INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 14, Issue 12, (2024) E-ISSN: 2222-6990

The Roll-Out of Project Management System to Improve Project Progress Reporting

Khairul Azhar Bin Mortadza[1], Adriana Mohd Rizal[2]

[1]Azman Hashim International Business School, Universiti Teknologi Malaysia, Malaysia,

[2]Federal Land Development Authority

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v14-i12/23615 DOI:10.6007/IJARBSS/v14-i12/23615

Published Date: 19 December 2024

Abstract

The adoption of digitalized Project Management Systems (PMS) is increasingly essential to enhance project progress reporting, a critical aspect for efficient decision-making and operational success in organizations. Traditional project management often relies on manual methods, which lead to issues such as data duplication, miscommunication, and delays, ultimately hindering productivity and real-time project oversight. This conceptual paper explores the transformative role of PMS in addressing these challenges, emphasizing its capacity to standardize and automate project processes for improved reporting accuracy, efficiency, and collaboration. This study employs a literature review methodology, drawing insights from the Technology Acceptance Model (TAM) to analyse the factors influencing PMS adoption in organizational settings. Key findings indicate that digital PMS can significantly enhance project management through real-time data visibility and streamlined communication, thus supporting better strategic decisions and minimizing project risks. However, successful adoption is often impeded by barriers such as cultural resistance, the need for substantial user training, integration complexity, and cybersecurity concerns. Future research is recommended to explore the integration of advanced technologies such as artificial intelligence, Internet of Things (IoT), and big data analytics within PMS. Further studies could also examine industry-specific PMS frameworks and assess long-term impacts on project management efficacy across various sectors. By addressing these areas, organizations can optimize PMS adoption and ensure that digital transformation efforts align with broader strategic objectives, ultimately enhancing project success rates.

Keywords: Project Management Systems, Organizational Efficiency, Digital Transformation, System Adoption

Introduction

In the rapidly evolving landscape of global business, the integration of technology into organizational processes is essential to maintain competitive advantage. Among the various technological integrations, Project Management Systems (PMS) stand out as a critical tool to enhance the efficiency and effectiveness in managing projects across organizations.

Traditional project management methodologies, which often rely heavily on manual processes such as paper-based documentation and spreadsheet tracking, are increasingly insufficient. These methods are prone to errors and inefficiencies that can delay project timelines and inflate costs due to data duplication, miscommunication among stakeholders, and delays in information flow (Kock et al., 2020).

The shift towards digital project management through the adoption of PMS offers a transformative potential for organizations to enhance project progress reporting. This shift supports more accurate and timely data processing and facilitates better strategic decision-making and resource management. Digital PMS platforms can integrate various project management functions, offering real-time tracking, automated reporting, and enhanced communication capabilities that significantly reduce the likelihood of project overruns and potentially improve overall project success rates (Nakayama et al., 2021).

However, the adoption and effective utilization of such systems comes with challenges. Organizations often face several barriers, including cultural resistance to change, the complexity of system integration, the need for substantial training, and significant upfront investment. These challenges can hinder the successful deployment of PMS, unless carefully managed (Vărzaru, 2022). Moreover, the successful implementation of PMS depends not only on the technology itself but also on its acceptance by users. The Technology Acceptance Model (TAM) provide valuable frameworks to understand how perceptions of technology (perceived usefulness and ease of use) impact its adoption and utilization in organizational settings (Stergiou et al., 2023).

The aim of this paper is to review the existing body of literature on the adoption and implementation of Project Management Systems (PMS) within organizations, particularly focusing on how these systems enhance project progress reporting. By analysing a broad range of studies, theoretical models, and industry reports, this paper seeks to provide a comprehensive understanding of the shift from traditional to digital and automated systems that offer real-time visibility, streamlined reporting, and improved decision-making. The literature review will not only explore the potential benefits of PMS adoption, such as increased accuracy, efficiency, and collaboration but also address the challenges organizations face, including resistance to change, the complexity of integration, and the need for substantial training and cybersecurity considerations. This conceptual framework draws from established theories, including the Technology Acceptance Model (TAM) and other relevant organizational change models, to offer strategic and operational insights that can guide organizations as they consider adopting or optimizing PMS. Ultimately, this paper aims to contribute to the existing body of knowledge by synthesizing key findings from previous research and offering a theoretical perspective that supports organizations in navigating the complexities of digital transformation in project management systems (Marnewick & Marnewick, 2022).

Literature Review

Project Management Reporting Practice

Effective project management reporting is pivotal for precise coordination of resources and timelines to track progress and address challenges. Varajao et al. (2022) advocate for a holistic assessment system that goes beyond traditional metrics such as timelines and budgets, to

include both measurable and perceptual elements of success. This approach provides a more comprehensive understanding of project outcomes, capturing insights that traditional benchmarks often miss.

Kock et al (2020) explains how the integration of Project Portfolio Management Information Systems (PPMIS) into project management frameworks significantly enhances real-time monitoring and decision-making capabilities. Such digital transformations in project management reporting enable organizations to adapt more effectively to changes and challenges, ensuring greater project success and organizational agility (Kock et al, 2020).

The influence of Industry 4.0 technologies, as discussed by Kanskia and Pizon (2023), further revolutionizes project management by improving efficiency through the Internet of Things (IoT), artificial intelligence (AI), and big data analytics. These technologies provide deeper operational insights and more precise control over projects, which is critical for strategic decision-making and enhancing project outcomes.

Despite technological advancements, the successful adoption of new project management tools heavily relies on cultural acceptance and stakeholder buy-in. Zahoor et. al (2023) emphasize the interaction between digital literacy and managerial attributes in driving successful digital transformation. An organizational culture that supports innovation and continuous learning is crucial to maximize the benefits of these advanced digital project management systems.

Conventional Project Management Reporting Challenges

The traditional methodologies in project management reporting, grounded in established practices, often fall short in addressing the dynamic needs of modern organizations. Traditional approaches rely heavily on manual data entry and periodic updates, leading to delayed responses to project deviations and hindering proactive project interventions (Chmielarz & Zborowski, 2018). The manual nature of these systems often results in inaccuracies and inefficiencies, creating significant barriers to effective project control and oversight.

The lack of integration with advanced technologies like IoT and real-time data analytics further exacerbates these challenges, preventing managers from accessing timely and accurate project information necessary for effective decision-making (Jain, 2023). This scenario often results in cost overruns, missed deadlines, and non-optimal resource allocation. Additionally, resistance to shift from traditional methods stems from a deeper organizational culture that may not fully embrace digital transformation, affecting stakeholder buy-in and the successful integration of innovative project management solutions (Jain, 2023). Addressing these challenges requires not only the adoption of new technologies but also a shift in organizational mindset and culture to fully embrace these changes (Gomesa & Seruca, 2023). By integrating digital tools that provide real-time data and analytics, organizations can significantly improve their project monitoring and management capabilities, leading to better project outcomes and more efficient use of resources.

Benefit of Digitalization towards Project Management Reporting

The digitalization of project management reporting has revolutionized how organizations handle projects, allowing for more effective tracking, execution, and evaluation. The integration of digital tools not only supports real-time analytics but also enhances the sustainability of innovation performance within firms (Wang et al., 2023). Such platforms facilitate better decision-making by providing continuous feedback loops and enabling swift adjustments, thereby reducing risks and enhancing project outcomes. Moreover, the adoption of Industry 4.0 technologies, including IoT, AI, and big data analytics, has significantly enabling organizations to achieve better outcomes through increased project efficiency and effectiveness (Kanskia & Pizon, 2023).

However, digital transformation also necessitates a shift in organizational culture towards embracing these changes. The digital transformation of workplaces, especially in sectors like finance, requires adjustments not only in technological infrastructure but also in employee mindsets towards their roles and contributions in a digitally enhanced environment (Selimović et al., 2021). This cultural adaptation is crucial as it influences the effectiveness of digital tools in project management.

Additionally, digitalization strategies positively influence innovation performance, especially during crises, suggesting that digital tools are essential for maintaining agility and responsiveness in challenging environments (Crespo et al., 2023). The integration of digital tools into project management reporting systems also necessitates the development of new skills among project management teams. Training in digital literacy, understanding data analytics, and managing integrated digital systems are essential for the workforce to effectively utilize these new tools (Zahoor et al., 2023).

Stakeholders Buy-in and Culture Shift

Securing stakeholder buy-in and managing the cultural shift within organizations are crucial in ensuring successful adoption of digital project management tools. The use of digital tools for stakeholder participation enhances inclusivity and transparency of project management processes, demonstrating practical benefits in communication and decision-making (Toukola & Ahola, 2022). Addressing the micro-foundations of digital transformation, digital literacy, and managerial attributes are important in equipping team members to navigate new systems, emphasizing the importance of training and education (Zahoor et al., 2023).

Additionally, the integration of digital platforms requires respecting the existing organizational ethos while gradually introducing innovations that align with the organization's strategic goals. This approach is essential for a smooth transition to digital systems (Cyfert et al., 2023). Moreover, shifting towards digital tools should be complemented by adopting more holistic assessment systems that consider both measurable and perceptual elements of project success, ensuring evaluations align with the enhanced capabilities provided by digital technologies (Varajao et al., 2022).

Ultimately, the successful digital transformation of project management reporting involves comprehensive change management, requiring thoughtful leadership and strategic planning. This transition is not merely a technological upgrade but a cultural shift that enhances

organizational responsiveness and agility, making firms better equipped to handle the complexities of modern project environments (Gomesa & Seruca, 2023).

Discussion

The literature review conducted highlights the clear advantages of Project Management Systems (PMS) in enhancing project progress reporting through digital transformation. However, the challenges associated with the adoption of PMS reveal the complexity of implementing such systems in organizational settings. While studies like those by Kock et al. (2020) emphasize how PMS improves real-time decision-making and resource management, other researchers, such as Zahoor et al. (2023), stress the cultural barriers to adoption. This reflects the notion that although the technological benefits of PMS are evident, the successful integration of these systems is not guaranteed without addressing organizational readiness and resistance to change.

A critical contrast exists between studies that focus primarily on the technological efficiency of PMS and those that examine the human factors influencing its adoption. For instance, Kanski and Pizon (2023) argue that Industry 4.0 technologies, such as IoT and AI, are revolutionizing project management by offering deeper insights and improving efficiency. However, other researchers, including Jain (2023), note that many organizations are unable to fully leverage these technologies due to insufficient digital literacy and managerial support. This divergence suggests that while digital tools provide significant enhancements, their effectiveness relies heavily on an organization's ability to embrace and adapt to these technologies. The literature thus underscores that technological advancements alone are not sufficient without a complementary cultural shift in organizations.

Additionally, the role of stakeholder engagement in the successful adoption of PMS has been emphasized across several studies. Digital tools like PMS can improve communication and transparency, potentially leading to better project outcomes (Toukola & Ahola, 2022). However, this benefit depends on the willingness and readiness of stakeholders to integrate these tools into their workflows. Cyfert et al. (2023) highlight that organizations fostering a culture of continuous learning and innovation are more likely to succeed with PMS implementation, in contrast to those struggling with rigid structures and resistance to change. This suggests that stakeholder buy-in, cultural adaptability, and leadership support are critical to realizing the full benefits of digital project management tools.

The reviewed literature points to the need for a holistic approach to PMS adoption, that emphasizes the technological aspects but also integrates the organizational and cultural dimensions. The gap in understanding how PMS can be tailored to fit different organizational contexts highlights an area for future research, particularly in examining long-term impacts across various industries. Ultimately, while PMS holds great potential to transform project management practices, successful implementation hinges on addressing both the technical and human factors involved.

Theoretical Framework

The theoretical foundation of the relevant past studies in this area often integrates the Technology Acceptance Model (TAM) in their studies and further elaborates on the influences of advanced technological interventions and organizational dynamics. At the core of TAM,

user acceptance is significantly shaped by Perceived Usefulness and Perceived Ease of Use of the technology (Davis, 1989). These constructs are pivotal in understanding the readiness and willingness of organizational members to adopt and efficiently use PMS. The digitalization of project management practice has been shown to enhance the quality of project management processes, underscoring the importance of these systems in achieving project portfolio success (Kock et al., 2020).

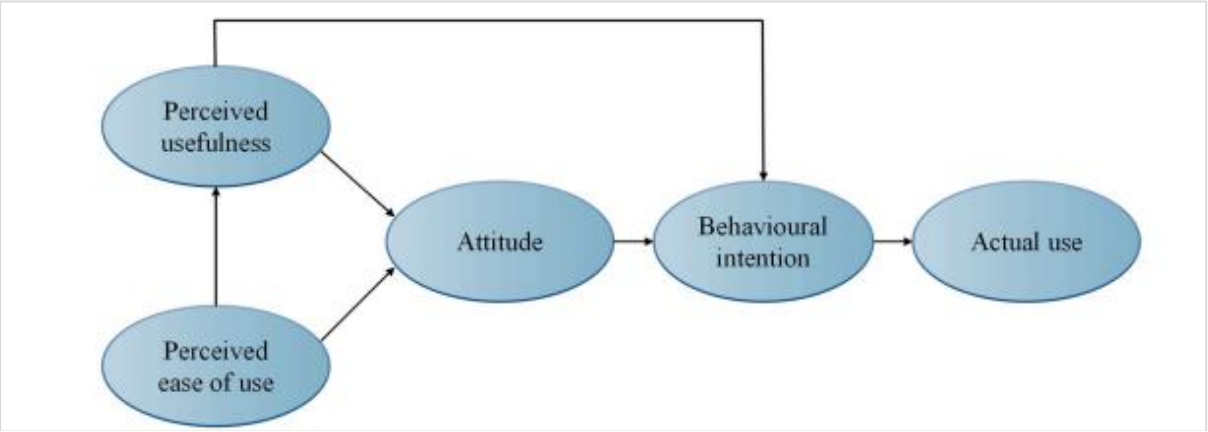

Figure 1: Technology Acceptance Model (Davis,1989)

Further extending the TAM, the additional dimensions such as Job Relevance and Output Quality have been identified as critical in the acceptance and success of information systems within organizational settings. For instance, Varajão et. al, (2022) emphasized the need for a holistic assessment system that includes both measurable and perceptual success elements, advocating for a more comprehensive approach to evaluate project outcomes. Similarly, the integration of Industry 4.0 technologies like IoT, AI, and big data analytics has transformed project management by improving efficiency and enabling better project outcomes, suggesting a significant overlap with perceived usefulness (Kanski & Pizon, 2023).

The successful deployment of PMS also depends on the organization's technological readiness and the cultural dynamics that support or resist change. Organizational culture that encourages adaptability, ongoing learning, and openness to innovation is crucial for digital transformations (Marnewick & Marnewick, 2022). Additionally, the alignment of PMS with strategic business goals and existing systems plays a crucial role in their successful adoption (Cyfert et al., 2023). For instance, Gomesa & Seruca (2023) highlighted the impacts of using digital tools on project reporting and monitoring, indicating that digital readiness not only involves technological adoption but also a significant shift in how project data is perceived and utilized across the organization.

This framework, therefore, provides a robust base to explore the impacts of PMS in organizational settings, emphasizing the interplay between technology acceptance, organizational readiness, and the broader cultural context which can either facilitate or hinder the effective integration of innovative project management solutions. Understanding these dynamics is essential to overcome barriers on PMS adoption and maximizing the benefits of digital advancements in project management.

Conclusion and Future Studies

This paper explains the transformative impact of Project Management Systems (PMS) to enhance project progress reporting within organizations, marking a significant shift towards increased efficiency, accuracy, and strategic decision-making capabilities. Despite the advantages, the adoption of such systems involves challenges including cultural resistance, the need for substantial training, integration complexities, and significant upfront investments. The successful implementation of PMS not only depend on technological aspects but also on robust user acceptance. Additionally, organizational culture, readiness for digital transformation, and alignment with strategic business goals play critical roles in determining the success of PMS implementations, underscoring the multifaceted nature of integrating new technologies in organizational settings.

Looking ahead, future research could explore longitudinal user acceptance and adaptation to these systems, how PMS impacts different industries, and the specific challenges and benefits of PMS in supporting remote work dynamics. Furthermore, studies could investigate the integration of advanced technologies like IoT, AI, and big data analytics within PMS to enhance project management further. Additionally, as reliance on digital systems increases, so does the risk of cyber threats, thus research into developing advanced security protocols to protect sensitive project data within PMS would be beneficial. By continuing to address these areas, future studies can provide deeper insights into optimizing PMS adoption and functionality, helping organizations to navigate the complexities of digital transformation more effectively and enhance their overall project management effectiveness.

Finally, there is a growing need for a more tailored approach to PMS integration across industries, considering the unique challenges faced by different sectors. The adaptability of PMS to various organizational structures, from small businesses to large enterprises, must be explored further. This could involve developing industry-specific PMS frameworks that address unique operational challenges, compliance requirements, and workforce dynamics. By doing so, organizations can not only improve project outcomes but also ensure that PMS adoption aligns closely with their broader strategic objectives, leading to more sustainable digital transformation efforts.

References

Marnewick, C., & Marnewick, A. L. (2022). Digitalization of project management: Opportunities in research and practice. *Project Leadership and Society*, *3*, 100061. sciencedirect. https://doi.org/10.1016/j.plas.2022.100061

Ngereja, B. J., & Hussein, B. (2022). Employee learning in the digitalization context: An evaluation from team members' and project managers' perspectives. *Procedia Computer Science*, *196*, 902–909. https://doi.org/10.1016/j.procs.2021.12.091

Kock, A., Schulz, B., Kopmann, J., & Gemünden, H. G. (2020). Project portfolio management information systems' positive influence on performance – the importance of process maturity. *International Journal of Project Management*, *38*(4), 229–241. https://doi.org/10.1016/j.ijproman.2020.05.001

Edo, O., Ang, D., Etu, E., Tenebe, I., Edo, S., Diekola, O. (2023). Why do healthcare workers adopt digital health technologies - A cross-sectional study integrating the TAM and UTAUT model in a developing economy. *International Journal of Information Management Data Insights 3 (2023) 100186.* https://doi.org/10.1016/j.jjimei.2023.100186

Balakrishnan, J., Abed, S. S., & Jones, P. (2022). The role of meta-UTAUT factors, perceived anthropomorphism, perceived intelligence, and social self-efficacy in chatbot-based services? *Technological Forecasting and Social Change*, *180*, 121692. https://doi.org/10.1016/j.techfore.2022.121692

Rabe, M., Kilic, E. (2023). Towards a paradigm shift in vehicle project management: From a traditional multi-project-management to an integrated process-based digital approach. *Procedia Computer Science 219 (2023) 362–369.* https://creativecommons.org/licenses/by-nc-nd/4.0

Nakayama, M., Hustad, E., & Sutcliffe, N. (2021). Agility and system documentation in large-scale enterprise system projects: a knowledge management perspective. *Procedia Computer Science*, *181*, 386–393. https://doi.org/10.1016/j.procs.2021.01.181

Desai, N. V., Yadav, N. B., & Malaviya, N. N. (2022). Increasing the potential application of Microsoft project and Primavera P6 for project management: A comparative analysis of the residential project. *Materials Today: Proceedings*. https://doi.org/10.1016/j.matpr.2022.11.485

Toukola, S., & Ahola, T. (2022). Digital tools for stakeholder participation in urban development projects. *Project Leadership and Society*, 100053. https://doi.org/10.1016/j.plas.2022.100053

Vărzaru, A. A. (2022). An Empirical Framework for Assessing the Digital Technologies Users' Acceptance in Project Management. *Electronics*, *11*(23), 3872. https://doi.org/10.3390/electronics11233872

Varajão, J., Lourenço, J. C., & Gomes, J. (2022). Models and methods for information systems project success evaluation – A review and directions for research. Heliyon, 8(12), e11977. https://doi.org/10.1016/j.heliyon.2022.e11977

Kanski, L., & Pizon, J. (2023). The impact of selected components of industry 4.0 on project management. *Journal of Innovation & Knowledge*, *8*(1), 100336. https://doi.org/10.1016/j.jik.2023.100336

Hickey, B., Gachon, D. C., & Cosgrove, D. J. (2023). Digital Twin – A Tool for Project Management in Manufacturing. *Procedia Computer Science*, *217*, 720–727. https://doi.org/10.1016/j.procs.2022.12.268

Chwiłkowska-Kubala, A., Cyfert, S., Malewska, K., Mierzejewska, K., Szumowski, W. (2023). The impact of resources on digital transformation in energy sector companies. *The role of readiness for digital transformation, Technology in Society (2023)*, doi: https://doi.org/10.1016/j.techsoc.2023.102315.

Zahoor, N., Zopiatis, A., Adomako, S., & Lamprinakos, G. (2023). The micro-foundations of digitally transforming SMEs: How digital literacy and technology interact with managerial attributes. *Journal of Business Research*, *159*, 113755. https://doi.org/10.1016/j.jbusres.2023.113755

Toukola, S., & Ahola, T. (2022). Digital tools for stakeholder participation in urban development projects. *Project Leadership and Society*, 100053. https://doi.org/10.1016/j.plas.2022.100053

Selimović, J. (2021). Digital workplace transformation in the financial service sector: Investigating the relationship between employees' expectations and intentions. *Technology in Society*, *66*, 101640. https://doi.org/10.1016/j.techsoc.2021.101640

Wong, L. H. M., Hurbean, L., Davison, R. M., Ou, C. X., & Muntean, M. (2022). Working around inadequate information systems in the workplace: An empirical study in Romania. *International Journal of Information Management*, *64*, 102471. https://doi.org/10.1016/j.ijinfomgt.2022.102471

Waszkiewicz, M., & Gumienny, K. (2021). Benefits of using IT systems in multi-sector projects: a case study of the Polish construction industry. *Procedia Computer Science*, *192*, 4269–4278. https://doi.org/10.1016/j.procs.2021.09.203

Stergiou, G., Kavakli, E., & Kotis, K. (2023). Towards a technology acceptance methodology for Industry 4.0. *Procedia Computer Science*, *219*, 832–839. https://doi.org/10.1016/j.procs.2023.01.357

Keane, R., Cormican, K., & Flynn, P. (2019). User acceptance of mandated technology: An analysis of the role of moderating factors. *Procedia Computer Science*, *164*, 72–78. https://doi.org/10.1016/j.procs.2019.12.156

Ronaghi, M. H., & Forouharfar, A. (2020). A contextualized study of the usage of the Internet of things (IoTs) in smart farming in a typical Middle Eastern country within the context of Unified Theory of Acceptance and Use of Technology model (UTAUT). *Technology in Society*, *63*, 101415. https://doi.org/10.1016/j.techsoc.2020.101415

Baby, A., & Kannammal, A. (2019). Network Path Analysis for developing an enhanced TAM model: A user-centric e-learning perspective. Computers in Human Behavior, 106081. https://doi.org/10.1016/j.chb.2019.07.024

Wang, N., Wan, J., Ma, Z., Chen, J. (2023). How digital platform capabilities improve sustainable innovation performance of firms: The mediating role of open innovation. *Journal of Business Research 167 (2023) 114080.* https://doi.org/10.1016/j.jbusres.2023.114080

Konuk, H., Ataman, G., Kambur, E. (2023). The effect of digitalized workplace on employees' psychological well-being: Digital Taylorism approach. *Technology in Society 74 (2023) 102302. https://doi.org/10.1016/j.techsoc.2023.102302*

Afridi, K., Ali, J., Zaufishan, B., Rosak-Szyroka, J. (2023). Impact of digital communications on project efficiency through ease of use and top management support. *Heliyon 9 (2023) e17941.* https://doi.org/10.1016/j.heliyon.2023.e17941

Jain, H. (2023). An approach for real time management of global manufacturing enterprises based on Digital Data Stream. *Procedia Computer Science 219 (2023) 1075–1080.* https://creativecommons.org/licenses/by-nc-nd/4.0

Chmielarza, W., Zborowskib, M. (2018). Determinants of Using Project Management in the Implementation. *Procedia Computer Science 126 (2018) 1224–1236*. 10.1016/j.procs.2018.08.064

Gomesa, M., Seruca, I. (2023). The perception of the management and lower-level employees of the impacts of using Robotic Process Automation: the case of a shared services company. *Procedia Computer Science 219 (2023) 129–138.* 10.1016/j.procs.2023.01.273

Tomov, L. (2022). Antifragile Project Management: The Deming paradigm and beyond. Procedia Computer Science, 201, 632–638. https://doi.org/10.1016/j.procs.2022.03.083

Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. International Journal of Information Management, 63(4), 102466. Sciencedirect. https://doi.org/10.1016/j.ijinfomgt.2021.102466

Cheng, Q., Liu, Y., Peng, C., He, X., Qu, Z., & Dong, Q. (2023). Knowledge digitization: Characteristics, knowledge advantage and innovation performance. *Journal of Business Research*, *163*, 113915–113915. https://doi.org/10.1016/j.jbusres.2023.113915

Matos, P., Romão, M., Sarmento, J., & Abaladas, A. (2019). The adoption of project management methodologies and tools by NGDOs: A mixed methods perspective. *Journal of Business Research*, *101*, 651–659. https://doi.org/10.1016/j.jbusres.2019.01.067