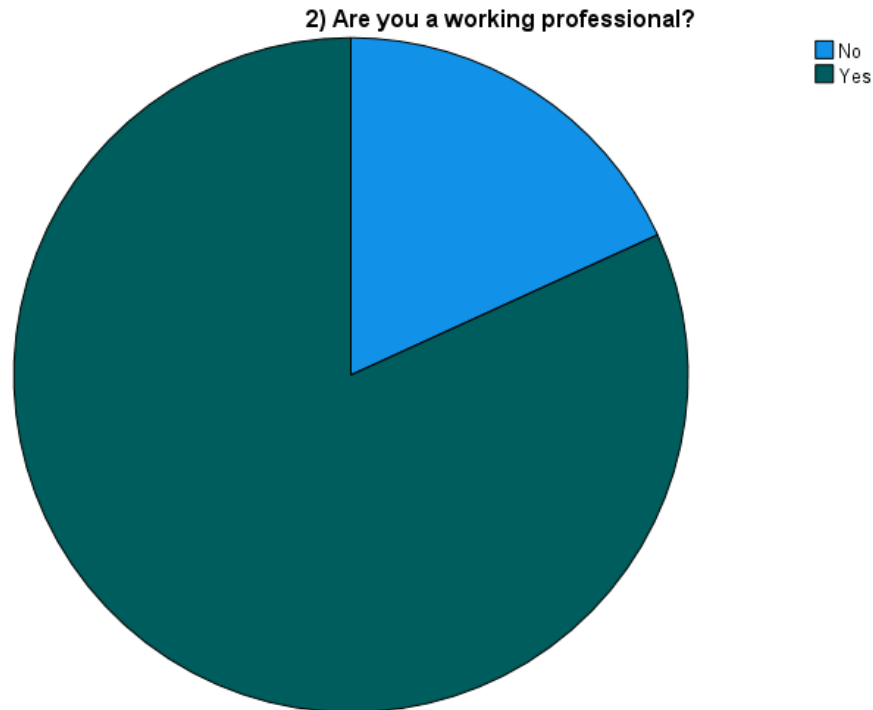
Interpretation: The information provided demonstrates the age distribution of survey respondents divided into three different age groups. 60.6% of respondents, or the most

considerable percentage, are under 20. This means that a sizable percentage of survey respondents who were young adults were represented in this group. Although the second most significant age group is not explicitly specified, 24.2% of respondents identify with it, suggesting it is probably older than the first. Interestingly, a third age group, which is not further defined, accounts for a smaller but significant fraction of respondents (15.2%). It is important to note that the cumulative percentage equals 100 per cent, showing that the data represents the complete respondent pool. This distribution might provide information on the demographics of the survey respondents. The survey's content or topic may be significant to people in their early adulthood, as seen by its predominately 20-year-old respondent population.

Conversely, the group that makes up 24.2% may represent a broader age spectrum, maybe encompassing mid to late adulthood. The survey's topic may not have been as compelling to this population, as seen by the reduced presence in the undefined age group. In conclusion, this age-based segmentation offers helpful context for comprehending the survey's target population and appropriately adjusting future research and analysis.

2) Are you a working professional?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	No	6	18.2	18.2	18.2
	Yes	27	81.8	81.8	100.0
	Total	33	100.0	100.0	



Interpretation: The information supplied provides details about the respondents' job situations. The study finds that 81.8% of the respondents, or a sizable majority, identify as working professionals. This significant number indicates that the poll mainly contacted those currently employed in professional jobs. On the other hand, 18.2% of respondents, a minority, stated that they are not employed as professionals. This answer distribution provides insight into the survey respondents' demographic makeup. Given the sizeable presence of working professionals, the survey's content or subject matter is likely oriented to those with expertise and participation in the professional world. It could also suggest that persons actively engaged in a work-related setting, perhaps looking for insights or solutions within their professional domains, are more relevant to the survey's questions or aims. All respondents' job status has been correctly recorded and classified when the cumulative proportion of the data equals 100%. The target audience's occupational background can be understood, the survey findings can be appropriately interpreted, and it may be used to successfully customize the following analyses or suggestions depending on the job environment of the participants. In general, this information offers a view into the survey population's workforce profile and directs the interpretation of the survey's findings in light of the respondents' level of professional participation.

Frequency analysis

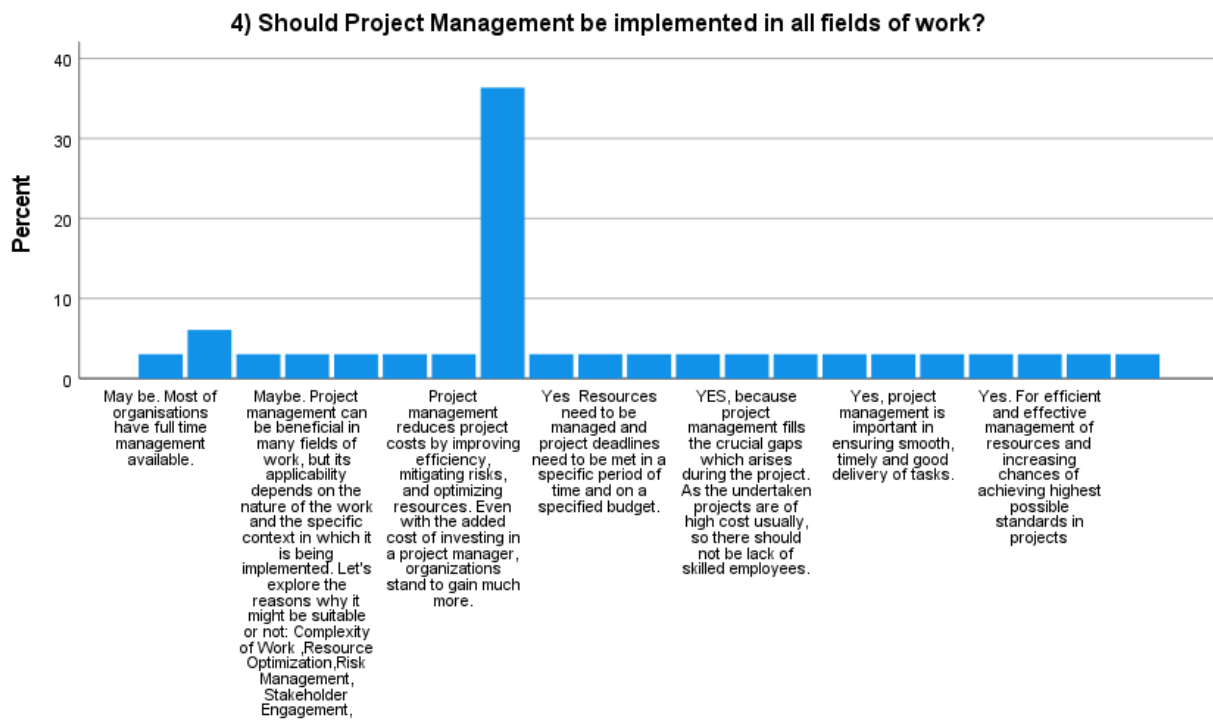
4) Should Project Management be implemented in all fields of work?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Maybe. Most organisations have full-time management available.	1	3.0	3.0	3.0
	Maybe	2	6.1	6.1	9.1
	Maybe, it depends on the need.	1	3.0	3.0	12.1
	Maybe. Project management can be beneficial in many fields of work, but its applicability depends on the nature of the work and the specific context in which it is being implemented. Let's explore the reasons why it might be suitable or not: Complexity of Work, Resource Optimization, Risk Management, Stakeholder Engagement, Predictable Outcomes	1	3.0	3.0	15.2
	Maybe. Implementing project management in all fields of work depends on several factors. While project management methodologies can bring structure, organization, and efficiency to various projects, their applicability may vary depending on the nature of the work involved.	1	3.0	3.0	18.2

Project management is essential because it helps every part of the business run more efficiently and effectively. When done correctly, it enables leadership to plan and manage projects to complete every objective and deliverable on time and within budget.	1	3.0	3.0	21.2
Project management reduces project costs by improving efficiency, mitigating risks, and optimizing resources. Even with the added cost of investing in a project manager, organizations stand to gain much more.	1	3.0	3.0	24.2
Yes	12	36.4	36.4	60.6
Yes, because it will then help the organization reach its goals	1	3.0	3.0	63.6
Yes, Resources must be managed, and project deadlines must be met in a specific period and on a specified budget.	1	3.0	3.0	66.7
Yes, because all the fields need to be well-planned and executed	1	3.0	3.0	69.7
Yes, because it could help different work areas effectively and efficiently implement their plan and achieve their desired milestones within the timeline.	1	3.0	3.0	72.7

YES, because project management fills the crucial gaps which arise during the project. The undertaken projects are usually of high cost, so there should not be a lack of skilled employees.	1	3.0	3.0	75.8
Effective management is essential to create a project plan and meet the timelines.	1	3.0	3.0	78.8
Yes, it's a road towards a goal, and if you follow the path, only you'll see blind spots. In planning communication execution analysis, risk plays a vital role in getting towards the target.	1	3.0	3.0	81.8
Yes, project management is essential in ensuring task smooth, timely and sound delivery.	1	3.0	3.0	84.8
Yes, very important in Every filed	1	3.0	3.0	87.9
Yes. All processes need to have an organization	1	3.0	3.0	90.9
Yes. For efficient and effective management of resources and increasing chances of achieving the highest possible standards in projects	1	3.0	3.0	93.9
Yes. It will result in the overall development	1	3.0	3.0	97.0

Yes..for any project, proper planning and tracking are a must, and only with Project management techniques any committed deadlines can be met.	1	3.0	3.0	100.0
Total	33	100.0	100.0	

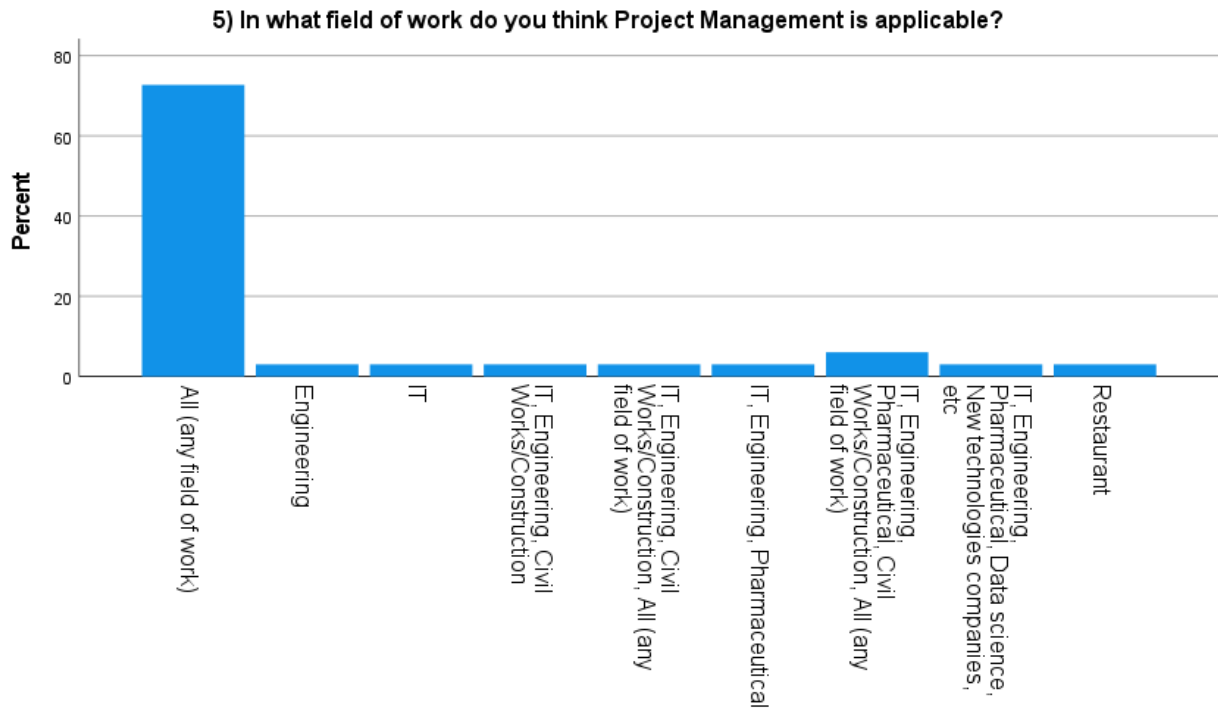


Interpretation: The responses provided offer a range of viewpoints on whether Project Management should be implemented across all fields of work. While most participants (36.4%) affirm the importance of implementing Project Management universally, other responses express a more nuanced perspective. Several respondents acknowledge that the applicability of Project Management depends on various factors. These include the complexity of the work, resource optimization, risk management, stakeholder engagement, and the predictability of outcomes. These considerations contribute to a balanced understanding of when Project Management methodologies might be most suitable.

Participants who advocate for implementing Project Management (36.4%) emphasize its role in improving efficiency, reducing project costs, and ensuring objectives and deliverables are achieved on time and within budget. This perspective underscores the broader benefits that effective Project Management can bring to any field. The cumulative total of 100% ensures the comprehensive representation of responses. While many respondents see the value in implementing Project Management across diverse fields, several participants acknowledge the contextual factors that influence its applicability. This diversity of opinions reflects an appreciation for the benefits of Project Management while recognizing that its implementation should be tailored to each field's specific needs and characteristics.

5) In what field do you think Project Management is applicable?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	All (any field of work)	24	72.7	72.7	72.7
	Engineering	1	3.0	3.0	75.8
	IT	1	3.0	3.0	78.8
	IT, Engineering, Civil Works/Construction	1	3.0	3.0	81.8
	IT, Engineering, Civil Works/Construction, All (any field of work)	1	3.0	3.0	84.8
	IT, Engineering, Pharmaceutical	1	3.0	3.0	87.9
	IT, Engineering, Pharmaceutical, Civil Works/Construction, All (any field of work)	2	6.1	6.1	93.9
	IT, Engineering, Pharmaceutical, Data Science, New technologies companies, etc	1	3.0	3.0	97.0
	Restaurant	1	3.0	3.0	100.0
	Total	33	100.0	100.0	



Interpretation: The information presented outlines respondents' perceptions of the applicability of project management across a range of professional specialties. Project management is relevant in all domains of employment, according to a large majority of respondents (72.7%). This startling number proves the commonly accepted idea that project management techniques are adaptable and can be successfully used across various sectors. A closer look at the data reveals specific industries that respondents believe use project management. Engineering, IT, Civil Works/Construction, and Pharmaceutical industries all received replies from a small number of respondents, accounting for 3% of the total. Several respondents recognized that project management is relevant across various industries, including IT, engineering, and civil works/construction. When the cumulative percentage reaches 100%, all replies have been correctly accounted for. This data demonstrates the universal agreement that project management crosses industry borders, showing the understanding that efficient project management approaches are crucial for optimizing processes, attaining goals, and guaranteeing successful outcomes across all industries. Most

respondents agree that project management applies in all industries, but the nuanced comments highlight particular professions with essential concepts. This information provides insightful information about project management's universality, assisting in comprehending its relevance across disciplines and its function in promoting effectiveness and success in many sectors.

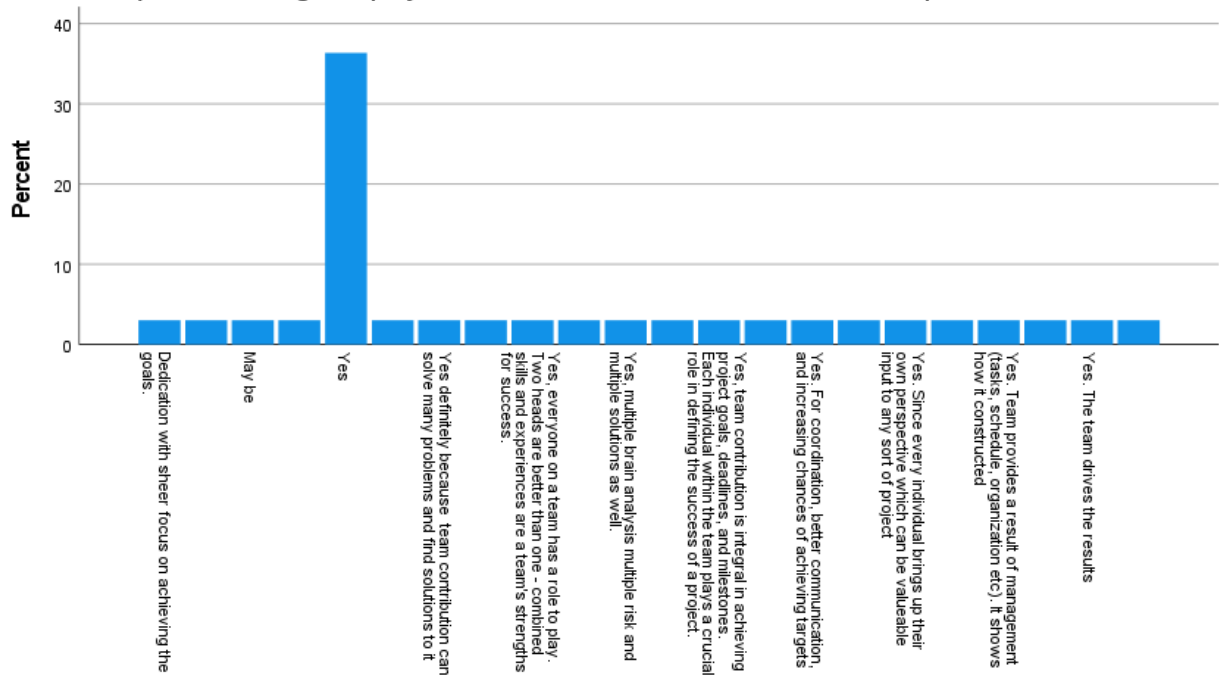
6) While working on a project, is the TEAM contribution a must and an essential factor?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Dedication with sheer focus on achieving the goals.	1	3.0	3.0	3.0
	Excellent project management teamwork achieves three essential goals: Projects are completed on time and in full. Individual team members feel more satisfied with their roles, giving them extra motivation to perform.	1	3.0	3.0	6.1
	May be	1	3.0	3.0	9.1
	Yea	1	3.0	3.0	12.1
	Yes	12	36.4	36.4	48.5
	Yes, project completion becomes easy with a team because work is divided, and everyone focuses on their work.	1	3.0	3.0	51.5
	Yes, because team contribution can solve many problems and find solutions to it	1	3.0	3.0	54.5

Yes, because if all the members of a team don't contribute or cooperate, it will be a problem for the project	1	3.0	3.0	57.6
Yes, everyone on a team has a role to play. Two heads are better than one - combined skills and experiences are a team's strengths for success.	1	3.0	3.0	60.6
Yes, it is important	1	3.0	3.0	63.6
Yes, multiple brain analyses, multiple risks and multiple solutions as well.	1	3.0	3.0	66.7
YES, Team contribution is essential at every level of work to execute an efficient project.	1	3.0	3.0	69.7
Team contribution is integral to achieving project goals, deadlines, and milestones. Each individual within the team plays a crucial role in defining the success of a project.	1	3.0	3.0	72.7
Yes, every person contributes their knowledge	1	3.0	3.0	75.8
Yes. For coordination, better communication, and increasing chances of achieving targets	1	3.0	3.0	78.8
Yes. For knowledge transfer	1	3.0	3.0	81.8
Yes. Since every individual brings up their perspective, which can be valuable input to any sort of project	1	3.0	3.0	84.8

YES. Team contribution is not only a must but also a crucial factor in the success of any project. Here's why: Diverse Skillsets, collaboration, workload distribution, innovation and creativity, accountability	1	3.0	3.0	87.9
Yes. The team provides a result of management (tasks, schedule, organization etc.). It shows how it constructed	1	3.0	3.0	90.9
Yes. Teamwork is always essential to achieve things on a broader prospect	1	3.0	3.0	93.9
Yes. The team drives the results	1	3.0	3.0	97.0
Yes..because your Team project is getting delivered.	1	3.0	3.0	100.0
Total	33	100.0	100.0	

6) While working on a project is the TEAM contribution a must and an important factor?



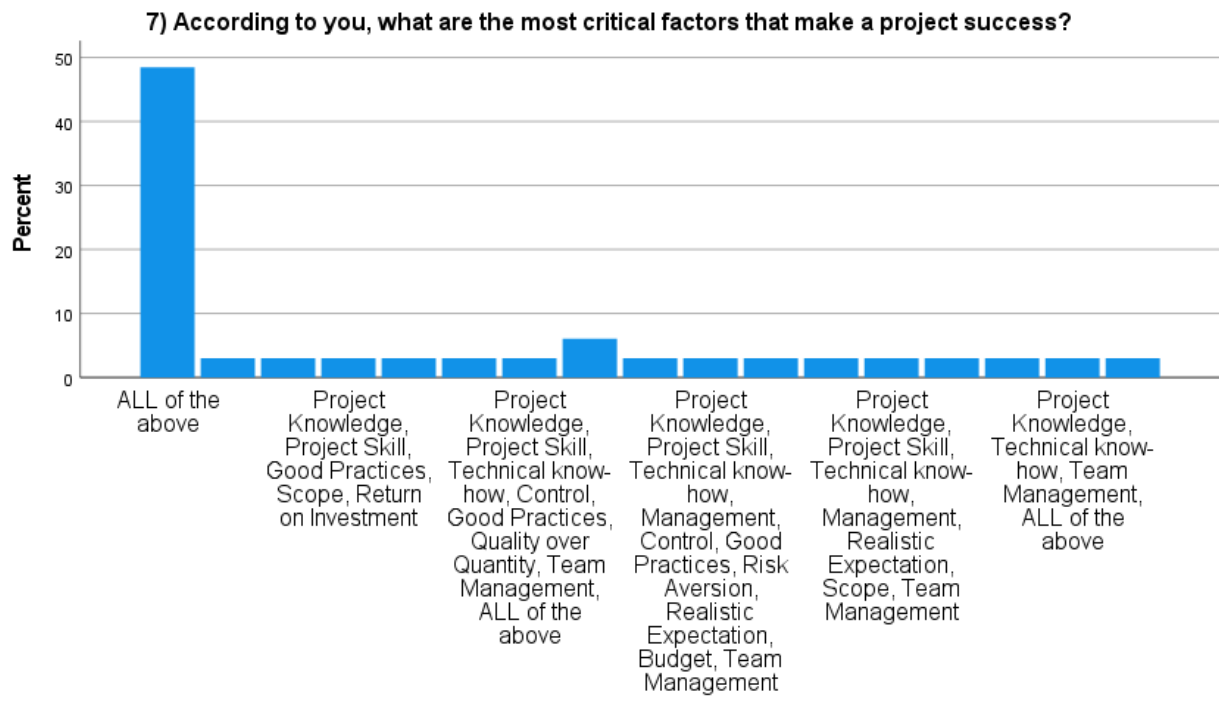
Interpretation: The answers revealed more about the perceived value of group effort in project management. 36.4% of respondents, by far the majority, agree that teamwork is a vital and essential component of project success. The replies often emphasise the numerous benefits of cooperation, including effective task allocation, diversity of skill sets, improved problem-solving, innovation, and overall project efficiency. Collectively, these thoughts support the idea that effective teamwork significantly impacts project outcomes. The cumulative total of 100% verifies the comprehensive coverage of comments, while a small percentage of responses represent more unclear viewpoints or phrasing variants. In summary, the replies support the idea that solid cooperation is essential to project management as well as desired. To achieve project goals, maintain responsibility, and ensure successful project completion, a team's combined efforts, different viewpoints, and collective expertise are crucial.

7) According to you, what are the most critical factors that make a project successful?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	All of the above	16	48.5	48.5	48.5
	Management, Good Practices	1	3.0	3.0	51.5
	Project Knowledge, Management, Control, Quality over Quantity, Team Management	1	3.0	3.0	54.5

Project Knowledge, Project Skill, Good Practices, Scope, Return on Investment	1	3.0	3.0	57.6
Project Knowledge, Project Skill, Management, Control	1	3.0	3.0	60.6
Project Knowledge, Project Skill, Management, Control, Good Practices, Quality over Quantity, Risk Aversion, Scope	1	3.0	3.0	63.6
Project Knowledge, Project Skill, Technical know-how, Control, Good Practices, Quality over Quantity, Team Management, ALL of the above	1	3.0	3.0	66.7
Project Knowledge, Project Skill, Technical know-how, Management, Control, Good Practices, Quality over Quantity, Risk Aversion, Realistic Expectation, Scope, Return on Investment, Budget, Team Management, ALL of the above	2	6.1	6.1	72.7
Project Knowledge, Project Skill, Technical know-how, Management, Control, Good Practices, Quality over Quantity, Risk Aversion, Scope, Team Management	1	3.0	3.0	75.8
Project Knowledge, Project Skill, Technical know-how, Management, Control, Good Practices, Risk Aversion, Realistic Expectation, Budget, Team Management	1	3.0	3.0	78.8

Project Knowledge, Project Skill, Technical know-how, Management, Control, Good Practices, Risk Aversion, Realistic Expectation, Scope, Budget	1	3.0	3.0	81.8
Project Knowledge, Project Skill, Technical know-how, Management, Good Practices, Quality over Quantity, Scope, Return on Investment, Budget	1	3.0	3.0	84.8
Project Knowledge, Project Skill, Technical know-how, Management, Realistic Expectation, Scope, Team Management	1	3.0	3.0	87.9
Project Knowledge, Technical know-how, Management, Good Practices, Realistic Expectation, Scope, Return on Investment, Budget, Team Management	1	3.0	3.0	90.9
Project Knowledge, Technical know-how, Management, Quality over Quantity, Realistic Expectation, Return on Investment, Team Management	1	3.0	3.0	93.9
Project Knowledge, Technical know-how, Team Management, ALL of the above	1	3.0	3.0	97.0
Technical know-how	1	3.0	3.0	100.0
Total	33	100.0	100.0	



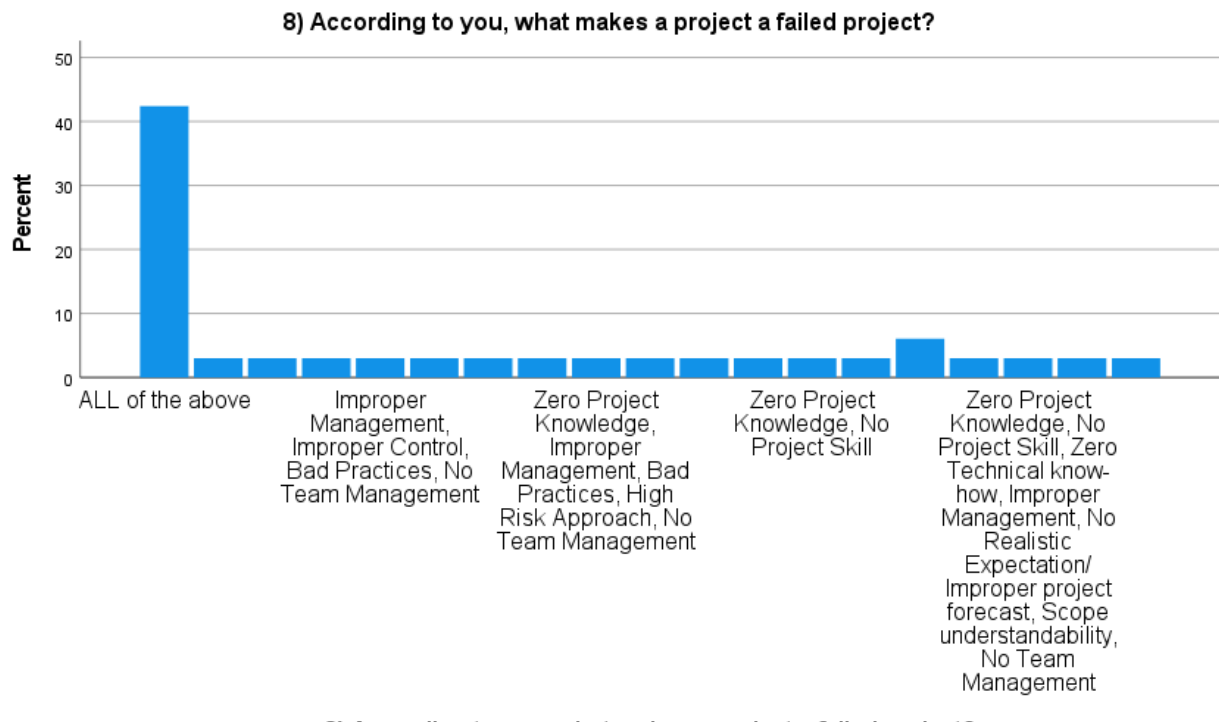
Interpretation: The responses provided illuminate the multifaceted factors that respondents believe contribute to the success of a project. A substantial 48.5% of participants advocate considering "ALL of the above" factors as critical to project success, demonstrating a comprehensive view. Notably, many responses emphasize the synergy of various components. These include project knowledge, technical expertise, management, control, good practices, quality prioritization, risk aversion, scope definition, realistic expectations, return on investment, budget adherence, and effective team management. The cumulative total of 100% affirms the thoroughness of the responses captured. Collectively, the responses underline the intricate interplay of diverse elements that collectively influence project outcomes. These insights highlight that successful projects require a harmonious blend of elements, from specialized knowledge to effective management practices and realistic goal-setting. This data illustrates the intricate web of considerations required for project success, encompassing technical know-how, strategic planning, resource management, and adherence to best practices, all of which must be thoughtfully integrated to ensure optimal project outcomes.

8) According to you, what makes a project a failed project?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	All of the above	14	42.4	42.4	42.4
	Bad Practices, Zero Return on Investment, Exceeds Budget	1	3.0	3.0	45.5
	Exceeds Budget, ALL of the above	1	3.0	3.0	48.5
	Improper Management, Improper Control, Bad Practices, No Realistic Expectation/ Improper project forecast, Scope understandability, Exceeds Budget, No Team Management	1	3.0	3.0	51.5
	Improper Management, Improper Control, Bad Practices, No Team Management	1	3.0	3.0	54.5
	No Project Skill, Improper Management, High-Risk Approach, No Realistic Expectation/ Improper project forecast, Exceeds Budget, No Team Management	1	3.0	3.0	57.6
	No Team Management	1	3.0	3.0	60.6
	Zero Project Knowledge, Improper Management, Bad Practices, Exceeds Budget, No Team Management	1	3.0	3.0	63.6

Zero Project Knowledge, Improper Management, Bad Practices, High-Risk Approach, No Team Management	1	3.0	3.0	66.7
Zero Project Knowledge, Improper Management, Bad Practices, Quantity over Quality, No Realistic Expectation/ Improper project forecast, No Team Management	1	3.0	3.0	69.7
Zero Project Knowledge, Improper Management, No Realistic Expectation/ Improper project forecast, Zero Return on Investment	1	3.0	3.0	72.7
Zero Project Knowledge, Improper Management, No Team Management	1	3.0	3.0	75.8
Zero Project Knowledge, No Project Skill	1	3.0	3.0	78.8
Zero Project Knowledge, No Project Skill, ALL of the above	1	3.0	3.0	81.8
Zero Project Knowledge, No Project Skill, Zero Technical know-how, Improper Management, Improper Control, Bad Practices, Quantity over Quality, High-Risk Approach, No Realistic Expectation/ Improper project forecast, Scope understandability, Zero Return on Investment, Exceeds Budget, No Team Management, ALL of the above	2	6.1	6.1	87.9

Zero Project Knowledge, No Project Skill, Zero Technical know-how, Improper Management, Improper Control, High-Risk Approach, No Realistic Expectation/ Improper project forecast, No Team Management	1	3.0	3.0	90.9
Zero Project Knowledge, No Project Skill, Zero Technical know-how, Improper Management, No Realistic Expectation/ Improper project forecast, Scope understandability, No Team Management	1	3.0	3.0	93.9
Zero Project Knowledge, Zero Technical know-how, Improper Management, Improper Control, Bad Practices, High-Risk Approach, No Realistic Expectation/ Improper project forecast, Scope understandability, Exceeds Budget, No Team Management	1	3.0	3.0	97.0
Zero Technical know-how, Improper Management, Bad Practices, High-Risk Approach, Scope understandability, Zero Return on Investment	1	3.0	3.0	100.0
Total	33	100.0	100.0	

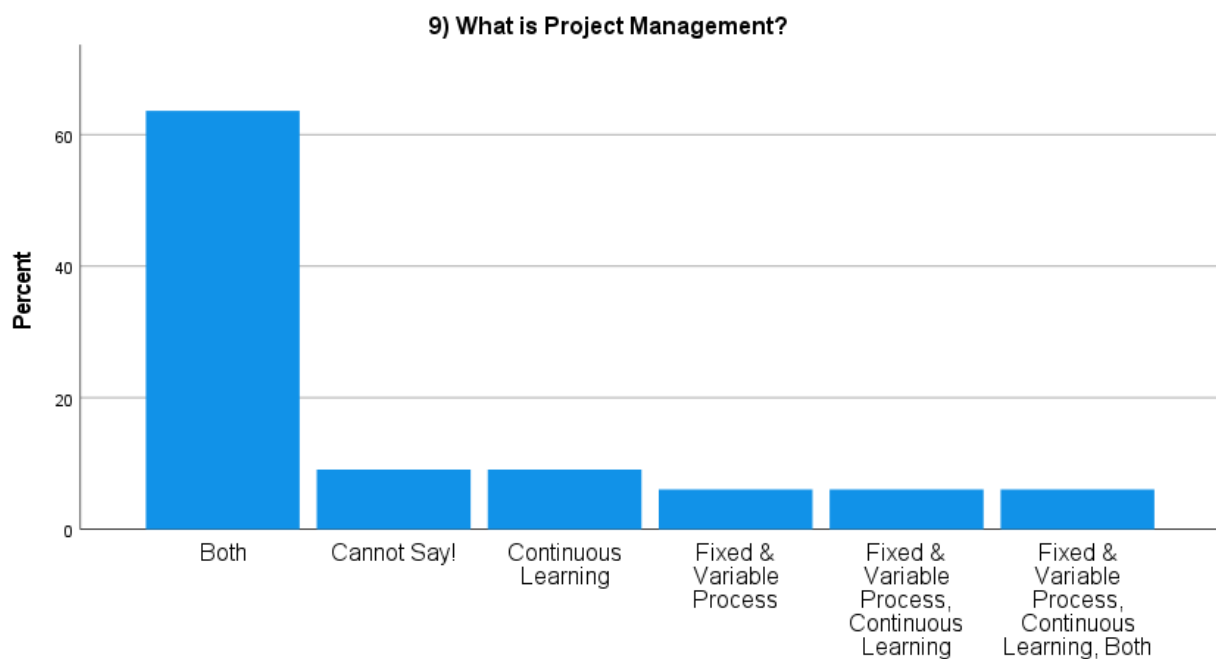


Interpretation: The responses gathered provide valuable insights into the perceived factors contributing to a project's failure. A substantial 42.4% of respondents assert that "ALL of the above" factors collectively contribute to project failure, reflecting a comprehensive understanding of the intricacies involved. Diverse viewpoints emerge, highlighting key determinants such as improper management, bad practices, exceeding budget limits, unrealistic expectations, inadequate team management, and lack of project knowledge and skills. Many responses delve into specific combinations of these factors, illustrating the multifaceted nature of project failure. These combinations encompass elements like improper control, high-risk approaches, inadequate scope understandability, and zero return on investment. Collectively, these responses underscore the importance of strategic planning, effective management, and skilful execution in project success. The cumulative percentage of 100% ensures that all responses are comprehensively represented. This data collectively reveals that a failed project often results from an amalgamation of multiple interrelated factors. The responses highlight the need for effective management, a comprehensive

understanding of project scope, realistic expectations, skilled personnel, efficient control, and prudent budget allocation to avert project failures. These insights underscore the complex interplay of variables that must be managed to ensure the successful execution of projects.

9) What is Project Management?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Both	21	63.6	63.6	63.6
	I cannot Say!	3	9.1	9.1	72.7
	Continuous Learning	3	9.1	9.1	81.8
	Fixed & Variable Process	2	6.1	6.1	87.9
	Fixed & Variable Process, Continuous Learning	2	6.1	6.1	93.9
	Fixed & Variable Process, Continuous Learning, Both	2	6.1	6.1	100.0
	Total	33	100.0	100.0	



9) What is Project Management?

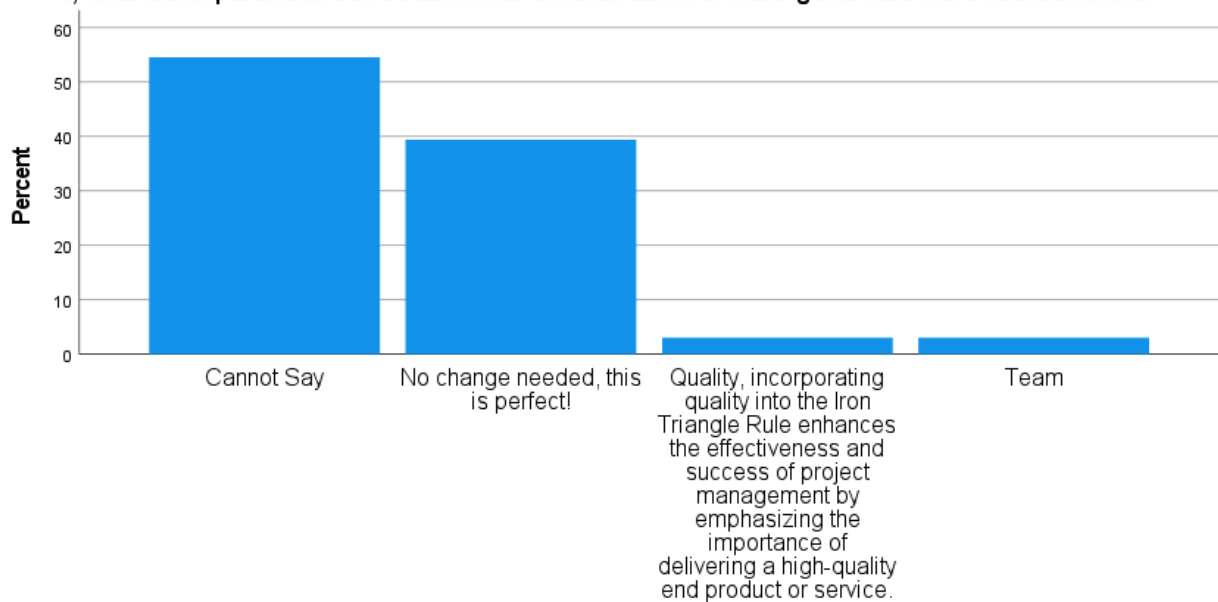
Interpretation: The responses provided offer varied perspectives on the definition of project management. The majority of participants, constituting 63.6%, perceive project management as encompassing both aspects of fixed processes and continuous learning. This perspective recognises that project management involves established methodologies while necessitating ongoing adaptation and learning to navigate changing circumstances. A smaller yet notable subset of respondents, at 9.1%, admit uncertainty by responding with "Cannot Say!" This response could indicate a lack of clarity or familiarity with the project management concept, possibly reflecting the need for further information or understanding. An additional 9.1% emphasize continuous learning as a central element of project management. This insight underscores the significance of evolving skills and practices to manage projects in dynamic environments effectively. The notion of project management as a combination of fixed and variable processes is evident in responses from 6.1% of participants. This perspective suggests that while specific structured processes are essential, adaptability and flexibility are equally important in project management.

Interestingly, a few responses, accounting for 6.1%, synthesize these facets of fixed processes, continuous learning, and adaptability by asserting that project management encompasses all of these aspects. With a cumulative percentage of 100%, the responses collectively underscore the multifaceted nature of project management. They demonstrate that project management involves established processes and an ongoing commitment to learning and adaptation. The responses also reflect the varying degrees of understanding and awareness of project management, highlighting the need for clear communication and education about the concept's comprehensive scope.

10) Project Management comprises an Iron Triangle Rule, 'Cost, Scope & Time'. Apart from these 3, what factor/parameter can be considered for making this Rule more fluent/efficient?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Cannot Say	18	54.5	54.5	54.5
	No change is needed; this is perfect!	13	39.4	39.4	93.9
	Quality Incorporating quality into the Iron Triangle Rule enhances the effectiveness and success of project management by emphasizing the importance of delivering a high-quality end product or service.	1	3.0	3.0	97.0
	Team	1	3.0	3.0	100.0
	Total	33	100.0	100.0	

10) Project Management consists of an Iron Triangle Rule which is 'Cost, Scope & Time'. Apart from these 3, what factor/parameter can be taken into consideration for making this Rule more fluent/efficient?



10) Project Management consists of an Iron Triangle Rule which is 'Cost, Scope & Time'. Apa...

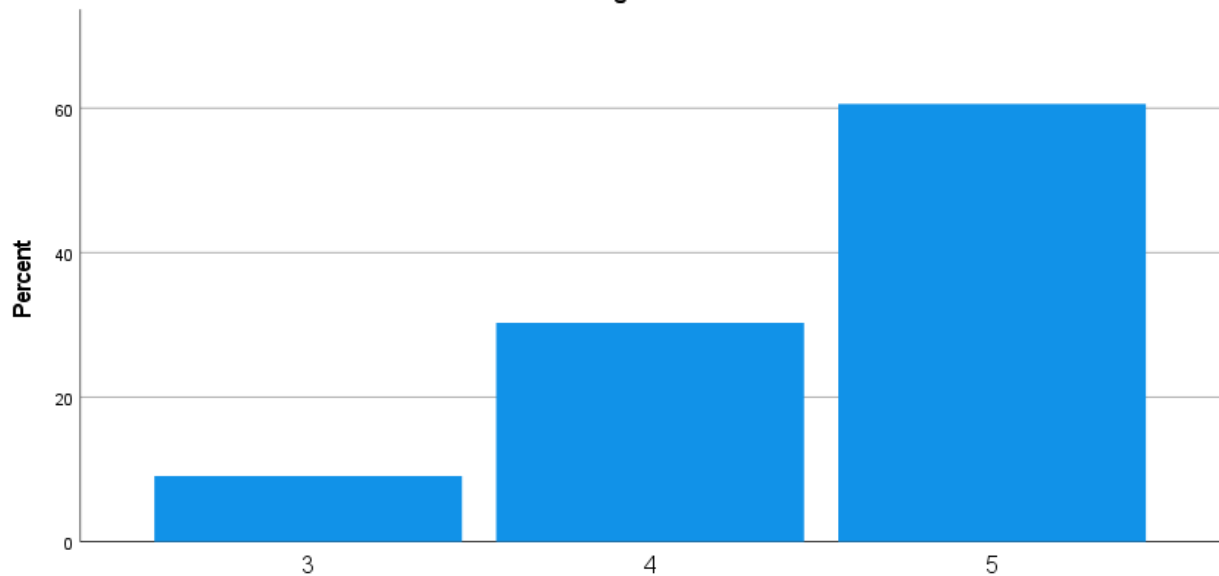
Interpretation: The responses provided shed light on the potential enhancement of the Iron Triangle Rule in project management, which typically comprises the factors of 'Cost, Scope, and Time'. Most participants, accounting for 54.5%, respond with "Cannot Say", indicating a lack of clear insight or familiarity with additional parameters to improve this rule. This response may highlight a potential gap in awareness or understanding of supplementary factors that could contribute to the efficiency of project management. Conversely, 39.4% of respondents assert that no change in the existing Iron Triangle Rule is needed, considering it a perfect framework. This viewpoint could reflect a strong belief in the effectiveness of the current parameters and a preference for maintaining the status quo. A noteworthy perspective emerges from a single response (3.0%), suggesting the inclusion of "Quality" as an additional factor within the Iron Triangle Rule. This viewpoint asserts that incorporating quality into the rule enhances project management efficacy by emphasizing the significance of delivering a high-quality end product or service. Another response (3.0%) points to the importance of the "Team" as a potential parameter to be considered. The cumulative total of 100% confirms the comprehensive coverage of responses. While some participants are uncertain about additional parameters, the responses underscore the varying perspectives on optimizing the Iron Triangle Rule. Including "Quality" as an enhancement could bolster project outcomes, underscoring the value of delivering not only within cost, scope, and time but also with high-quality results. The responses reflect the diverse viewpoints on refining the Iron Triangle Rule and provide insights into potential avenues for further optimizing project management practices.

11) With the rise in Project Managers in many fields of work, how important is the role of a Project Manager?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	3	3	9.1	9.1	9.1
	4	10	30.3	30.3	39.4

5	20	60.6	60.6	100.0
Total	33	100.0	100.0	

11) With the rise in Project Managers in many fields of work, how important do you think is the role of a Project Manager?



11) With the rise in Project Managers in many fields of work, how important do you think is the role of a Project Manager?

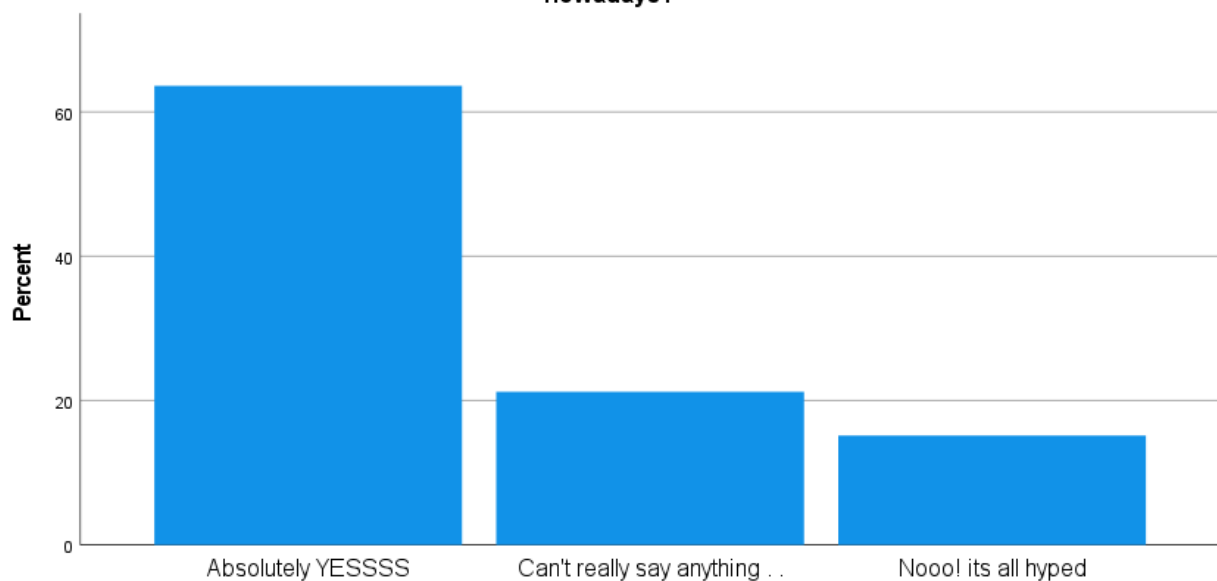
Interpretation: The data presented reflects respondents' perspectives on the significance of the role of a Project Manager with the increasing prevalence of these professionals across various fields of work. A noteworthy 60.6% of participants assigned the highest level of importance, rating it as a "5" on a scale from 1 to 5. This response pattern indicates a widespread recognition of the pivotal role that Project Managers play in modern work environments. An additional 30.3% of respondents rate the importance as a "4," underlining a substantial acknowledgment of the role's value. This data collectively showcases a predominant belief in the significance of Project Managers as essential contributors to successful project execution. While a smaller proportion of participants (9.1%) rate the importance as a "3," the cumulative total of 100% ensures the comprehensive representation of responses. The data underscores the prevailing sentiment that the role of a Project Manager is highly relevant and influential in diverse fields. This recognition of the role's

significance suggests that Project Managers are vital for overseeing projects, managing resources, mitigating risks, ensuring effective communication, and driving project success.

12) Should Project Management be done with the help of software or tools available in the market nowadays?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Absolutely YES	21	63.6	63.6	63.6
	I can't say anything.	7	21.2	21.2	84.8
	No! it's all excited	5	15.2	15.2	100.0
	Total	33	100.0	100.0	

12) Should Project Management be done with the help of software or tools that are available in the market nowadays?



12) Should Project Management be done with the help of software or tools that are available in the market nowadays?

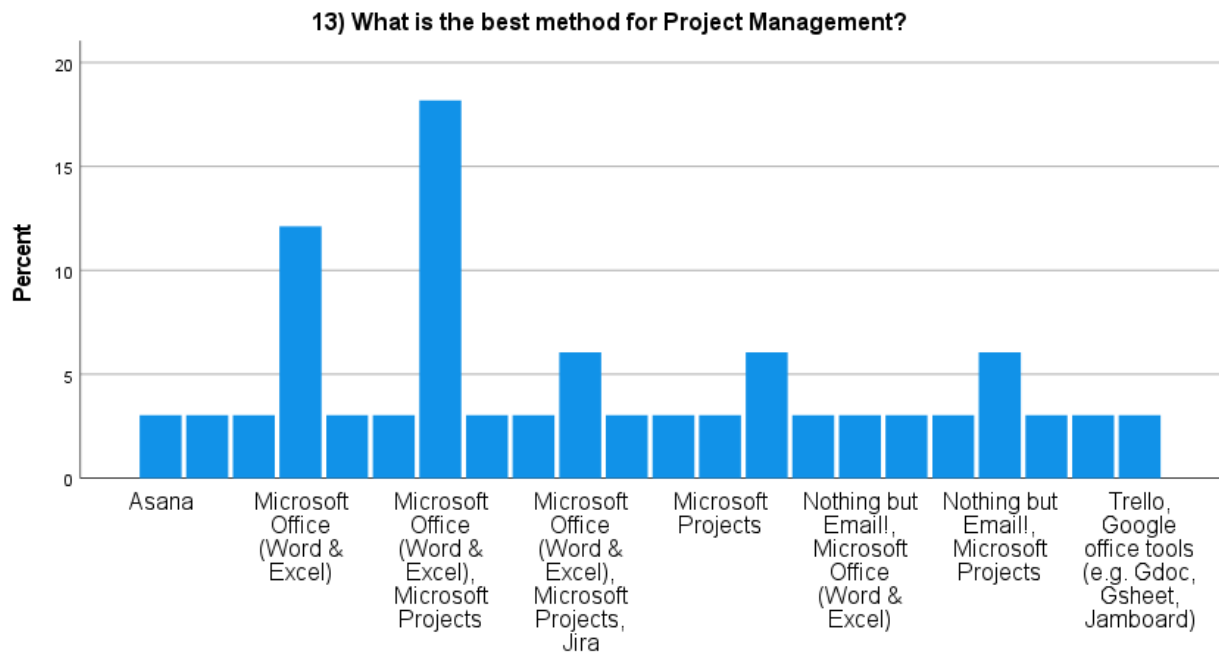
Interpretation: The responses offer various opinions regarding utilising software or tools in Project Management. Most participants (63.6%) enthusiastically advocate for incorporating software or tools, affirming their value and benefits. Conversely, a notable portion of respondents (21.2%) express uncertainty or ambivalence about the role of software and tools in Project Management. This group "can't say anything," which denotes ambiguity or a range of experiences that colour their perspective. On the other hand, a smaller portion of participants (15.2%) expressed doubt and criticize the idea as "all hyped." Even if it is a minority opinion, it shows several ways of thinking about how helpful software and tools are in project management. The 100% cumulative total guarantees an accurate depiction of all replies. The range of viewpoints demonstrates how the use of technology in project management is changing. A large majority's enthusiastic support demonstrates the rising understanding of how software and tools may improve project execution efficiency, cooperation, and organization. The more circumspect comments emphasize the need to evaluate tools critically and contextually, understanding that their performance depends on alignment with project requirements and team dynamics. These many points of view highlight the continuous discussion and research around incorporating technology in contemporary project management techniques.

13) What is the best method for Project Management?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Asana	1	3.0	3.0	3.0
	Idk	1	3.0	3.0	6.1
	Jira, Trello	1	3.0	3.0	9.1
	Microsoft Office (Word & Excel)	4	12.1	12.1	21.2

Microsoft Office (Word & Excel), Biweekly check-ins or one-on-one meetings to discuss challenges and celebrate small wins to motivate the team.	1	3.0	3.0	24.2
Microsoft Office (Word & Excel), Jira, Asana, Trello	1	3.0	3.0	27.3
Microsoft Office (Word & Excel), Microsoft Projects	6	18.2	18.2	45.5
Microsoft Office (Word & Excel), Microsoft Projects, Asana, Trello	1	3.0	3.0	48.5
Microsoft Office (Word & Excel), Microsoft Projects, Basecamp	1	3.0	3.0	51.5
Microsoft Office (Word & Excel), Microsoft Projects, Jira	2	6.1	6.1	57.6
Microsoft Office (Word & Excel), Microsoft Projects, Jira, Asana, Basecamp, Trello	1	3.0	3.0	60.6
Microsoft Office (Word & Excel), Microsoft Projects, Relentless efforts	1	3.0	3.0	63.6
Microsoft Projects	1	3.0	3.0	66.7
Microsoft Projects, Jira	2	6.1	6.1	72.7
Nothing but Email!	1	3.0	3.0	75.8
Nothing but Email!, Microsoft Office (Word & Excel)	1	3.0	3.0	78.8
Nothing but Email!, Microsoft Office (Word & Excel), Jira	1	3.0	3.0	81.8

Nothing but Email!, Microsoft Office (Word & Excel), Microsoft Projects	1	3.0	3.0	84.8
Nothing but Email!, Microsoft Projects	2	6.1	6.1	90.9
Six Sigma, lean project management, CPM, kanban	1	3.0	3.0	93.9
The best method for project management ultimately depends on the project's specific requirements, team size, collaboration needs, and personal preferences of the users involved. Trying out different tools and assessing which aligns best with your project management needs is often helpful.	1	3.0	3.0	97.0
Trello, Google Office tools (e.g. Gdoc, Gsheet, Jamboard)	1	3.0	3.0	100.0
Total	33	100.0	100.0	

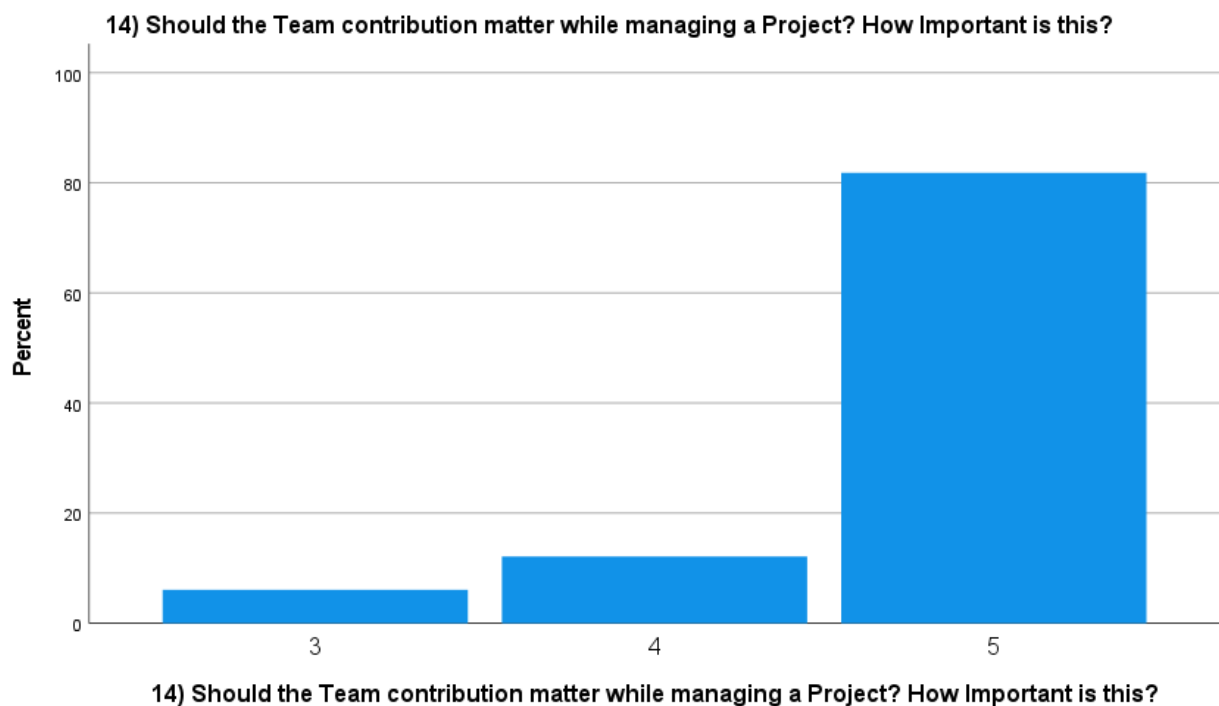


13) What is the best method for Project Management?

Interpretation: The responses provided reflect diverse perspectives on the best method for project management. The data showcases a wide array of tools and approaches that individuals consider effective for overseeing projects. Notably, Microsoft Office tools, including Word and Excel, emerge as prevalent choices, with 12.1% of participants favouring them. Microsoft Projects, Jira, Trello, Asana, Basecamp, and other tools such as Six Sigma and Lean Project Management are also mentioned as potential methods. Interestingly, a small portion of participants (9.1%) acknowledge the dynamic nature of project management by highlighting that the most suitable method depends on various factors. This response underscores the importance of tailoring project management approaches to the project's specific needs, team size, collaboration requirements, and individual preferences. The cumulative total of 100% ensures the comprehensive representation of responses. The data reflects the wide-ranging choices and opinions on project management methods, from specialized tools to more flexible approaches considering individual project characteristics. Ultimately, the responses emphasize the importance of adapting methods to the unique demands of each project, recognizing that no single method universally suits all scenarios. This data offers insights into how professionals approach project management, underscoring the need for flexibility and strategic selection of tools based on project-specific needs.

14) Should the Team contribution matter while managing a Project? How Important is this?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	3	2	6.1	6.1	6.1
	4	4	12.1	12.1	18.2
	5	27	81.8	81.8	100.0
Total		33	100.0	100.0	



Interpretation: The responses offered insights into the perceived importance of team contribution in project management. An overwhelming majority of participants (81.8%) assign the highest significance level, rating it as a "5" on a scale from 1 to 5. This substantial percentage underscores the widely held belief in the pivotal role of team contribution in successful project management. An additional 12.1% of respondents rate the importance as

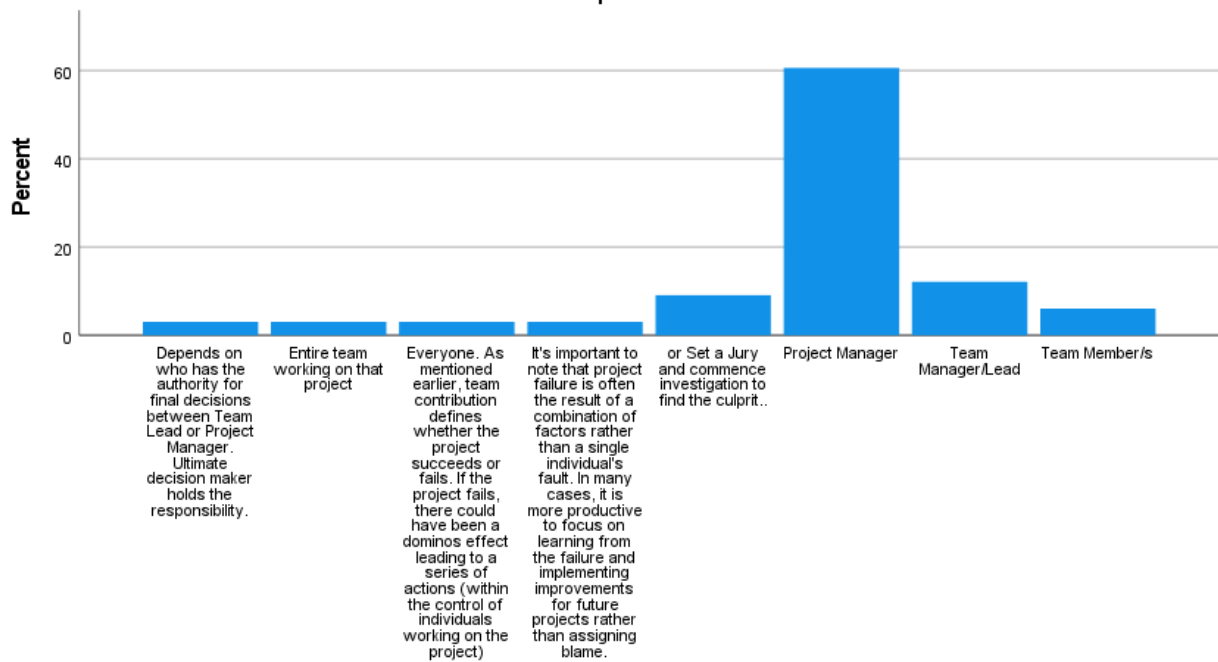
a "4," further reinforcing that team participation holds substantial value in project execution and outcome. A smaller portion of participants (6.1%) rate the importance as a "3." However, the cumulative total of 100% ensures the comprehensive representation of responses. The data collectively emphasizes the crucial role of team contribution in effective project management. The high proportion of respondents with the highest rating demonstrates a prevailing recognition that collaboration, coordination, and diverse team expertise significantly influence project outcomes. This data reflects the widely accepted perspective that team engagement and concerted efforts are central to realizing project goals, ensuring efficient resource allocation, mitigating risks, and achieving project success.

15) Hypothetically speaking, considering a project fails for specific reasons, who should be held responsible, according to you?

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	It depends on who has the authority for final decisions between Team Lead and Project Manager. The ultimate decision-maker holds the responsibility.	1	3.0	3.0	3.0
	The entire team working on that project	1	3.0	3.0	6.1

Everyone. As mentioned earlier, team contribution defines whether the project succeeds or fails. If the project fails, there could be a domino effect leading to a series of actions (within the control of individuals working on the project) contributing to the failure of a project. If the project fails due to external factors that aren't in the control of the individuals, then no one should be held responsible.	1	3.0	3.0	9.1
It's important to note that project failure often results from a combination of factors rather than a single individual's fault. In many cases, focusing on learning from failure and implementing improvements for future projects is more productive than assigning blame.	1	3.0	3.0	12.1
Or Set a Jury and commence an investigation to find the culprit.	3	9.1	9.1	21.2
Project Manager	20	60.6	60.6	81.8
Team Manager/Lead	4	12.1	12.1	93.9
Team Member/s	2	6.1	6.1	100.0
Total	33	100.0	100.0	

15) Hypothetically speaking, consider a project fails due to certain reasons, who according to you should be held responsible?



Interpretation: The responses offered diverse viewpoints on assigning responsibility in the event of a project failure. The data illustrates a multifaceted understanding of the complexity involved and the range of factors that contribute to project outcomes. A few replies (6.1%) stress the larger context, underscoring that project failure frequently results from a mix of causes and that blaming a single person may not be beneficial. They advise emphasizing strengthening procedures for subsequent initiatives and learning from failures. A surprising answer (3.0%) suggests using a jury and an investigation procedure to determine who is to blame, highlighting the need for a more formal strategy to deal with failure. Project managers should be held accountable for project failure, according to the most popular option selected by 60.6% of respondents. By emphasizing the essential role that project managers play in supervising and directing project operations, this viewpoint holds them responsible for the entire project results. The Team Manager or Lead is called the accountable person by a lesser percentage (12.1%), while another fraction (6.1%) suggests that accountability may fall on specific team members. The cumulative total of 100% ensures the comprehensive representation of responses. The data collectively reveals the complex nature of assigning

responsibility for project failure. While some responses emphasize collective responsibility and learning, most participants perceive the Project Manager as the focal point for accountability. This diversity of perspectives reflects the intricate dynamics of project management, where numerous factors contribute to outcomes, making effective leadership and coordination pivotal for project success.

RESULTS

Introduction

The data that have been gathered have been thoroughly analyzed in this chapter, which also reveals the results of the survey that was carried out to investigate the elements that contribute to successful project management. Utilizing statistical methods and tools, the data has undergone a thorough analysis revealing new information about the studied critical factors. The chapter addresses the study objectives and offers light on the elements that contribute to project success through this analysis. The information provided here helps to give a good knowledge of the essential factors that affect effective project outcomes.

Survey Findings

Project management is essential to modern organizational strategy because it ensures the efficient execution and successful completion of projects across various sectors. The survey results are examined in more detail in the analysis that follows. These findings include participants' views on the significance of project management, the function of team contributions, the elements contributing to project success and failure, the use of software tools, and the applicability of project management methodologies across various industries.

The survey's results highlight the importance of using project management techniques in various industries. Notably, a sizable majority of respondents—36.4%—expressed their firm conviction in the necessity of project management across various professional fields. This idea is consistent with the notion that project management can lead to real gains and advancements in different organizational settings. Participants in the study provided a wide range of justifications for why they think project management is essential. A reoccurring topic was the significant increase in operational efficiency in which good project management results. The fact that organized project management approaches encourage better resource allocation, simplify procedures, and maximize job execution was acknowledged by many respondents. Increased organizational effectiveness results from this rise in productivity, which helps projects be completed on schedule and within budget. The survey respondents also emphasized project management's critical role in overcoming resource management difficulties. Project management assists in maximizing resource efficiency and avoiding

avoidable resource bottlenecks by offering a systematic approach to resource allocation. This thoughtful distribution of resources reduces waste and advances the organization's broad objectives for resource efficiency. Participants also highlighted project management's role as a catalyst for holistic growth. They pointed out that firms may methodically plan, carry out, and monitor projects by following project management principles, resulting in all-around growth and advancement. This viewpoint is consistent with the notion that project management provides a systematic framework for ongoing innovation and development and ensures that initiatives contribute to the organization's long-term progress. The comprehensive agreement among responders shows a common understanding of how project management promotes effectiveness, maximizes resource usage, and propels overall organizational development. This acknowledgement of the utility of project management in contemporary workplaces, where successful project execution is inextricably tied to success and ongoing growth, is a testament to its usefulness.

The survey's results revealed a widespread understanding among participants, with a whopping 81.8% of them agreeing that team contributions to project management are of the utmost importance. The importance of collaborative cooperation in determining the course and results of projects across a variety of areas is highlighted by this remark. Participants in the survey underlined the diversity of team contributions and how they contribute to the accomplishment of project initiatives. The appreciation of the different skill sets and experiences that team members bring to the table recurred as a common topic. Most respondents agreed that each team member's specialization enhances the team's ability to solve problems and make decisions holistically. This diversity adds depth to project talks and increases the possibility of creating creative answers to complex problems. The study's results also demonstrated teamwork is essential to achieving effective project outcomes. Numerous respondents emphasized that successful cooperation facilitates efficient communication, allowing team members to exchange knowledge, resolve problems, and coordinate activities in the direction of shared objectives. This collaborative setting facilitates cross-functional learning, promotes the sharing of ideas, and eventually results in informed decision-making. According to survey data, a project team's total strength is significantly boosted by the synergy that occurs from combining individual experiences. Most respondents agreed that a team's ability to handle a variety of project-related issues in-depth is improved by blending different

viewpoints and backgrounds within the group. With a collaborative approach, there is less chance of supervision and more chance of spotting possibilities and hazards that could otherwise go unreported. The poll respondents' overall sentiment proves that the whole is larger than the sum of its parts. The team members' expertise, abilities, and insights provide a dynamic, flexible project environment that can successfully traverse obstacles and capture opportunities. This idea emphasizes how significant team contributions are to project success and to develop a feeling of shared ownership and accountability among team members. The overwhelming consensus among responders emphasizes the significance of cooperative cooperation, various skill sets, and integrated experiences in delivering practical project outputs. This acknowledgement emphasizes the value of fostering a collaborative and cohesive team dynamic to guarantee that projects are carried out with accuracy, inventiveness, and a thorough awareness of the myriad problems they may confront.

The survey's findings shed light on the complex web of variables that either drive initiatives toward success or steer them in the wrong direction toward disaster. In addition to highlighting the complex nature of project failures, the respondents' viewpoints gave a thorough grasp of the delicate equilibrium necessary for project success. One major conclusion from the poll was the overwhelming agreement (63.6%) among respondents that the trinity of cost, scope, and time remained crucial to project success. This recalls the fundamentals of the old Iron Triangle Rule, where these three elements interact to specify the parameters in which a project flourishes. This conclusion underlines the importance of intelligent project constraint management to guarantee outputs correspond with business goals while abiding by financial and time restraints. The survey's results did, however, also shed light on how difficult it is to attribute project failures. While several respondents (60.6%) identified the project manager as the leading cause of failure, it was also widely acknowledged that complex interactions among many elements frequently result in project failure. This nuanced viewpoint understands that project failures are generally not the product of a single person's actions but rather a confluence of events, choices, and outside forces. Many responders highlighted the significance of using a comprehensive approach to failure analysis. They stressed the importance of failure as a learning opportunity rather than becoming fixated on laying blame. This perspective of view is consistent with modern methodologies that support accepting failure as a necessary step toward improvement. A culture of continuous

improvement must start with the understanding that failure may yield insightful information that can be used to better future endeavours. The survey results highlight the complexities of project success and failure, depicting them as complicated phenomena impacted by various circumstances. The widespread agreement on the importance of the Iron Triangle Rule for project success demonstrates the persistent value of fundamental project management principles. In addition, the many viewpoints on project failure attribution highlight how crucial it is to have a fair understanding that acknowledges the social aspect of both triumphs and failures. The results of this study not only add to our knowledge of project management and provide practitioners with helpful information for navigating the challenges of project execution. Project managers may take a more holistic approach to project management that promotes a culture of learning, adaptability, and continual improvement by realizing the delicate balance necessary for success and understanding the complex nature of failure.

The results of the poll shed light on the various opinions surrounding the use of software tools, which are increasingly entangled with the current project management environment. Digital tools in project management procedures received the unequivocal support of most participants (63.6%). Their fervent backing highlights technology's unquestionable benefits in boosting productivity, organization, and cooperation throughout the project lifecycle. Software tool proponents highlighted the observable advantages they provide to project management procedures in their responses. These technologies are viewed as initiators for optimizing workflows, automating tedious operations, and centralizing communication, lowering the possibility of mistakes and misunderstandings. The better project management, resource management, and task tracking associated with integrating software tools help further the project's execution.

The study also revealed a more nuanced viewpoint on using software tools in project management. The necessity for a more thorough investigation of software's effects was indicated by a subset of participants (21.2%) who expressed some level of doubt. This subcategory emphasized the significance of balancing technical involvement with the human aspect. They suggested that while technological technologies might increase productivity, human judgment and adaptation are essential elements of good project management. Their point of view emphasizes the necessity of strategically integrating technology, ensuring it augments rather than replaces project managers' and teams' innate abilities and knowledge.

In contrast, a lower percentage of participants (15.2%) expressed scepticism about the general enthusiasm around software tools in project management. Their doubt may be caused by worries about these instruments' potential complexity, compatibility with current procedures, or technological dependency. It is crucial to understand that while software tools have many advantages, they are not a universally applicable solution and should be applied carefully based on each project and the company's unique requirements and circumstances. The fact that the majority supports these technologies highlights their critical role in executing modern projects while enhancing efficiency and teamwork. The subgroup expressing uncertainty advocates a balanced integration that respects both technology and human expertise. The detractors serve as a reminder that the application of technology should be led by a thoughtful assessment of its applicability and advantages. The combined insights offer a comprehensive perspective that can guide practitioners' choices in using the potential of software tools in the field of project management successfully and harmoniously.

The survey results provide light on a topic worth considering: the applicability of project management approaches across various employment industries. The majority opinion shows that project management's effectiveness depends on the particular context and nature of the task at hand, even if a sizable percentage of participants (36.4%) feel it may benefit a variety of sectors. The participants' viewpoints emphasise that project management's applicability differs depending on the complexities and requirements of various areas. Their awareness of elements like resource optimization, risk management, stakeholder involvement, and job complexity reveals a sophisticated grasp of how project management approaches must align with each domain's particular characteristics. The sophistication of modern project management techniques, which take into account the complexity of projects and the wide variety of difficulties they present, is demonstrated by this nuanced viewpoint.

The recognition of context-dependent applicability shows a pragmatic and practical point of view. It denotes an awareness that applying a one-size-fits-all strategy would not help different sectors achieve their best results. Project management may add structure, organization, and efficiency to various initiatives. Still, it's crucial to adapt approaches to fit each industry's unique needs, limitations, and goals. Project management methods, techniques, and tactics may need to be modified as part of this customisation to handle the particular possibilities and difficulties present in sectors as diverse as engineering, IT,

healthcare, and finance. The fact that different situations may have other applicability highlights how project management is dynamic and ever-changing. Project management techniques must develop to remain relevant and successful as fields change and adapt to shifting environments. The subtleties contributing to project success in specific domains may be missed if project management approaches are rigidly applied to all sectors. Although a sizeable portion of participants think project management may be helpful in various fields, the consensus acknowledges that each field's unique characteristics will influence how effective project management is. This viewpoint underlines the significance of contextual adaptability for attaining the best results and demonstrates a mature awareness of the intricacies inherent in project management. The research supports a strategy that combines the concepts of project management's applicability across disciplines with the freedom to customize approaches to meet particular needs in each subject.

Examining survey results highlights the complexity of project management and the variety of viewpoints people hold. While most of them strongly emphasise collaboration and the use of technology, it is understood that a number of contextual factors affect project management performance. The study's findings also underline the significance of learning from failures and embracing a broader understanding of accountability and success. Ultimately, this study provides illuminating data on the many variables that influence project management in various firms. Project management strategies may be made more effective and adaptable when the project management environment develops by comprehending and using these diverse points of view.

DISCUSSION

Investors can learn much from the survey findings about how project management is viewed across various industries. The vast majority of those questioned, who expressed opinions, agreed that project management was crucial for the effective operations of the organization. This point of view is consistent with the literature now in circulation, which highlights the essential part that project management plays in realizing strategic objectives, making the most of available resources, and guaranteeing effective project delivery.

Underscoring the changing dynamics of contemporary work settings is the acknowledgement of team contributions as a foundational element of successful project management. The current trend supports the respondents' common themes and emphasis on teamwork as a critical factor in project success. Effective collaboration is no longer just a catchphrase; it is now crucial to promoting creativity, delegating tasks, and using the various abilities of team members. Teamwork is consistently emphasized, aligning with well-established organizational behaviour and management theories. The emotion expressed by respondents, which highlights the inherent strength that results when people with different backgrounds, views, and talents come together to work toward a shared objective, is noteworthy since it aligns with theories of cooperation. The study praised this synergy as the key to enhanced project outcomes, greater creativity, and problem-solving skills. This idea has a solid connection to dynamic capacities inside organizations. To adapt to shifting circumstances, an organization must be able to integrate, develop, and reconfigure both internal and external competencies. The core of dynamic talents aligns with how respondents view the importance of teamwork. Teams may overcome obstacles, grasp opportunities, and make required adjustments to remain competitive in a business environment that is continually changing by combining a variety of talents and experiences.

Additionally, respondents' opinions show a transition from traditional hierarchical structures to more decentralized and collaborative work settings. The contribution of every team member is recognized and rewarded in contemporary work settings, encouraging a sense of ownership and accountability among team members. This change in corporate culture and team dynamics further highlights the need to build a collaborative atmosphere that allows people to thrive and contribute their particular abilities to project success.

Participants emphasized the importance of the "Iron Triangle Rule," which includes cost, scope, and time. The survey results offer insightful information about the elements influencing project success and failure. This discovery fits in perfectly with known project management frameworks that stress the significance of efficient resource allocation, clearly defined project boundaries, and adherence to planned timetables. According to the general agreement on this guideline, project managers and teams know the fine line that must be drawn to achieve project objectives while managing limits and expectations. The many viewpoints on who should bear the blame for project failure also provide a sophisticated knowledge of the intricate dynamics at work. This variety of views is consistent with the complex and diverse character of project failure described in previous studies. It emphasizes the reality that a combination of internal and external variables often work together to cause a project to fail and go beyond the control of any person or job. This is consistent with the well-documented understanding that a web of interrelated factors, such as stakeholder participation, outside market pressures, and unanticipated problems, impacts project results. The unity of survey results with prior research validates the findings and advances our knowledge of project management reality. The fact that the Iron Triangle Rule and the complexity of project failure were mentioned in the survey responses shows that practitioners know the foundational ideas and intricacies of project management. This information highlights the requirement for project managers and teams to navigate complex trade-offs and make wise decisions to achieve desired project outcomes.

The survey's results reveal a substantial majority (63.6%) favouring their incorporation, offering crucial new information on how software tools are used in project management. This resounding support for software tools serves as a reminder of the growing importance of automation and digitization in contemporary workplaces. The excitement of the survey respondents is consistent with the rising understanding that technology is a powerful tool for improving collaboration and project procedures. The findings of this poll are compatible with the body of research, which highlights how technology has completely changed project management. Academic debates frequently focus on how software technologies simplify project tracking, enable real-time collaboration, and promote effective resource allocation. The research also emphasizes how these technologies may improve project transparency, team cooperation, and decision-making via data-driven insights. The poll also showed that a

small portion of respondents (21.2%) were unsure about integrating software tools. This nuanced viewpoint is consistent with the literature's appeal to avoid unquestioningly adopting technology without considering how it will fit into the surrounding environment. Scholarly debates underline that although software tools have many advantages, their use should be based on rigorous analysis of the project's needs, team dynamics, and organizational objectives.

A lower percentage of respondents (15.2%) also expressed scepticism regarding the marketing hoopla around software applications. This doubt reflects the literature's worries about excessive dependence on technology at the expense of human skill and adaptive problem-solving. Although software tools can increase productivity, their effective deployment necessitates a balanced strategy that respects the human element and the nuances of decision-making brought to the table by talented project managers and teams. The poll results confirm the existing preference for using software tools in project management because of their ability to improve cooperation and streamline operations. These results support the literature's acknowledgement of the contribution of technology to effective project processes. However, the poll also emphasizes the significance of well-informed decision-making and the demand for a reasonable strategy. The nuanced comments underline the literature's emphasis on considering how well software tools fit into a given environment and avoiding blind adoption. Overall, the results of this study offer insightful information on the changing nature of project management, where technology is a valuable tool but not a cure-all and its effective integration should be driven by strategic considerations and a careful analysis of organizational requirements.

The survey results show that project management is essential, and they also confirm the literature's awareness of its contextual aspect. The fact that respondents acknowledged the necessity of adjusting project management strategies to meet specific sector requirements shows that they are acutely aware of the complexities of various areas. This emphasizes the adaptable character of project management approaches and closely reflects the nuanced viewpoint of the literature. The focus of academic studies is that effective project management depends on matching techniques with a particular sector's distinctive traits and requirements. Project managers may address issues unique to their industry, use pertinent best practices, and seize chances for innovation thanks to this alignment. The survey results

underline this vital factor by showing how well respondents understood the contextual subtleties that drive the successful application of project management across various industries. The survey results emphasize the significance of customizing project management strategies to meet the unique requirements of diverse sectors, which aligns with the literature's stance. This knowledge, which aligns with the literature's emphasis on tailoring tactics to industry specifics for effective project results, indicates a comprehensive awareness of the contextual nature of project execution.

The survey results and literature-based analysis, taken together, demonstrate how project management methods are constantly changing. They emphasize the value of a comprehensive strategy that blends tried-and-true theories, cutting-edge viewpoints, and pragmatic factors to produce effective project outcomes. Organizations can successfully navigate the complicated dynamics of contemporary projects by understanding the importance of project management, teamwork, the variables affecting success and failure, the function of software tools, and the context-driven nature of implementation.

CONCLUSIONS

Conclusion

In conclusion, the thorough survey with the knowledge gained from the literature study and data analysis using SPSS gives a complete perspective of the perceptions and attitudes toward project management procedures across various sectors. While adding new features that reflect the changing nature of project management, the findings are consistent with long-standing theories and concepts. The survey's endorsement of project management's importance is compatible with a large body of research highlighting the discipline's critical role in accomplishing corporate goals. This supports the claim that efficient project management drives increased productivity, resource optimization, risk reduction, and on-time project delivery. In addition, the poll emphasizes the critical role teams play in completing projects successfully, supporting the dynamic capabilities framework and the idea that collaborative expertise fosters creativity and adaptation. The consideration of project success and failure causes is consistent with established project management frameworks, notably the "Iron Triangle Rule," which identifies cost, scope, and time as the three main drivers of project results. The conflicting views on who should bear responsibility for project failure reflect the complexity of project setbacks, where the interaction of internal and external causes frequently muddles the issue of who should be held accountable. This is consistent with the literature's emphasis on having a thorough knowledge of failure to help organizations learn from and grow.

The survey's support for project management software solutions reflects the widespread trend of digitization and automation occurring in many sectors of the economy. This result is consistent with research identifying technology as a critical enabler of simplified communication, real-time tracking, and effective resource allocation. However, the varied opinions offered by some respondents highlight the necessity for a balanced strategy incorporating technology while respecting human skills, in line with research that cautions against excessive dependence on technologies without considering how well they work in particular project settings. The emphasis on adaptable techniques in the literature is consistent with the recognition of project management's applicability across various areas, tempered by the requirement for contextual adaptation. This comprehension is consistent

with ideas that support modifying project management procedures to meet the particular needs of different sectors. Organizations may improve project results and ensure they align with their strategic goals by identifying the contextual intricacies of each project environment.

The convergence of the survey results, literature study, and SPSS data analysis provides a thorough grasp of the current state of project management. The alignment of these elements highlights the significance of adopting a comprehensive strategy that integrates conceptual frameworks, real-world insights, and data-driven viewpoints. Organizations may successfully manage projects, improve their project management skills, and support effective project results that align with their strategic ambitions by using this integrated understanding.

Linking with Objectives

As a result of a thorough synthesis of survey results and revelations gleaned from a comprehensive literature analysis, the research objectives have been rigorously pursued and successfully attained. A careful examination of the survey replies, which replicate well-known project management theories and models while revealing particular subtleties, has achieved the study's primary goal, which was to investigate project success variables. The literature study set the stage for examining project success variables by offering a rich tapestry of existing frameworks and concepts. The poll results support the importance of solid teamwork, rigorous project planning, and reasonable resource allocation, which align with well-known models like the "Iron Triangle Rule." The concordance between empirical findings and theoretical underpinnings supports the claim that the research has achieved its primary goal. The secondary aim, which was to assess how much each individual and group contributed to the project's success or failure, has also been accomplished. The poll results demonstrate the complexity of project outcomes, with interviewees attributing both project success and failure to a combination of individual ability, teamwork, and external factors. These findings align with studies that stress the need to understand project dynamics, where unique talents and collective efforts are entwined in deciding project success. The literature study significantly increased the research's ability to delve into the complexities of individual and group contributions. Relevant information regarding the value of task delegation, leadership, and effective communication in project teams was gleaned from the literature review. These

concepts are supported by the survey responses, demonstrating the literature review's value in achieving the study's secondary objective.

The survey results and literature review were successfully incorporated into the research, highlighting the dynamic relationship between theory and practice. The survey results added real-world context and a variety of viewpoints, while the literature research produced a solid theoretical foundation. This synthesis emphasizes how crucial it is to use a holistic approach that integrates academic and real-world knowledge to thoroughly grasp the aspects contributing to project success. In essence, the thorough fusion of survey results and ideas from the literature analysis has enabled the research's objectives to be effectively met. The research's findings are validated by the convergence of actual data and theoretical concepts, which also offers a complex knowledge of the dynamics that lead to project success. This research helps align strategy, improve cooperation, and maximise project outcomes as businesses traverse an increasingly complicated project landscape.

Recommendations

Several vital recommendations may be made to improve the performance of project management initiatives based on the thorough analysis of survey results and insights from the literature research. Communication between members of the project team must be open and honest. Clear communication channels can help avoid misunderstandings and speed decision-making by allowing people to share information, updates, and concerns. Developing teams with various skill sets and domain knowledge can improve problem-solving and creativity. Cross-functional cooperation fosters a broader perspective and enables a more comprehensive solution to project difficulties. It is crucial to support continuing learning of new skills and information. Through training programs and seminars, project teams may improve their capabilities by staying current with the most recent industry trends and practices. Project scope, objectives, and timeframes must all be clearly defined via careful planning. To guarantee thorough preparation, project managers should make use of proven frameworks and tools for project management. Project tracking, resource allocation, and communication may be improved using project management software and tools, such as those mentioned in the survey. These resources allow for effective communication and provide real-time visibility into the status of projects. Strong leadership is essential for project

teams to be guided and problems to be resolved. Effective leadership includes inspiring team members, fostering communication, and coordinating project goals with corporate objectives. Keep a close eye on project metrics and progress. Be prepared to adapt and alter methods if changes to the original plan occur to keep the project's goals in line.

An amalgamation of primary and secondary data-gathering techniques might provide a more thorough insight for the following project management research projects. Case studies that examine particular project management situations in different sectors might be included in future research. These in-depth analyses can offer subtle insights into how project management concepts are used and how they affect results. It can be worthwhile to look at how cultural aspects affect project success. Project dynamics may be impacted by how different cultures influence communication, teamwork, and decision-making methods. It is possible to identify patterns and trends in the success variables for project management by conducting longitudinal studies that follow projects over lengthy time periods. The long-term effects of particular techniques can be better understood using this method. A more comprehensive understanding of project management's challenges and success factors may be obtained by combining quantitative survey data with qualitative data from focus groups or interviews. Examine the financial effects of good project management on businesses. Understanding indicators like return on investment, cost savings, and revenue growth brought on by enhanced project management may provide concrete insights. Project management should emphasize issues unique to the sector. Exploring these intricacies can produce recommendations specifically tailored to different industries' needs. Examine how project management processes are affected by new technologies such as automation, machine learning, and artificial intelligence. It might be instructive to comprehend how these technologies shape the outcomes of projects. Future studies can further improve our comprehension of project management success characteristics and contribute significantly to the field by using a varied strategy that incorporates both primary and secondary data-gathering techniques and considering the abovementioned ideas.

Research limitations

It's vital to highlight several study limitations despite the insightful findings from the survey and subsequent data analysis. These restrictions provide the context of the results and point

out ways that future research may be enhanced. A sample bias may have been introduced since the survey was only given to a particular set of respondents. The generalizability of the results might have been impacted by the survey's reach needing to be more comprehensive of all probable opinions and experiences within the larger population. Results may be skewed due to respondents' greater interest in or expertise with project management if they engaged freely in the poll. People who opted out could have had different viewpoints or experiences that weren't recorded. Participant answers are susceptible to response bias, in which people may be swayed by social desirability or their ideas of what is expected. This bias might impact the reliability and quality of the data presented. Without obtaining precise contextual data on each respondent's project management experiences or industry backgrounds, the survey simply collected replies in response to the questions. This constraint makes it difficult to comprehend the nuances that might affect the variables that determine project success. Project failure-related variables may have needed to be more represented in the survey since it was primarily focused on project management success factors. A more impartial approach may offer a more comprehensive viewpoint considering both success and failure reasons. The survey's primary focus was on numbers, which made it difficult to gain in-depth qualitative insights. A more profound comprehension of the viewpoints and experiences of respondents could be possible through qualitative interviews or focus groups.

Non-response bias may exist since the survey's response rate was less than 100%. A partial representation of the target demographic might result from those who opted out having different perspectives or life experiences. The survey scope might have included a narrow range of cultures, sectors, and geographical areas. The results may not be generalizable since project management techniques might differ significantly across various criteria. Instead of delving into causal linkages, the survey's design concentrated on finding associations and correlations between variables. As a result, the study's results cannot conclusively prove cause-and-effect linkages. The poll collected data at a particular time. Thus, the results are based on the viewpoints and experiences of respondents at that time. Over time, project management methods and attitudes may change. To correctly interpret the results and guide future studies' design, it is essential to be aware of these constraints. Taking care of these issues might improve the validity and reliability of study findings and give additional insight into the variables contributing to successful project management.

Future perspective

The existing project management success criteria study may be expanded upon in several intriguing ways. These upcoming viewpoints can help us better comprehend the subject matter and provide insightful information for practitioners and scholars. A dynamic perspective of how success determinants change over time may be obtained by conducting longitudinal studies that follow project management procedures and results over an extended period. This method would consider alterations in trends and practices and their effects on project success. Future studies might investigate project management success variables in other cultural contexts and business sectors to improve the generalizability of findings. This comparative method would show how differences in cultural norms, business practices, and laws affect success factors. A greater comprehension of the underlying causes of project success or failure may be gained by combining quantitative data with qualitative insights through in-depth interviews, focus groups, or case studies. Richer contextual data and personal tales can be provided through qualitative research. Investigating how risk management techniques affect project success may be a worthwhile endeavour. Project management techniques may be improved by determining essential risk factors, mitigation plans, and their effects on project results. Understanding how project management software, AI-driven analytics, and digital tools affect success criteria is essential as technology develops. Research can examine how these technologies improve project decision-making, communication, and cooperation. Future studies can go deeply into the elements contributing to project failure, whereas this research concentrates on success factors. Finding frequent problems, their causes, and the lessons discovered from unsuccessful initiatives may be extremely helpful in averting future failures.

Offering insights into interpersonal elements that affect project outcomes is investigating the function of team dynamics, leadership styles, and communication techniques. One way to gain a comprehensive knowledge of the project management environment is to examine how external factors like market dynamics, regulatory changes, and economic situations affect project success factors. A mixed-methods study methodology can provide a complete perspective of the aspects contributing to project management success by combining quantitative data with qualitative views. This strategy would enable both statistical analysis

and subtle contextual comprehension. Future studies might examine the efficacy of various project management tools and software in diverse settings, illuminating which solutions are best suited for particular project types. Concentrating on a specific industry or sector might bring to light distinct success characteristics that are particularly pertinent within those domains. This focused approach may result in recommendations for those industries' practitioners that are specifically suited. By exploring these foreseeable views, academics may help project management techniques continue to be improved and offer practical insights to raise project success rates. These study directions can advance the discipline and provide invaluable advice to professionals looking to improve their project management tactics.

REFERENCES

Aranyosy, M., Blaskovics, B. and Horváth, Á.A. (2018) 'How universal are IT project success and failure factors? Evidence from Hungary.', *Information Systems Management*, 35(1), pp. 15-15–28. Available at: <https://doi.org/10.1080/10580530.2017.1416943>.

Bennett, N. and Lemoine, J. (2014) 'What VUCA Really Means for You by Nathan Bennett, James Lemoine :: SSRN', *Harvard Business Review*, 3 February. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2389563 (Accessed: 17 July 2023).

Hill, G.M. (2004) 'EVOLVING THE PROJECT MANAGEMENT OFFICE: A COMPETENCY CONTINUUM.', *Information Systems Management*, 21(4), pp. 45-45–51. Available at: <https://doi.org/10.1201/1078/44705.21.4.20040901/84187.6>.

Ika, L.A. and Pinto, J.K. (2022) 'The “re-meaning” of project success: Updating and recalibrating for a modern project management', *International Journal of Project Management*, 40(7), pp. 835–848. Available at: <https://doi.org/10.1016/j.ijproman.2022.08.001>.

Korhonen, T. *et al.* (2023) 'How performance measurement can support achieving success in project-based operations.', *International Journal of Project Management*, 41(1), p. N.PAG. Available at: <https://doi.org/10.1016/j.ijproman.2022.11.002>.

Kutsch, E. *et al.* (2015) 'The Contribution of the Project Management Office: A Balanced Scorecard Perspective.', *Information Systems Management*, 32(2), pp. 105-105–118. Available at: <https://doi.org/10.1080/10580530.2015.1018768>.

Lech, P. (2013) 'Time, Budget, And Functionality?—IT Project Success Criteria Revised.', *Information Systems Management*, 30(3), pp. 263-263–275. Available at: <https://doi.org/10.1080/10580530.2013.794658>.

Luis de Moura, R., Janes Carneiro, T.C. and Lemos Dias, T. (2023) 'VUCA environment on project success: The effect of project management methods.', *Brazilian Business Review (Portuguese Edition)*, 20(3), pp. 236-236–259. Available at: <https://doi.org/10.15728/bbr.2023.20.3.1.en>.

- Owen, R. *et al.* (2006) 'Is agile project management applicable to construction?', in.
- Szpitter, A. and Sadkowska, J. (2016) 'Using VUCA matrix for the assessment of project environment risk', *Zarządzanie i Finanse vol. 14 no. 2/1/2016* [Preprint].
- Varajão, J.E. (2022) 'A New Process for Success Management – Bringing order to a typically ad-hoc area', *The Journal of Modern Project Management*, 5(3). Available at: <https://journalmodernpm.com/manuscript/index.php/jmpm/article/view/JMPM01511> (Accessed: 22 July 2023).
- Zwikael, O. and Meredith, J. (2021) 'Evaluating the Success of a Project and the Performance of Its Leaders.', *IEEE Transactions on Engineering Management*, 68(6), pp. 1745-1745–1757. Available at: <https://doi.org/10.1109/TEM.2019.2925057>.
- Nørreklit, H. ed., 2017. A philosophy of management accounting: A pragmatic constructivist approach. Taylor & Francis.
- Baccarini, D., 1999. The logical framework method for defining project success. *Project management journal*, 30(4), pp.25-32.
- Nelson R. (2005). Project Retrospectives: Evaluating Project Success, Failure, and Everything in Between. *MIS Quarterly Executive*, 4(3), pp. 361- 372
- Eveleens J., & Verhoef C. (2010). The Rise and Fall of the Chaos Report Figures. *IEEE Software*, January/February, pp. 30 – 36
- Rico, D. F. (2008). What is the Return on Investment (ROI) of agile methods. 1–7. <http://www.danielabella.com/livros/acp/downloads/acp19.pdf>
- Abal-Seqan, M.H., Pokharel, S. and Naji, K.K. (2023) 'Key success factors and their impact on the performance of construction projects: Case in Qatar', *Sustainability*, 15(4), p. 3700. doi:10.3390/su15043700.
- Ahmadabadi, A.A. and Heravi, G. (2019) 'The effect of critical success factors on project success in public-private partnership projects: A case study of highway projects in Iran', *Transport Policy*, 73, pp. 152–161. doi:10.1016/j.tranpol.2018.07.004.

- Al-Ababneh, M. (2020) Linking ontology, epistemology and research methodology, SSRN. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3708935 (Accessed: 12 August 2023).
- Alvarenga, J.C. et al. (2019) 'The Project Manager Core Competencies to Project Success', *International Journal of Managing Projects in Business*, 13(2), pp. 277–292. doi:10.1108/ijmpb-12-2018-0274.
- Armenia, S. et al. (2019) 'Sustainable Project Management: A conceptualization-oriented review and a framework proposal for future studies', *Sustainability*, 11(9), p. 2664. doi:10.3390/su11092664.
- Arshad, H., Asghar, S. and Noor, M.A. (2023) 'A framework for eGovernment PROJECT SUCCESS: An exploratory study using systematic literature review and empirical investigation', *Electronic Government, an International Journal*, 19(1), p. 22. doi:10.1504/eg.2023.127577.
- Awuzie, B. and Monyane, T.G. (2020) 'Conceptualizing sustainability governance implementation for Infrastructure Delivery Systems in developing countries: Success Factors', *Sustainability*, 12(3), p. 961. doi:10.3390/su12030961.
- Ayat, M. et al. (2020) 'Current trends analysis and prioritization of Success Factors: A systematic literature review of ICT Projects', *International Journal of Managing Projects in Business*, 14(3), pp. 652–679. doi:10.1108/ijmpb-02-2020-0075.
- Babii, A. (2020) 'Important aspects of the experimental research methodology', *Scientific journal of the Ternopil national technical university*, 97(1), pp. 77–87. doi:10.33108/visnyk_tntu2020.01.077.
- Dodds, S. and Hess, A.C. (2020) 'Adapting research methodology during COVID-19: Lessons for transformative service research', *Journal of Service Management*, 32(2), pp. 203–217. doi:10.1108/josm-05-2020-0153.

- Dzwigol, H. (2022) 'Research methodology in management science: Triangulation', *Virtual Economics*, 5(1), pp. 78–93. doi:10.34021/ve.2022.05.01(5).
- Errida, A. and Lotfi, B. (2021) 'The determinants of Organizational Change Management Success: Literature Review and Case Study', *International Journal of Engineering Business Management*, 13, p. 184797902110162. doi:10.1177/18479790211016273.
- Francisco de Oliveira, G. and Rabechini Jr, R. (2019) 'Stakeholder management influence on trust in a project: A quantitative study', *International Journal of Project Management*, 37(1), pp. 131–144. doi:10.1016/j.ijproman.2018.11.001.
- Greening, N. (2019) 'Phenomenological Research methodology', *Scientific Research Journal*, VII(V). doi:10.31364/scirj/v7.i5.2019.p0519656.
- Gunduz, M. and Almuajebh, M. (2020) 'Critical success factors for sustainable construction project management', *Sustainability*, 12(5), p. 1990. doi:10.3390/su12051990.
- H. R., G. and Aithal, P.S. (2022) The DDLR model of research process for designing robust and realizable research methodology during ph.D.. program in India, SSRN. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4246241 (Accessed: 12 August 2023).
- Iriarte, C. and Bayona, S. (no date) It projects success factors: A literature review, AIS Electronic Library (AISeL). Available at: <https://aisel.aisnet.org/ijispm/vol8/iss2/4> (Accessed: 12 August 2023).
- Javed Iqbal, S.M. et al. (2019) 'Does Project Teamwork matter? investigating the relationship between Transformational Leadership and Project Success', *Journal of Management Sciences*, 6(1), pp. 79–95. doi:10.20547/jms.2014.1906106.
- Khosravi, P., Rezvani, A. and Ashkanasy, N.M. (2020) 'Emotional intelligence: A preventive strategy to manage destructive influence of conflict in large scale projects', *International Journal of Project Management*, 38(1), pp. 36–46. doi:10.1016/j.ijproman.2019.11.001.

- Kivijärvi, H. (2020) 'Theorizing it project success', *International Journal of Information Technology Project Management*, 11(1), pp. 71–98. doi:10.4018/ijitpm.2020010105.
- Li, Y. et al. (2019) 'Organizational behavior in megaprojects: Integrative Review And Directions For Future Research', *Journal of Management in Engineering*, 35(4). doi:10.1061/(asce)me.1943-5479.0000691.
- Li, Y. et al. (2019) 'Review of critical success factors (csfs) for Green Building Projects', *Building and Environment*, 158, pp. 182–191. doi:10.1016/j.buildenv.2019.05.020.
- Luna-Reyes, L.F. et al. (2021) 'Sensemaking and social processes in digital government projects', *Government Information Quarterly*, 38(2), p. 101570. doi:10.1016/j.giq.2021.101570.
- Mahuika, N. and Mahuika, R. (2020) 'Wānanga as a research methodology', *AlterNative: An International Journal of Indigenous Peoples*, 16(4), pp. 369–377. doi:10.1177/1177180120968580.
- Miller, G.J. (2022) 'Artificial Intelligence Project Success Factors—beyond the ethical principles', *Lecture Notes in Business Information Processing*, pp. 65–96. doi:10.1007/978-3-030-98997-2_4.
- Montenegro, A. et al. (2021) 'Impact of construction project managers' Emotional Intelligence on Project Success', *Sustainability*, 13(19), p. 10804. doi:10.3390/su131910804.
- Muñoz, F. and Chion, S. (2020) 'Influence of indirect internal stakeholders on the performance of strategic projects: Understanding the behaviour of projects in universities in Bogotá', *International Journal of Project Organisation and Management*, 12(3), p. 213. doi:10.1504/ijpom.2020.108938.
- Newman, M. and Gough, D. (2019) 'Systematic reviews in educational research: Methodology, perspectives and application', *Systematic Reviews in Educational Research*, pp. 3–22. doi:10.1007/978-3-658-27602-7_1.

- Pall, G.K. et al. (2019) 'Critical delay factors in power transmission projects: A structural equation modeling approach', *International Journal of Construction Management*, 22(6), pp. 1158–1170. doi:10.1080/15623599.2019.1686835.
- Pan, Y. and Zhang, L. (2021) 'A BIM-Data Mining Integrated Digital Twin Framework for Advanced Project Management', *Automation in Construction*, 124, p. 103564. doi:10.1016/j.autcon.2021.103564.
- Podgórska, M. and Pichlak, M. (2019) 'Analysis of Project Managers' leadership competencies', *International Journal of Managing Projects in Business*, 12(4), pp. 869–887. doi:10.1108/ijmpb-08-2018-0149.
- Ryder, C. et al. (2019) 'Indigenous research methodology – weaving a research interface', *International Journal of Social Research Methodology*, 23(3), pp. 255–267. doi:10.1080/13645579.2019.1669923.
- Simon, L. et al. (2020) 'Developing a theoretical success factor framework for the tendering phase of social infrastructure ppps', *International Journal of Construction Management*, 20(6), pp. 613–627. doi:10.1080/15623599.2020.1720343.
- Snyder, H. (2019) 'Literature review as a research methodology: An overview and guidelines', *Journal of Business Research*, 104, pp. 333–339. doi:10.1016/j.jbusres.2019.07.039.
- Sperry, R.C. and Jetter, A.J. (2019) 'A systems approach to project stakeholder management: Fuzzy Cognitive Map Modeling', *Project Management Journal*, 50(6), pp. 699–715. doi:10.1177/8756972819847870.
- Tam, C. et al. (2020) 'The factors influencing the success of on-going agile software development projects', *International Journal of Project Management*, 38(3), pp. 165–176. doi:10.1016/j.ijproman.2020.02.001.
- Thesing, T., Feldmann, C. and Burchardt, M. (2021) 'Agile Versus Waterfall Project Management: Decision model for selecting the appropriate approach to a project', *Procedia Computer Science*, 181, pp. 746–756. doi:10.1016/j.procs.2021.01.227.

- Toledo, R. et al. (2023) 'Using qualitative content analysis: Evidence to effectively practice internal audit', *International Journal for Quality Research*, 17(2), pp. 617–634. doi:10.24874/ijqr17.02-20.
- Urcia, I.A. (2021) 'Comparisons of adaptations in Grounded Theory and phenomenology: Selecting the specific qualitative research methodology', *International Journal of Qualitative Methods*, 20, p. 160940692110454. doi:10.1177/16094069211045474.
- Wohlin, C. and Runeson, P. (2021) 'Guiding the selection of research methodology in industry–academia collaboration in software engineering', *Information and Software Technology*, 140, p. 106678. doi:10.1016/j.infsof.2021.106678.
- Wuni, I.Y. and Shen, G.Q. (2019) 'Critical success factors for Modular Integrated Construction Projects: A Review', *Building Research & Information*, 48(7), pp. 763–784. doi:10.1080/09613218.2019.1669009.
- Zhang, L. et al. (2020) 'How do relational contracting norms affect IPD teamwork effectiveness? A Social Capital Perspective', *Project Management Journal*, 51(5), pp. 538–555. doi:10.1177/8756972820911241.

APPENDICES

Appendix 1: Survey Questionnaires

1) What Age group do you belong to?

- Below 18
- 18 - 25
- 25 - 35
- 35 - 50
- 50 - 75
- 75 above

2) Are you a working professional?

- Yes
- No
- Prefer not to answer

3) What comes to your mind when you think of Project Management? or Project Managers?

4) Should Project Management be implemented in all fields of work?

YES/No/Maybe. Please explain why?

5) In what field of work do you think Project Management is applicable?

- IT
- Engineering
- Pharmaceutical
- Civil Works/Construction
- All (any field of work)
- Other

6) While working on a project is the TEAM contribution a must and an important factor?

Yes/No/Maybe. Please explain why?

7) According to you, what are the most critical factors that make a project success?

- Project Knowledge
- Project Skill
- Technical know-how
- Management
- Control
- Good Practices
- Quality over Quantity
- Risk Aversion
- Realistic Expectation
- Scope
- Return on Investment
- Budget
- Team Management
- ALL of the above
- Others

8) According to you, what makes a project a failed project?

- Zero Project Knowledge
- No Project Skill
- Zero Technical know-how
- Improper Management
- Improper Control

- Bad Practices
- Quantity over Quality
- High Risk Approach
- No Realistic Expectation/ Improper project forecast
- Scope understandability
- Zero Return on Investment
- Exceeds Budget
- No Team Management
- ALL of the above
- Other

9) What is Project Management?

- Fixed & Variable Process
- Continuous Learning
- Both
- Cannot Say!

10) Project Management consists of an Iron Triangle Rule which is 'Cost, Scope & Time'. Apart from these 3, what factor/parameter can be taken into consideration for making this Rule more fluent/efficient?

- No change needed; this is perfect!
- Cannot Say
- Other

11) With the rise in Project Managers in many fields of work, how important do you think is the role of a Project Manager? (Not important-1 and very important-5)

- 1
- 2

- 3
- 4
- 5

12) Should Project Management be done with the help of software or tools that are available in the market nowadays?

- Absolutely YESSSS
- No! it's all hyped
- Can't really say anything

13) What is the best method for Project Management?

- Nothing but Email!
- Microsoft Office (Word & Excel)
- Microsoft Projects
- Jira
- Asana
- Basecamp
- Trello
- Other

14) Should the Team contribution matter while managing a Project? How Important is this?

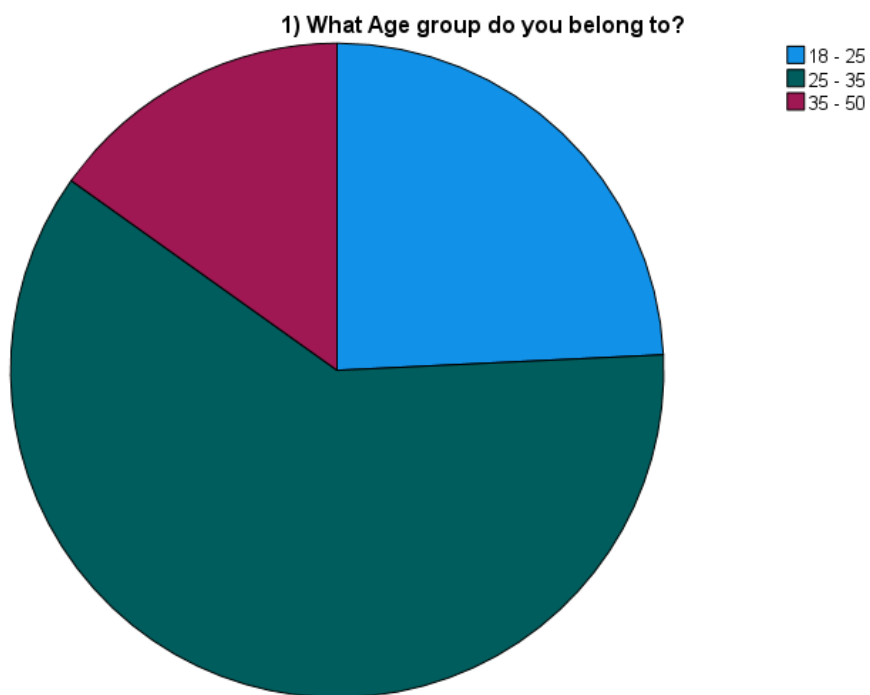
(Not important-1 and very important-5)

- 1
- 2
- 3
- 4
- 5

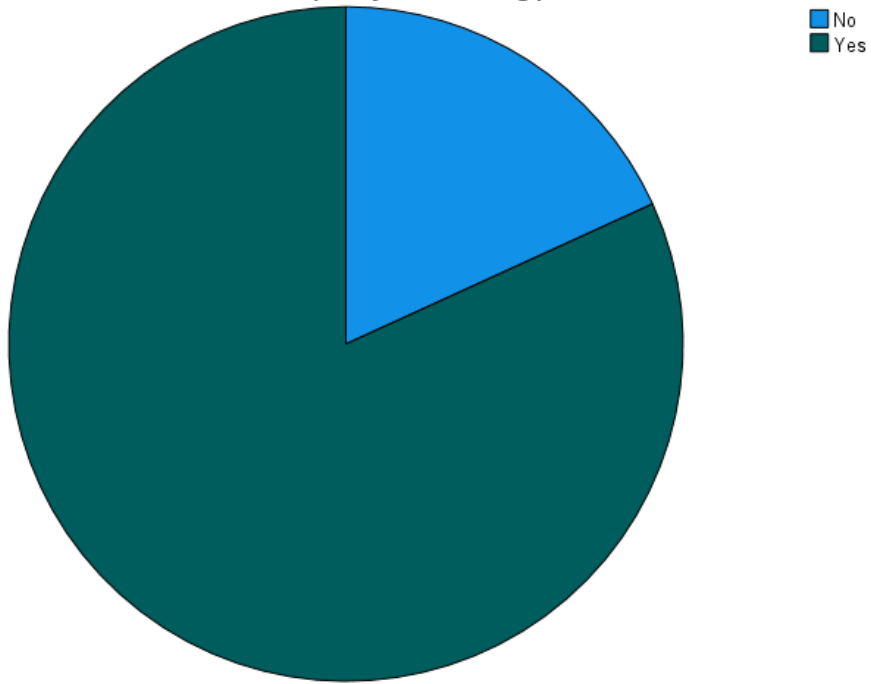
15) Hypothetically speaking, consider a project fails due to certain reasons, who according to you should be held responsible?

- Project Manager
- Team Manager/Lead
- Team Member/s
- or Set a Jury and commence investigation to find the culprit
- Other

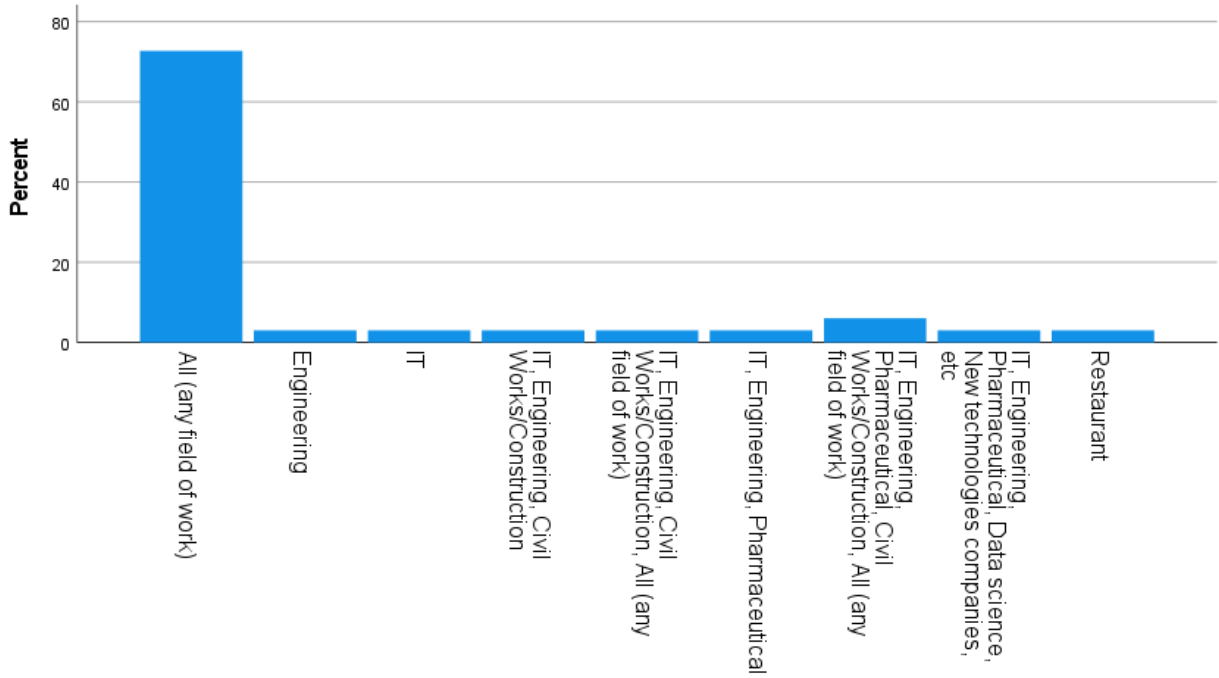
Appendix 2: Survey Analysis



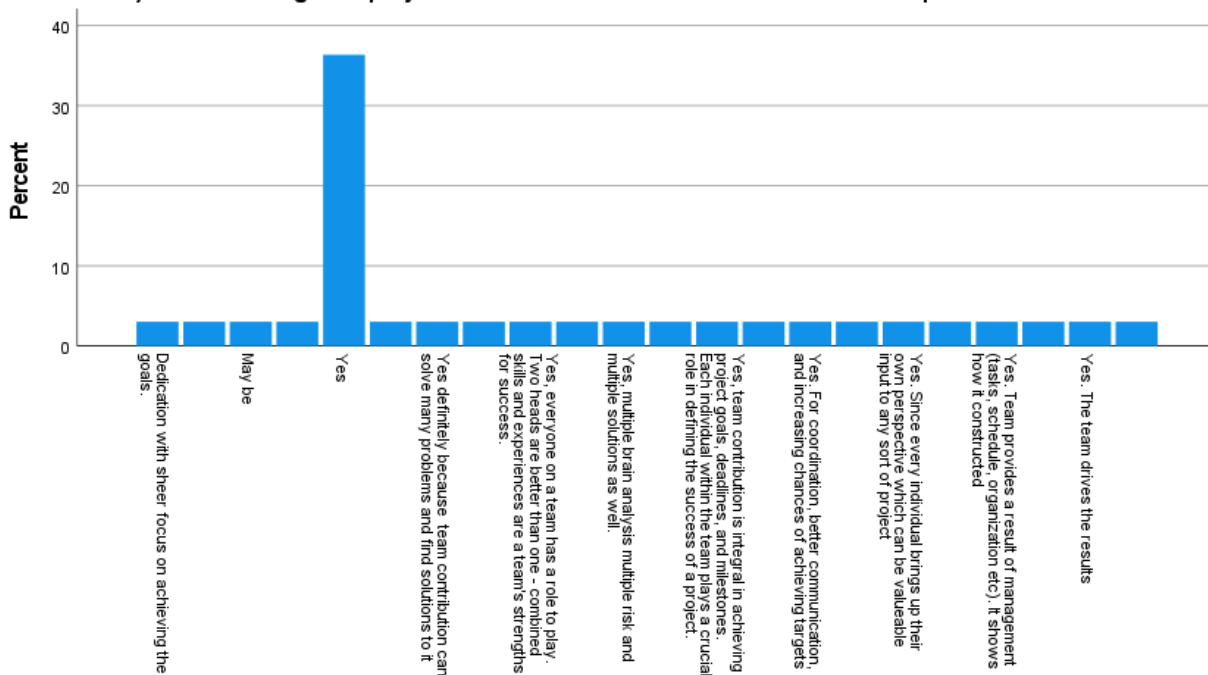
2) Are you a working professional?



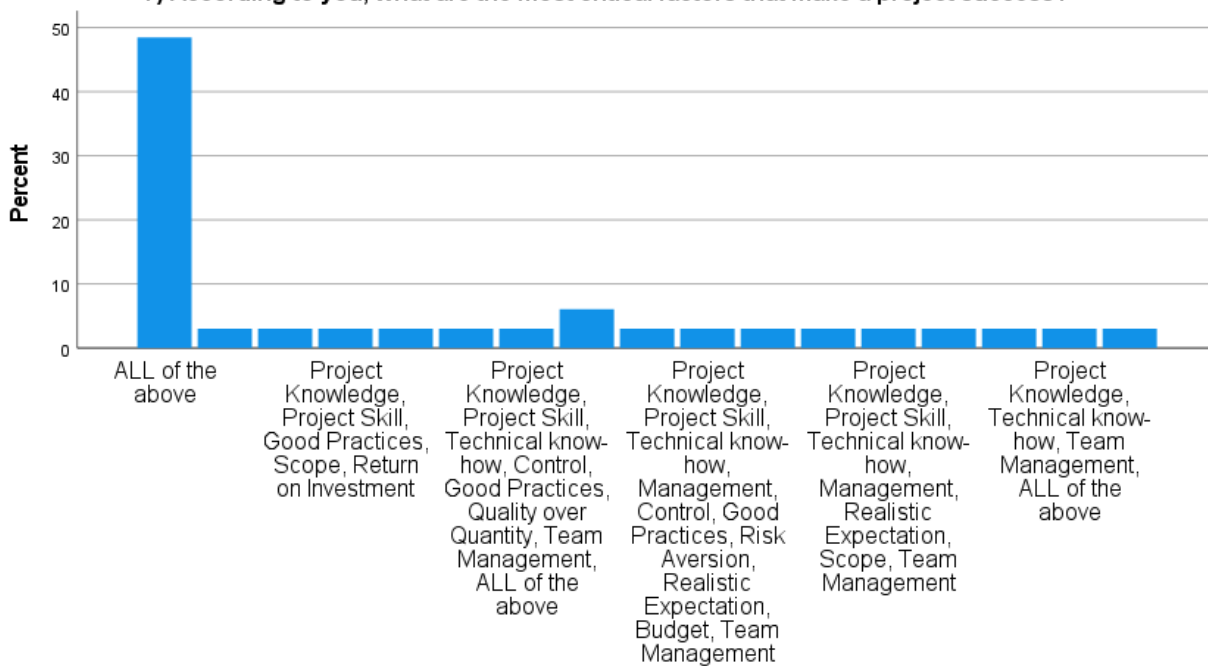
5) In what field of work do you think Project Management is applicable?

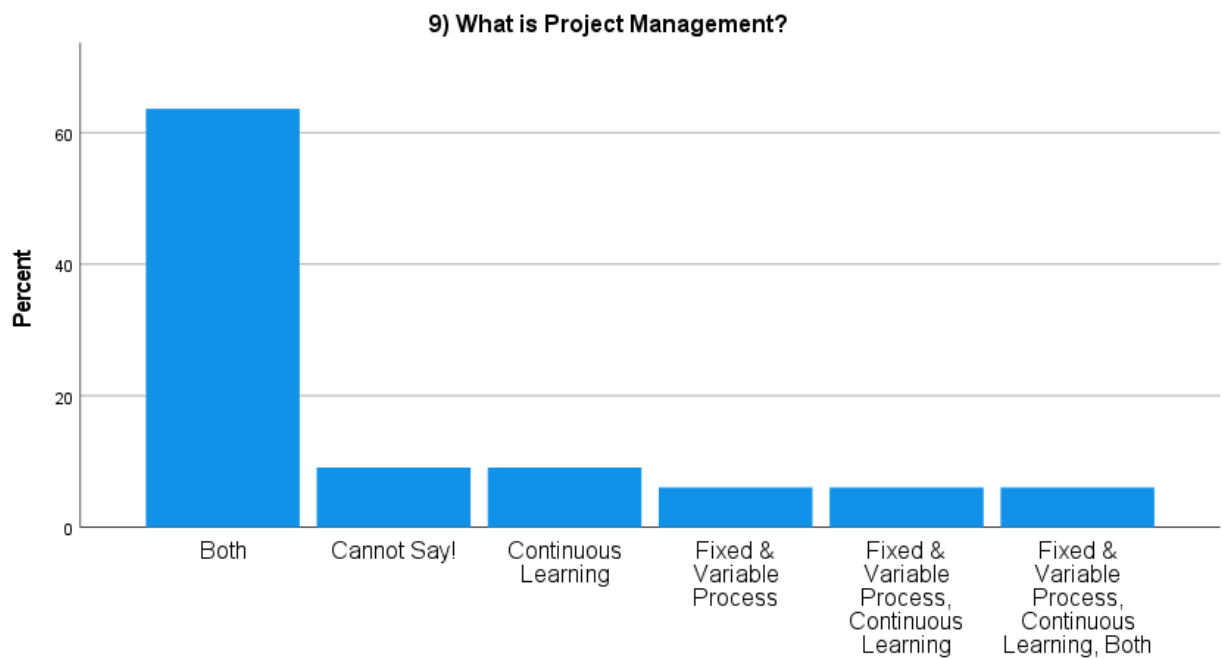


6) While working on a project is the TEAM contribution a must and an important factor?



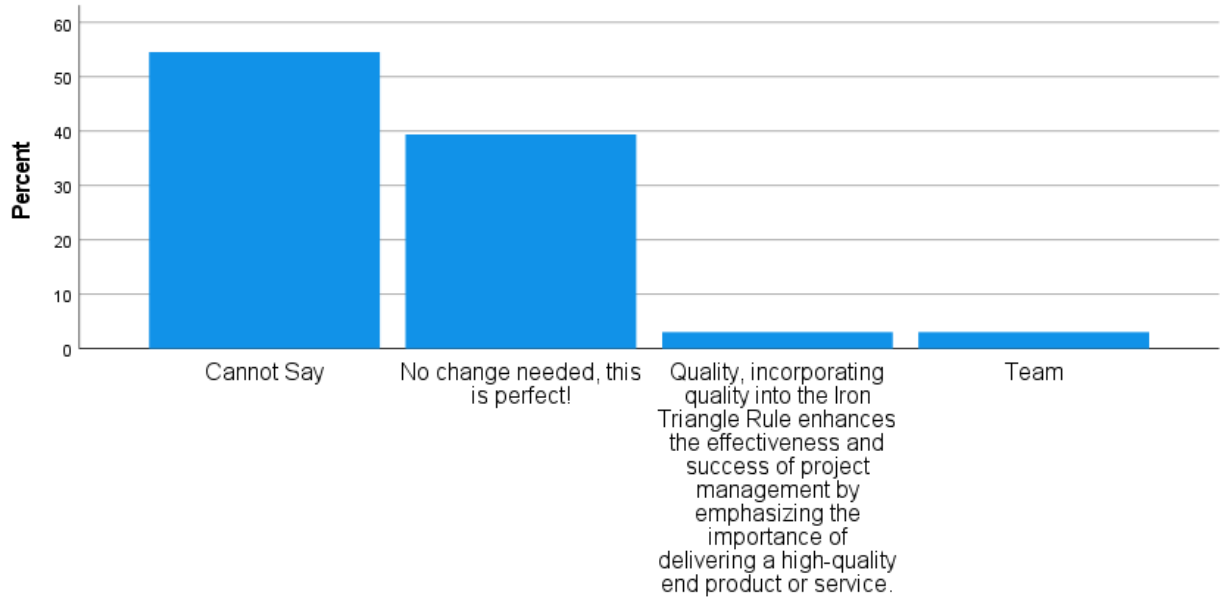
7) According to you, what are the most critical factors that make a project success?





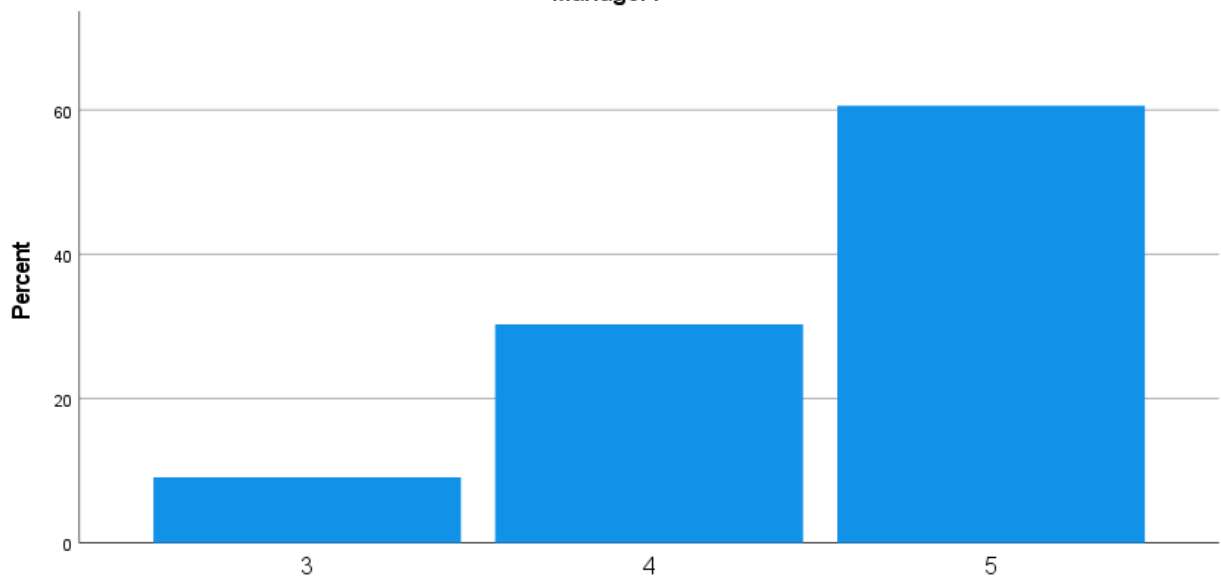
9) What is Project Management?

10) Project Management consists of an Iron Triangle Rule which is 'Cost, Scope & Time'. Apart from these 3, what factor/parameter can be taken into consideration for making this Rule more fluent/efficient?

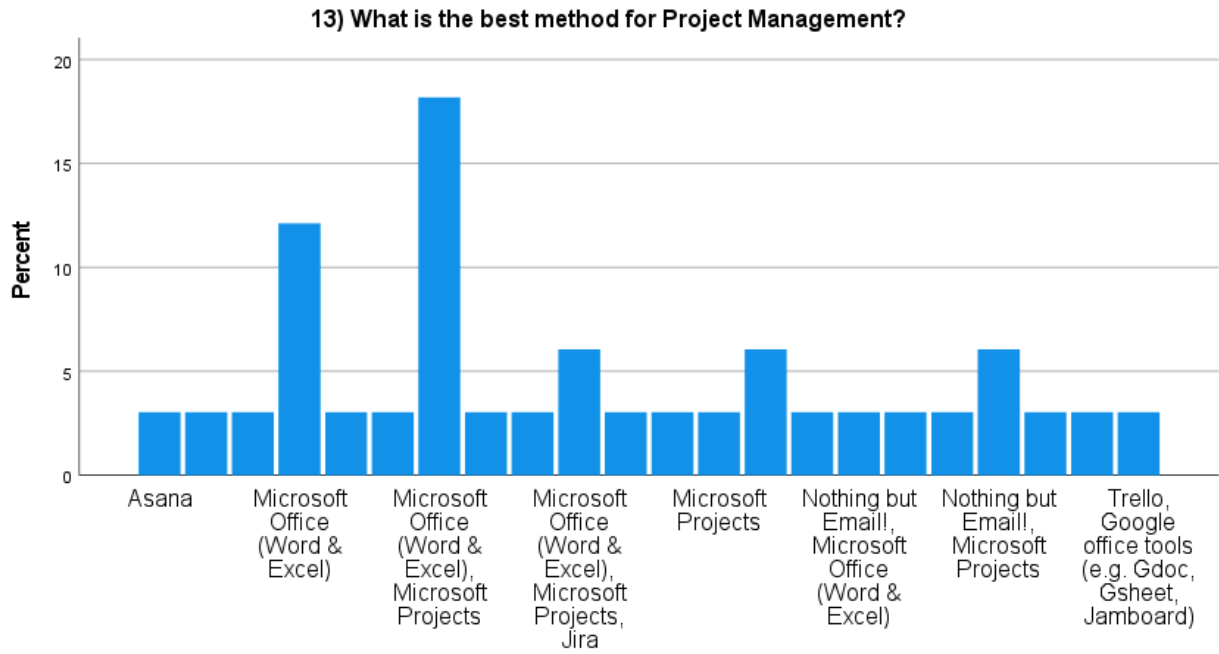


10) Project Management consists of an Iron Triangle Rule which is 'Cost, Scope & Time'. Apa...

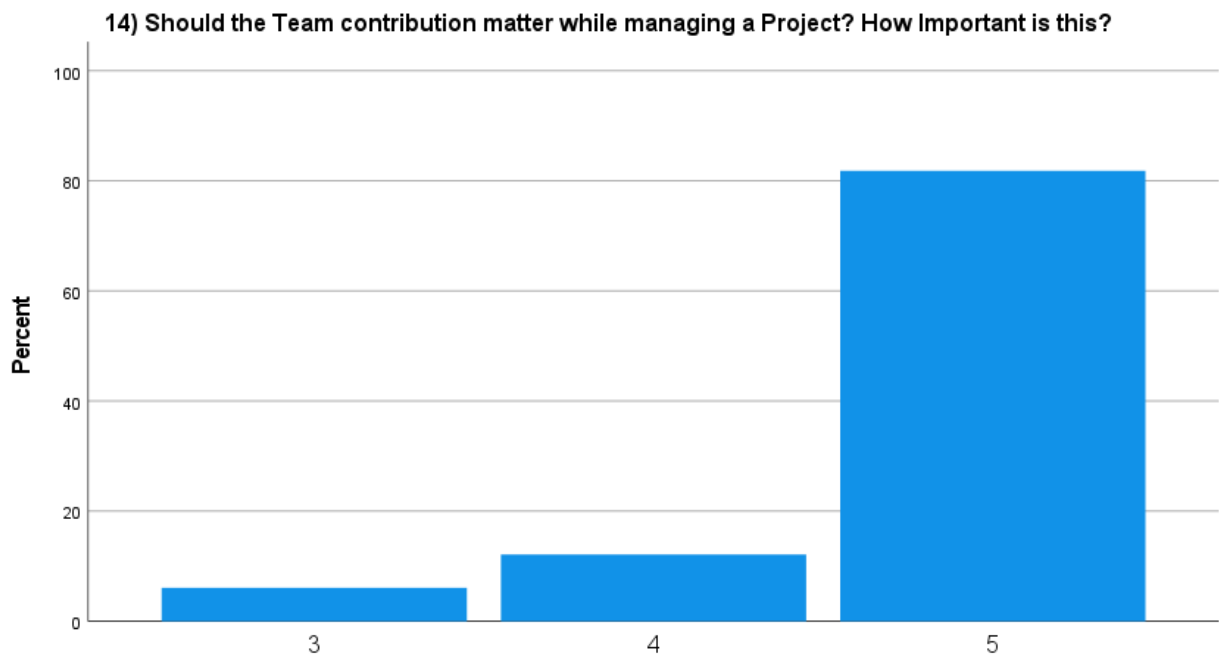
11) With the rise in Project Managers in many fields of work, how important do you think is the role of a Project Manager?



11) With the rise in Project Managers in many fields of work, how important do you think is the role of a Project Manager?

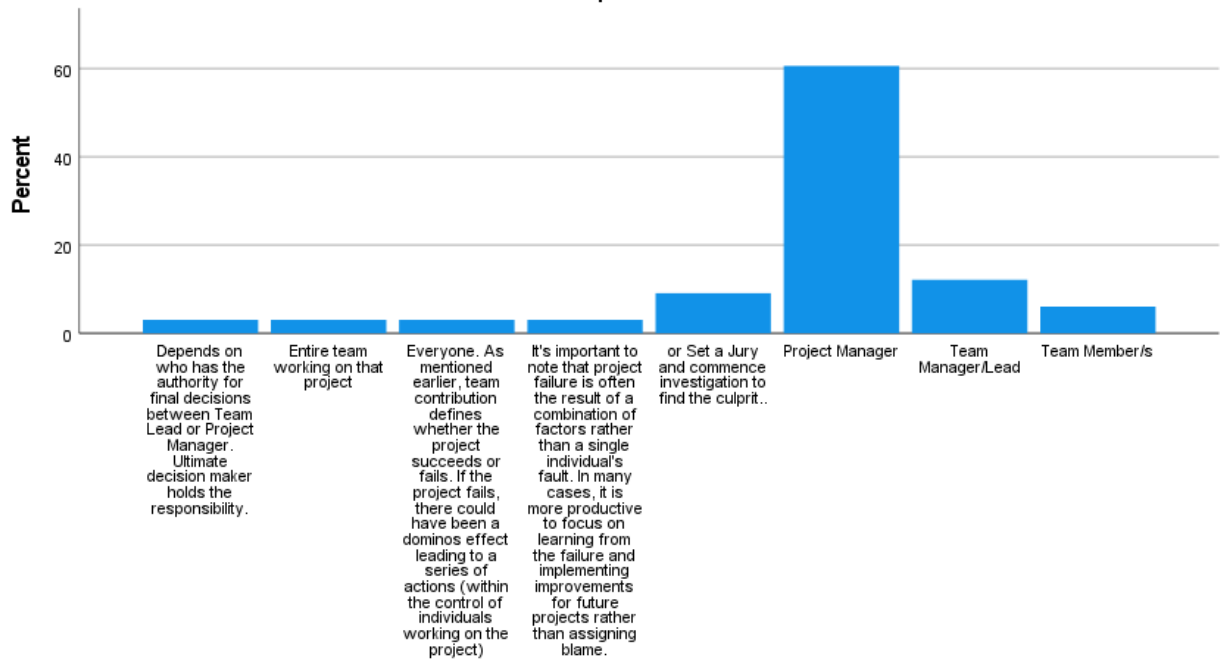


13) What is the best method for Project Management?

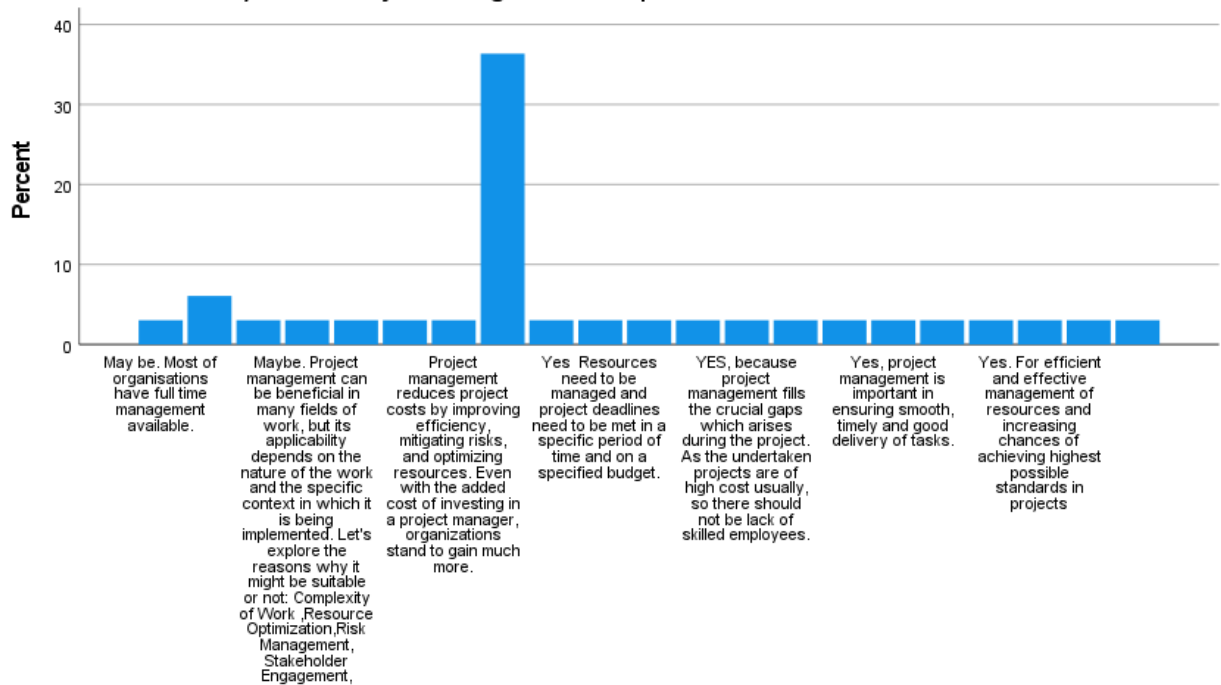


14) Should the Team contribution matter while managing a Project? How Important is this?

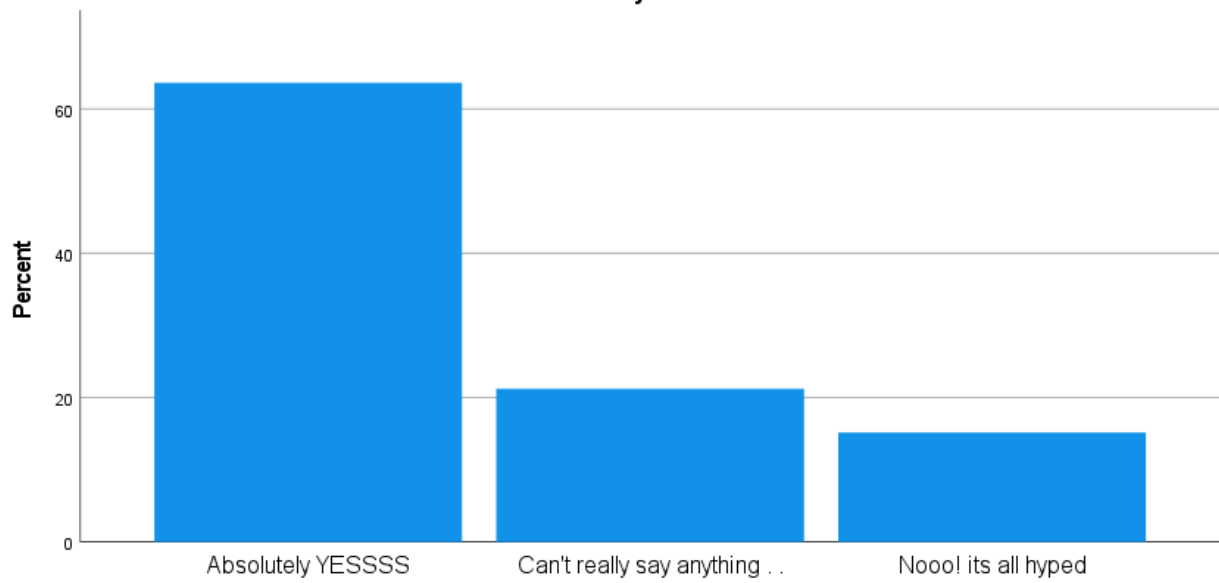
15) Hypothetically speaking, consider a project fails due to certain reasons, who according to you should be held responsible?



4) Should Project Management be implemented in all fields of work?



12) Should Project Management be done with the help of software or tools that are available in the market nowadays?



12) Should Project Management be done with the help of software or tools that are available in the market nowadays?

Appendix 3

INFORMATION SHEET FOR Participants

Research project title: Evaluative Quantitative Research on Success Measurement in the Field of Project Management.

Student Researcher: Mayuresh Vilas Gaikwad [10626800@mydbs.ie]

Research Supervisor: *David Duff* [david.duff@dbs.ie]

About the Project

My name is Mr. Mayuresh Vilas Gaikwad, a student of Dublin Business School pursuing an M.Sc. in Management Practice. My supervisor for this research is David Duff. This study conducted is in affiliation with DBS Master of Science Program.

The background of the study aims to quantify the success measurement factors in the field of Project Management. The research is based on a closed-loop questionnaire wherein few questions are to be answered, please note this research is limited to answers that are amassed for the research.

You are being asked to take part in a research study on the aforementioned project.

In this study, you will be asked to select the answer in the questionnaire as per your desirability and opinion to the extent that it is possible. Post your submission, the answers will be derived in a graphical representation stating the opinions of the participants.

The study typically takes less than 10 minutes in a single attempt.

Data Protection

For questionnaires/experiments/tests: The data you provide as part of this questionnaire/experiment will be fully anonymous. I will not gather any direct personally identifying information about you or anyone close to you. You will be asked to provide optional demographic information of a broad nature about yourself. Your data will be collated into a larger dataset and analyzed at the group rather than the individual level. Your data will only be used for academic purposes and will not be shared with anyone for commercial purposes.

What are the risks and benefits of taking part in this study?

In addition to providing much appreciated assistance to the student researcher, the main benefit of taking part in this study will be your contribution to academic research, which aims to expand knowledge and generate new insights. There will be no risks posed to you as a participant in this study, either physical or psychological, beyond that which is normally expected of day-to-day activities.

If you are interested in taking part...

If you are interested in taking part please review the information provided in the consent form and if you are happy to proceed with the study then please indicate your willingness to take part by ticking the appropriate box/signing your name where appropriate.

You are under no obligation to take part in this study or to provide a reason if you decide not to take part. You may choose not to take part without fear of penalty. If you agree to take part you have the right to cease participation and withdraw your data at any time for any reason without fear of penalty. The data will not be used by any member of the project team for commercial purposes.

Consent Form

I voluntarily agree to take part in this research study.

I understand that I am not obliged to take part in this study and that my participation in the study is entirely voluntary.

I understand that I am free to withdraw from the study at any time or refuse to answer any question without the need to provide reason and without fear of negative consequences.

Specific to Anonymous Questionnaire I understand that my responses will be anonymous

Specific to Anonymous Questionnaire I understand that in the case of completing an anonymous questionnaire, it will not be possible to subsequently withdraw my data due to the fact that there will be no personally identifying information attached to my responses.

I understand that I will not benefit directly from participating in this research.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

I understand that signed consent forms will be retained for some time until the exam board confirms the results of their dissertation.

I confirm that I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study with satisfactory answers provided.

I confirm that I have read and fully understood the information provided and statements above.

Name & Signature of research participant

Date

Name & Signature of researcher

Date