PROJECT MANAGERS' EXPERIENCE AND ITS IMPACT ON A PROJECT'S

SUCCESSFUL COMPLETION: A REVIEW OF THE LITERATURE

by

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Project managers' experience and its impact on a project's successful completion: A review of the literature

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Abstract

There is much analysis and discussion around the types of factors that influence project success and the complexity involved with what truly drives a successful project outcome. This qualitative analysis literature review evaluates themes around project success factors, project manager competencies and characteristics, technical skill sets, and leadership skill sets, to uncover potential trends that lead to project success achievement. The recipe for project success has long eluded researchers as there are many human-related factors, organizational culture factors, customer expectations, and the project manager's technical knowledge, or related knowledge to the specific knowledge domain. This paper reviews the combination of multiple themes and draws conclusions related to if a project manager's technical experience and knowledge, or lack thereof, has a significant impact and contribution to the success of the project they're leading.

Keywords: project success, technical project manager, project failure, project manager competencies, project manager skill sets, leadership

Introduction

The usage of the traditional project management triple constraints (budget, scope, schedule) as the primary determining measures of project success are under review (Radujković, M. et al., 2017), as oftentimes that definition of success may be subjective. One project manager may label a project successful simply by it being on time and on budget, but perhaps the customer isn't satisfied with the product, or the outcome is of poor quality and thus the project may not ultimately be considered successful (Dvir et al., 2006). In fact, project success is more often judged by the customer, who is looking for ultimate scope achievement and product function (Serrador & Turner, 2015). As additional factors that may contribute to project success are considered, there may also be consideration of the project manager themselves, in terms of skill set and competency that may contribute to project success (Geoghegan & Dulewicz, 2008). With growing focus on customer satisfaction as a measure of successful project outcome (Serrador & Turner, 2015), the focus may be turned towards the knowledge and competency of the project manager as contributing factors towards understanding how to achieve customer satisfaction and thus project success.

With a multitude of variables involved with potential contribution to project success, narrowing this down to just the human factors of attitude or soft skills, such as leadership capability and problem-solving ability in unison with the technical knowledge of the project manager leading the effort, provides clues in at least one potential contributor to the ultimate outcome of a project. There's a changing perception on priority of these skill sets of a project manager over time, with historical thinking being it must be technical knowledge primarily, and more recent thinking leaning more towards interpersonal type skills (Gillard, 2019). While the size and complexity can often drive the extent of the need for in-depth project managers' skill sets, the overall competencies and type of experience the project manager has, are substantially correlated with a successful outcome of the project (Spalek, 2005). Gaining a more thorough understanding of the specific competencies and experience types most likely to set a project manager up for success may be a leading indicator for subsequent project success as well.

Problem statement

The traditional project manager planning types of skills are less likely to contribute to project success than soft skills or overall knowledge of the project, yet there is still continued focus primarily on these "hard skills" when managing projects (Creasy, & Anantatmula, 2013). After many years of failed projects and a continued low rate of project success and many attempts to understand why projects have failed (Rahi & Bourgault, M, 2022), there may be opportunities to investigate how the project manager themselves contribute to this outcome. Studying how the project managers' soft skills and their associated technical knowledge can influence the success of a project may provide a fresh perspective on how we pair up the right project manager with the right project depending on their skill sets and competencies.

Purpose of the study

The purpose of this study is to examine existing literature relating to the project management field as a foundation for gaining further insight into if the capabilities and applicable skill set of the project manager is a contributing factor toward project success. Through thematic analysis of project manager competency types in relation to project success, this study aims to gain insight into which competencies of the project manager have the most significant impact on the outcome of a project.

Research question

RQ1: Is the competency and skill set of a project manager in the specific project focus area a predictor of their ability to lead the project to successful completion?

Research objectives

The findings of this study will uncover the significance of a project manager's skill set outside of the hard project management planning specific skills, such as leadership ability and project area specific knowledge in relation to project success. The goal of this study is to determine if a focus shift from the traditional project success factors of budget, scope and schedule toward project manager soft skills and capability may yield an overall increase in project success rates.

Review of the Literature

The traditional project manager planning types of skills are less likely to be the sole influence on project success, and that a project manager's technical, conceptual, political and human skills more strongly have an impact on the outcome of a project (Elmezain et al., 2021). While age may not be a proven factor influencing project success through research studies, personality traits may be an important factor worth investigating further (Dvir et al., 2006). While having a strong planning foundation is still important, the soft skill aspects of a project manager such as communication, conflict management style, and ability to think creatively are becoming more important and impactful to their ability to manage the team that will ultimately guide the project to successful completion (Creasy & Anantatmula, 2013). Creasy & Anatamula highlight the fact that the project management discipline at large is evolving and becoming more complex, thus outgrowing the sole strong competency of planning, and expanding into additional soft skill areas such as particular personality traits, and stronger technical skills to complement understanding of how to achieve the overall goals and objectives of the project (2013).

Brill et al. (2006)'s study demonstrated that the highest-ranking competencies revolved around contextual items, such as understanding the goals of the project and scope, yet actually understanding the technical field ranked relatively low on the list. However, in more recent years, and most specifically in the context

of Industry 4.0 (the fourth industrial revolution), there's a benefit in having a technical and associated contextual skill set when managing projects (Ribeiro et al, 2021). As organizations evolve, as well as the environment around them, there's increasing recognition of the need for project managers to have some contextual knowledge relating to the overall effort.

According to the literature, several human-specific types of factors are involved with how the project manager themself contributes to the outcome of a project, including, but not limited to the attitude of a project manager, their communications skills, teamwork, adaptability, critical thinking, problem-solving, and even their level of optimism towards the project, even in the lowest of moments. Often thought of as skills that either can't be taught or are more difficult to teach, soft skills are the ones that often push one candidate forward ahead of another in the job market (Rego, 2017). Employers have been found to greatly value communication skills, interpersonal skills, and/or the ability to think critically and or be a strong problem solver (McCale, 2008). These are valued so highly by employers for any role, that it's moving up in importance for project managers specifically as well (Creasy, & Anantatmula, 2013). Soft skills are becoming a requirement for project managers to possess in order to effectively contribute to project successful completion (Gillard, 2009).

Another contributing factor to a project's outcome relates to a project manager's attitude towards their job, and their ability to lead a project to successful completion. A can-do attitude and a generally optimistic project manager can help to build relationships and create an overall high-energy environment for the team (Smith et al, 2011). A highly supported and energized team, led by an optimistic project manager provides the team with a potential abundance of contingency plans in the form of pre-planning to overcome future risks and a project manager who likely promotes celebrations of milestone success for team encouragement and helps tamper overall stress on the team (Smith et al., 2011). A motivated and supported team led by an optimistic project manager may contribute towards an overall successful project outcome.

Project Managers are more than just strong planners, they're now expected to be strong leaders, and studies are now starting to indicate a relationship between a project manager's leadership competencies and the successful outcome of a project (Geoghegan & Dulewicz, 2008). When looking at modern expectations of leaders, whether it be a CIO or otherwise, it's difficult for them to transform an organization without having a basic understanding of technology or the foundation on which the organization operates. Gone are the days of simply managing cost and performance, and now leaders (including project managers) are expected to expand their roles to more transformative responsibilities (Dhasarathy et al., n.d.).

The traditional three success criteria of a project of scope, cost, and schedule are not a complete guide to project success measurement (Serrador & Turner, 2015). Project resilience through two key dimensions of awareness and adaptive capacity (Rahi & Bourgault, 2022) as the project outcome's overall impact on the organization may be contributing factors to a project's ultimate success as well (Guo, 2019). Whether a project affects an organization from a domestic standpoint or international (Taherdoost & Keshavarzsaleh, 2016) and the evolution of project management due to sociological factors such as the covid pandemic (Henkel & Haley, 2020) may also be factors to consider when looking at what's considered project success. Lastly, the types of project management models employed by the project manager when combined with all other project success considerations may have an impact on the overall success definition of a project (Radujković & Sjekavica, 2017).

Methodology

Applicable articles relating to the citations from the literature review have been utilized to perform a qualitative narrative review through a thematic approach. The thematic approach aims to recognize common themes or patterns within the qualitative data (Maguire & Delahunt, 2017). Deductive thematic

analysis was used, which "allowed for" deriving themes based upon theory, or previous perception of what themes will emerge (Nowell et al, 2017). Articles used for this analysis were from within the last 15 to 20 years with minimal usage of articles older than 20 years. Articles were discovered through university-provided GALILEO library resources and Google Scholar, using search phrases such as "project manager skill set", "leadership technology knowledge depth", "project success factors", "project failure factors" and "project manager success". Only peer-reviewed articles or reputable sources such as project management institute publications have been utilized for this analysis.

One hundred plus articles were reviewed, with a selection of thirty of those articles to utilize as contributions to this study. Keyword searches such as "technology projects", "project manager" "project success", "project manager success", "project management success", "project management failure", "project manager soft skills", "project manager competencies", "project manager knowledge", "evolution of project management", "history of project management", "project management success definition", and "technology project management". Themes were derived from the identified articles, which revolved around the types of competencies a project manager may require, whether it be more of a hard skill like knowledge, or a softer skill such as leadership ability, collaboration, teamwork, or problem-solving, and how those types of skills relate to, or contribute towards project success. Through the identification of themes, contributing value statements were derived, and further analyzed as a whole to better understand how the project manager's skill set contributes to the outcome of a project.

Data analysis

Thematic analysis, one of the five qualitative data analysis techniques for research creation, which also include constant comparison analysis, domain analysis, taxonomy analysis and componential analysis (Onwuegbuzie et al., 2012) has been used to search for common themes and analyze the significance of providing new knowledge through the identification of relationships between these themes. Contributions to the thematic narrative review are from applicable articles discovered through the literature review and identified as key candidates for thematic review on the relationship between a project manager's depth of knowledge and the likelihood of them leading a project to successful completion. Emerging themes are detailed in Table 1 with the referenced theme, authors of the contributing article, and a brief summary of the main contribution extrapolated. Several articles cross the boundaries of multiple themes involved in this review, providing valuable contributions to these multiple themes and thus appear multiple times in Table 1.

Table 1: Themes and their main contributions

Theme	Authors (Year)	Main Contribution
1	Papke-Shields, K. E., Beise, C., & Quan, J. (2010)	Project management evolution has seen increasing emphasis on the relationship between adoption standards and promotion of project management standards with overall project performance
1	Grant, K. P., & Pennypacker, J. S. (2006)	In the last five to 10 years, dramatic increases in the adoption of project management have been observed in support of organizational growth and transformation, thus mandating a maturity of the discipline
1	Bauer, B. J., Richardson, T. M., & Marion Jr, J. W. (2014)	The skill set requirements of a project manager have evolved as the overall discipline of project management has matured, requiring a look at both technical and leadership skills in relation to impact on project success
1	Coppi, I., & Akkari, A. C. S. (2021)	The advancements of the digital era have impacted project management by bolstering the need for digital awareness and related knowledge
1	Hansen, L. K., & Svejvig, P. (2022)	Portfolio project management has evolved from static to an understanding of a more complex, ambiguous world, with a willingness and ability to accept change
2	Liikamaa, K. (2015)	Highest rated competencies were noted as Achievement, Drive, Leadership, Conflict Management, and Initiative, which the project manager already strongly possesses, but is also willing to further grow
2	Patanakul, P. (2012)	When managing more than one project at a time, a project manager tended to manage projects together that shared the same technology
2	Davis, S. A. (2011)	Conflict management and problem-solving competencies were found to have a relationship with emotional intelligence and interpersonal competency ratings
2	Vaagaasar, A. L., Müller, R., & De Paoli, D. (2020)	Flexibility in leadership style, stemming from multiple leadership constructs is a component of how a project manager approaches the management of a project
2	Thal Jr, A. E., & Bedingfield, J. D. (2010)	Project management success does appear to be predicted by some components of the project manager's personality/soft skills
2	Maqbool, R., Sudong, Y., Manzoor, N., & Rashid, Y. (2017)	Emotionally intelligent project managers with transformational styles of leadership perform at a higher level than those who aren't, resulting in a positive effect on project success
2	Coppi, I., & Akkari, A. C. S. (2021)	Project managers must possess problem-solving, cooperation, and teamwork skills in relation to the growing complexity of projects
2	Holzmann, V., Zitter, D., & Peshkess, S. (2022)	AI will promote the automation of administrative activities a project manager traditionally performed, thus emphasizing a stronger need for soft skills
3	Liikamaa, K. (2015)	Technical skills must be improved upon by project managers as a contributing factor for motivating teams to deliver despite challenges
3	Müller, R., & Turner, R. (2010)	Performance is linked to a project manager's personality characteristics in relationship to the position
3	Pearce, J. M. (2018)	For leaders in charge organizations, technical competency is of importance
3	Bauer, B. J., Richardson, T. M., & Marion Jr, J. W. (2014)	A positive correlation between an overall successful project and level of technical capability exists, although a somewhat weak correlation, thus suggesting both technical and leadership domains are related to, and important to project success.
3	Willcoxson, L., & Chatham, R. (2006)	Technical leaders tend to be focused on results, meeting deadlines, and providing structure and giving instructions vs a non-technical/general leader who more predominantly has a soft skill type dominated leadership style
3	Bourne, L. (2005)	Accidental project managers use their technical expertise as a foundation when asked to take the leap from individual contributor to project manager and then grow the project management and soft skills

Table 1: Themes and their main contributions (Cont.)

Theme	Authors (Year)	Main Contribution
3	Gerard, M. (2018)	Understanding the underlying technology and being able to effectively communicate about it makes a project manager more effective
3	Coppi, I., & Akkari, A. C. S. (2021)	Project managers must possess or be able to obtain knowledge linked to the new digital emergence
3	Maes, T., Gebhardt, K., & Riel, A. (2022)	Having awareness of project tasks with varying uncertainty levels was impactful on how the project manager made decisions
4	Thal Jr, A. E., & Bedingfield, J. D. (2010)	Perceptions and definitions of project success vary, but are evolving to include much beyond the traditional scope, schedule, and budget measures
4	Iriarte, C., & Bayona, S. (2020)	Technical project success criteria are categorized into seven different areas, two of which are leadership and team, as well as the project management itself
4	Nixon, P., Harrington, M., & Parker, D. (2012)	Project management leadership and strength of the performance is considered a determining factor of the project outcome
4	Castro, M., Barcaui, A., Bahli, B., & Figueiredo, R. (2022)	Project success factors have less often been studied from a project manager behavior aspect, of which has recently been shown to impact project success
4	Moradi, S., Kähkönen, K., & Aaltonen, K. (2020)	One of the top success factors for a project includes the competency of the project manager themselves
4	Havelka, D., Fang, X., & Rajkumar, T. M. (2022)	Projects fail almost exclusively due to human-related factors, which include the project manager's leadership capabilities
4	Mariam, S., Khawaja, K. F., Qaisar, M. N., & Ahmad, F. (2022)	Knowledge-oriented leadership and project success are linked through team cohesion as well as through appreciation and value of the teams' knowledge

Notes: Theme 1 = Changing project management trends over time, Theme 2 = Soft skill and leadership competencies in relation to project success rates, Theme 3 = Technical skill competencies in relation to project success rates, Theme 4 = Factors contributing to project success and/or project failure

Results

Themes

The four themes identified and analyzed have created more clarity around the research question and related topics. In fact, emerging from the analysis of each theme revealed a complementary relationship among the themes holistically. The harmony among the themes helps to gain momentum toward answering the research question, which revolves largely around theme three, the technical skill competencies of a project manager in relation to project success rates.

1. *Changing project management trends over time*

The evolution of project management has increased demand for a wider variety of skill sets of the project manager themselves. As projects become more complex, and organizations rely more on project success for positive business outcomes, the spotlight turns towards formal standards and practices for project execution in the pursuit of project success (Papke-Shields, K. E. et al., 2010). The growth and transformation of an organization rely heavily on successful project completion through increased adoption and maturity of the project management discipline (Grant & Pennypacker, 2006). As project management becomes more critical to organizations looking to gain a competitive edge and further advance into the digital age, there's an additional need for the project manager to have digital awareness (Coppi & Akkari, 2021) as well as stronger leadership and technical skills (Bauer, B. J. et al., 2014). Gone are the days of

simply the basic project management skills meeting organization's expectations as the evolution of overall project management has put more emphasis on additional project management skills and overall accountability toward a successful project outcome (Hansen & Svejvig, 2022).

2. *Soft skill and leadership competencies in relation to project success rates*

Soft skills and leadership competencies are essential for all leaders, including project managers, who are team leaders even if they do not necessarily have direct reports. Successful project outcomes have been shown to have direct ties to the soft skills of the project manager leading the effort (Thal & Bedingfield, 2010). Some of the more strongly rated competencies among project managers included achievement, drive, leadership, conflict management, and initiative, all of which were indicative of contributing to project success. In addition, those project managers who may already possess these types of competencies but had a willingness or recognition they could improve upon these skills also had an indication of higher project success rates (Liikamaa, K. 2015).

Flexibility in the leadership style of the project manager and being able to easily shift gears towards different methods can support adaptability to different needs by project (Vaagaasar, A. L. et al., 2020), thus also potentially contributing to project success. In addition, emotionally intelligent project managers who exhibited transformational leadership capabilities, and able to smoothly adapt to different leadership methods were found to perform at high levels, positively impacting the probability of project success (Maqbool, R. et al., 2017). Tying together soft skills, project success, and emotional intelligence, the soft skills of conflict management and problem-solving were found to have a strong relationship with highly emotionally intelligent people (Davis, S. A. 2011).

As organizations seek solutions from the project management realm to help grow their businesses and gain a competitive advantage, the demand for a more diverse project manager skill set increases. The complexity of projects has made previously optional skills and qualities of a project manager mandatory. Skills that a project manager must now possess in order to successfully lead complex projects include problem-solving abilities, cooperation, and teamwork (Coppi & Akkari, 2021). In support of managing complex projects, if a project manager is required to manage more than one project at a time, they are often more successful if these multiple projects are related to the same technology (Patanakul, P. 2012). In order for project managers to be able to focus even more on the soft skills that are in higher demand as contributors to project success, evolving technologies such as artificial intelligence, are able to replace or automate some of the more standard and administrative tasks and activities that used to be a project manager's primary role (Holzmann, V., 2022).

3. *Technical skill competencies in relation to project success rates*

As a leader of a project, a project manager must not only possess elevated soft skills and strength in leadership abilities but also a core understanding of the tasks at hand in order to drive the project to successful completion. While soft skills are of more recent focus when evaluating the skills of a project manager that contribute to project success, technical skills, which were often of higher focus in the past are still significant when evaluating contributing factors to a successful project outcome. Not only are technical skills essential for leaders in charge or organizations in general or those in charge of project teams (Pearce, J. M. 2018), but those technical skills also have an impact on how teams are motivated to drive a project to successful completion as the leader better understands how to navigate and overcome difficult challenges (Liikamaa, K. 2015). Technical knowledge helps a leader to effectively communicate project deliverables and requirements to the team, thus making them more effective overall as a project leader (Gerard, M. 2018). In addition, a project manager who has the ability to understand the detail around tasks they are asking their teams to perform, and the potential uncertainty that may go with these tasks helps them to make better decisions that may help contribute towards project success (Maes, T. et al., 2022). While team

motivation is important, the motivation of the project manager themselves is also important. Whether a project manager or a people manager, those who have skills or characteristics that match the requirements of the role are more likely to demonstrate stronger performance and are also more likely to remain in the position for a longer period of time (Müller & Turner, 2010).

Technical-minded leaders are likely more focused on driving results, achieving deadlines, giving more specific instructions and tasks, and also providing the technical structure needed to drive a project towards successful completion than a less technical, and more soft skills focused leader (Willcoxson, 2006). While not a strong one, a correlation does exist between project success and the technical capabilities of a project manager. The indication is that both the technical capabilities and leadership skills of a project manager are contributing factors to project success (Bauer, B. J. et al., 2014).

As there is continued digital transformation in business, having a project manager who understands technology and concepts around digital emergence is essential for managing projects (Coppi & Akkari., 2021). This technical understanding can come from "accidental project managers", or what is also known as engineers or people in purely technical roles, who were perhaps part of the execution teams on the project who discover they have a talent or interest in migrating to the project management role (Bourne, L. 2005, p. 3). Project managers who evolve from a technical role, must either possess the ability to learn leadership and soft skills such as communication, collaboration, and teamwork or already have these skills inherently built into their way of operating in order to be successful project managers. The reverse is true for a project manager who comes to the role armed with the leadership and soft skills necessary to execute successfully in the role, but most also now have the ability to gain knowledge in the technical field and apply it as part of their full skill set when managing a project.

4. *Factors contributing to project success and/or project failure*

Measurement of project success and finding the exact recipe for how to achieve this success is complex and something that continues to be studied as organizations seek to understand why projects fail. What has been found, is that almost exclusively, projects fail due to some sort of human component (Havelka, D. et al., 2022) and that one of the top success factors involved with a project revolves around the project manager, and the competencies of that the project manager themselves (Moradi, S. et al., 2020). Indeed, it wasn't until recently that the behavior of the project manager has been more frequently studied, and has been such to be an impactful factor in project success (Castro, M. et al., 2022).

In terms of the skill set of the project manager and the success of the project, there has been a positive relationship found between project success and the type of project manager who had knowledge associated with the project. The synergy of the team helped to strengthen the relationship between project success and having a knowledge-oriented leader (Mariam, S. et al., 2022).

When assessing all types of criteria that may impact the successful outcome of a project, it has evolved over time from just the traditional scope, schedule, and budget factors (Thal & Bedingfield, 2010) and started to look more at technical project success criteria, which is seven different areas, including leadership and team, as well as the project management itself (Iriarte & Bayona, 2020). Lastly, when looking at the successful closure of the project the leadership and strength of project management performance were seen as contributing factors of success (Nixon, P. et al., 2012).

Discussion of findings

Organizations depend on successful project execution and completion to bolster their position in the market and gain a competitive advantage. While there are a multitude of factors that may impact the outcome of a project, the focus of this analysis looked directly at the project manager's skill set, and most specifically if technical knowledge and experience were of significant influence on a successful project outcome. The research question in this study asked if the competency and skill set of a project manager in the specific project focus area is a predictor of their ability to lead the project to successful completion. The thematic analysis resulting from a review of high saturation of articles indicates a clear relationship between project success and the technical skill set, and technical knowledge the project manager possesses. However, the findings in this study also show that having a technical background and understanding of the technical content related to the project is not the only skill set the project manager must have as a contributor to a successful project outcome. Project managers must also demonstrate strength in soft skills, such as leadership capability, collaboration, teamwork, and problem-solving capabilities as strong contributors toward project success as well. Soft skills are so highly valued by employers that it's more frequently becoming a requirement for project managers to possess in order to effectively contribute to project successful completion (Gillard, 2009)

It appears from this study that the combination of both a technical skill set in unison with a strong soft skill capability that a project manager may possess is an indicator of contribution towards project success. This finding takes the previous understanding of stronger emphasis on the mandatory requirement of a strong ability to manage scope, schedule, and budget alone to the next level and indicates there are additional skills in the technical and soft skill realm that are also requirements for a project manager to strongly contribute to project success. The research question posed in this study is supported as true through the thematic analysis performed in this study.

Implication of findings

As organizations seek a deeper understanding of the complexities of factors contributing to project failure, signs point towards the project manager themselves, and the strength of their skill set as a significant influence on project outcomes. Given this knowledge, organizations may put additional scrutiny on the types of project managers they bring into their organizations, and evaluate not just if they can successfully manage scope, schedule, and budget, but also if the project manager is a superb problem solver, team player, highly collaborative with a knack for communications at both the team level and executive level, and also if they have at least a cursory understanding of the technology the team is working to implement with the project. Recruiting efforts may shift to looking for new abilities within an incoming project manager, and there may be an investigation into the types of salaries offered as there is additional responsibility and expectations of project managers to successfully execute projects. In addition, for currently employed project managers, organizations may want to think about investment in training in leadership, communication, and related technical capabilities to build up the necessary skill sets that are now required of project managers to have a well-rounded set of capabilities in their toolbox as they are expected to drive complex technical projects to successful completion.

Conclusion & limitations of the study

Emerging themes from the analysis have indicated there's a strong need for not only technical knowledge and experience of the project manager to successfully lead a project to completion but also strong soft skills

and leadership abilities as well. The conclusion of this analysis is that it's not one single thing that a project manager must possess in their skill set toolbox, but rather a wide array of skills and a combination of competencies that uniquely set a project manager up for success while managing a project. Limitations of this study include the fact that while we know both hard and soft skills are a must for a project manager to possess, it's still unknown what weighting of each is of more importance, or if they're equally important in contributing to the project manager's success in managing projects. Benefits could be gained through further analysis into the balance of technical and soft skills, which may take priority over another when seeking a project manager to lead a project to successful completion. Additional research may also reveal if it's simply that the project manager has some portion of each of the soft and hard skills that make them successful in project management, or if it's specific technical skills or soft skills such as leadership, problem-solving, collaboration, or teamwork that are most critical contributors to project management success.

Due to reliance on existing research and not specific questions asked of individuals in project management real-world scenarios, there are some limitations to this study. While valuable conclusions can be drawn from existing research, we'd recommend further research be done with questionnaires and observations of actual scenarios in organizations to further establish patterns of a project manager's skill sets contribution and effect on project management success or failure.

As learned through this thematic analysis, the skill set of a project manager, particularly in the areas of technical knowledge and soft skills such as leadership, collaboration, teamwork, and problem-solving are influencers on the overall success of the project manager is leading. Organizations can benefit from this insight by changing their recruiting strategies to seek these specific skills when hiring new project managers and also investing in training to upskill their current project manager workforce. The project management discipline and how it can be optimized continues to be a complex and evolving topic, so as the discipline continues to evolve, there can be benefits gained through further research on the contributing factors to project success or failure.

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