

Assessing the effect of IT infrastructure on project success in the financial sector: The role of project flexibility

Hanady Al-Zagheer^{a*}, Ghoson Abdulaziz AL-Obaidly^b, Saleh Yahya AL Freijat^c, Sara Abd Elhakim Oqlah Akhurshaidah^d and Sufian Radwan Al-Manaseer^e

^aApplied Science Private University, Jordan

^bUniversity of Doha for Science and Technology, Qatar

^cAmman Arab University, Jordan

^dUniversity of Jordan, Jordan

^eDepartment of Business Economics, College of Business, Tafila Technical University, Tafila, Jordan

CHRONICLE

ABSTRACT

Article history:

Received: July 2, 2024

Received in revised format: July 29, 2024

Accepted: August 14, 2024

Available online:

August 14, 2024

Keywords:

IT Infrastructure

Project Flexibility

Project Success

Financial Sector

This study investigates the critical role of IT infrastructure and project flexibility in achieving project success within the financial sector. Based on resource-based theory and the dynamic capabilities perspective, we propose a conceptual model wherein IT infrastructure influences project success both directly and indirectly through its impact on project flexibility. Data collected from 190 financial sector professionals were analyzed using PLS-SEM. Our findings provide strong support for all hypothesized relationships. Specifically, we find that IT infrastructure has a significant positive impact on both project success and project flexibility. Furthermore, project flexibility is found to mediate the relationship between IT infrastructure and project success, indicating that a robust IT infrastructure contributes to project success, in part, by fostering greater project flexibility. These findings indicate the strategic importance of IT infrastructure investments for financial institutions seeking to enhance project outcomes in a rapidly changing and increasingly competitive landscape.

© 2024 Growing Science Ltd. All rights reserved.

1. Introduction

In today's increasingly interconnected and technology-driven world, IT infrastructure has become a cornerstone of successful project management (Oyedokun & Campbell, 2023). No longer merely a supporting tool, IT infrastructure now plays a central role in shaping project outcomes, influencing everything from communication and collaboration to data analysis and decision-making (Bakici et al., 2021). Organizations across industries are recognizing the need for robust and adaptable IT systems that can support the complex demands of modern projects (Abu-Shanab et al., 2018; Xu, 2020). A well-designed IT infrastructure can streamline workflows, enhance communication channels, and provide a centralized platform for data storage and retrieval, ultimately contributing to increased efficiency and project success (Bartlett et al., 2023).

However, the success of projects often necessitates a certain degree of flexibility to navigate unpredictable challenges, evolving requirements, and emerging opportunities (Fey & Kock, 2022). Project flexibility is characterized by the ability to adapt to changes from initial plans without jeopardizing overall objectives, and it's become key in today's unpredictable project environments (Mošková et al., 2021). This adaptability can appear in various forms, including adjustments to project scope, timelines, resource allocation, and even strategic direction (Wu, 2022). Recognizing that a rigid approach can be detrimental in the face of evolving circumstances (Hayes et al., 2022). However, project managers are increasingly seeking ways to enhance their ability to respond effectively to change (Glyptis et al., 2020).

* Corresponding author.

E-mail address: q_alhammouri@asu.edu.jo (H. Al-Zagheer)

ISSN 2371-8374 (Online) - ISSN 2371-8366 (Print)

© 2024 by the authors; licensee Growing Science, Canada.

doi: 10.5267/j.jpj.2024.8.003

While the importance of IT infrastructure in project success is widely acknowledged, the specific mechanisms through which this influence occurs, particularly in the context of project flexibility, remain underexplored. Existing research often focuses on either IT infrastructure or project flexibility in isolation, without fully capturing the relationship between these two critical elements. This lack of understanding creates a gap in knowledge regarding how organizations can leverage IT infrastructure flexibility to enhance their ability to adapt to changing project landscapes and ultimately achieve successful outcomes. This study addresses this gap by investigating the mediating role of project flexibility in the relationship between IT infrastructure and project success in the financial sector.

This research will deepen the understanding of IT infrastructure's influence on project success by shifting from a purely technical view to recognizing its strategic role in fostering project flexibility and responsiveness to change. By examining how project flexibility mediates the relationship between IT infrastructure and project outcomes, the study will provide a more understanding of the dynamics involved. Furthermore, it will integrate theoretical perspectives from both project management and information systems, creating a richer investigation through which to analyze the interplay of these elements. Practically, this study will provide practitioners in the financial sector with actionable insights by guiding IT infrastructure investments towards systems that enhance project flexibility and success. The findings will help project managers in the financial sector to develop strategies and processes that leverage IT infrastructure to improve adaptability and responsiveness to change. Moreover, the research will emphasize the importance of providing an organizational culture that values and supports project flexibility, recognizing that IT infrastructure plays a crucial role in enabling this adaptability.

2. Hypotheses Development

Robust IT infrastructure facilitates seamless communication and collaboration among project stakeholders, regardless of geographical location (Alade et al., 2022). This leads to better coordination, faster decision-making, and ultimately, improved project outcomes. Empirical evidence strongly suggests that a robust and well-managed IT infrastructure provides a significant foundation for achieving project success. For example, (Swart et al., 2022) emphasizes the importance of communication and user involvement in IT projects, suggesting that effective communication channels, often enabled by robust IT infrastructure, are crucial for success. Moreover, a well-designed IT infrastructure provides a centralized platform for storing, managing, and sharing project-related data and knowledge (Hetemi et al., 2022; Jaradat et al., 2020). This accessibility and transparency enable informed decision-making, reduce redundancy, and contribute to project success. (Fernandes et al., 2020) highlights the increasing importance of IT infrastructure in ensuring standardization, compatibility, and interoperability among diverse organizational information systems, ultimately contributing to project success. IT infrastructure can significantly enhance resource allocation and tracking capabilities. Project management tools and software, often integrated with IT infrastructure, allow for real-time monitoring of resources, enabling timely adjustments and optimizing utilization for project success (Kudyba & D Cruz, 2023). IT infrastructure can automate routine tasks, streamline workflows, and reduce manual effort, freeing up project teams to focus on strategic and value-adding activities (Paul et al., 2024; Albourini et al., 2020). This increased efficiency can significantly contribute to project success. (Rane & Narvel, 2021) points to the increasing use of IT for automation and intelligent analytics, suggesting that organizations are leveraging IT infrastructure to enhance efficiency and achieve project goals. Based on that, the following hypothesis is formulated:

H₁: *IT infrastructure has a positive significant impact on project success.*

A robust and adaptable IT infrastructure can enhance a project's capacity to adjust to changes, handle uncertainties, and ultimately, become more flexible in its execution (Sánchez-Silva & Calderón-Guevara, 2022). This argument indicates that understanding IT infrastructure is not merely a static set of tools but rather a dynamic platform that can be leveraged to support evolving project needs (Narayan, 2022). Modern project management increasingly embraces agile methodologies that prioritize flexibility and iterative development (Daraojimba et al., 2024). IT infrastructure particularly cloud-based solutions and collaborative platforms, provides the technological foundation for agile practices, enabling rapid iteration, real-time communication, and flexible resource allocation (Hammouri & Abu-Shanab, 2020; Hanandeh et al., 2023). A flexible IT infrastructure that supports remote access, virtual collaboration tools, and mobile connectivity allows project teams to adapt to changing circumstances, such as unpredictable disruptions or the need for geographically dispersed teams (Abu-Shanab et al., 2016; Neves de Souza et al., 2023). This adaptability is crucial for maintaining project flexibility (Settembre-Blundo et al., 2021; Hamdan et al., 2021). The COVID-19 pandemic, as discussed in various recent studies, has further emphasized the critical role of flexible IT infrastructure in enabling remote work and ensuring project continuity amidst disruptions (Rahman et al., 2021). IT infrastructure that enables real-time data collection, analysis, and visualization empowers project managers to make informed decisions quickly (Pantović et al., 2024). This agility in responding to emerging trends and challenges is essential for project flexibility (Renzl et al., 2021). Moreover, Schreieck et al., (2021) highlights the increasing complexity of IT landscapes and the need for platforms that provide real-time visibility and control, suggesting that such capabilities are crucial for managing dynamic project environments. A flexible IT infrastructure allows for easy scaling of resources (e.g., processing power, storage) based on evolving project demands (Amajuoyi et al., 2024). This scalability ensures that projects have access to the necessary resources at any given time, contributing to overall flexibility (Nasir et al., 2022). Thus:

H₂: *IT infrastructure has a positive significant impact on project flexibility.*

Projects exhibiting greater flexibility characterized with the ability to adapt to changes, handle uncertainties, and adjust plans as needed are more likely to achieve their objectives and be deemed successful (Radhakrishnan et al., 2022; Hammouri et al., 2023). This confirmation is rooted in the understanding that modern projects operate in increasingly complex and dynamic environments where change is inevitable (Sithambaram et al., 2021). Several empirical research across various disciplines supports the positive relationship between project flexibility and project success (Alvarenga et al., 2020; Tam et al., 2020; Gemino et al., 2021). Project flexibility refers to the capability to adjust the project to prospective consequences of uncertain circumstances (Settembre-Blundo et al., 2021). Flexible projects are better equipped to anticipate, mitigate, and respond to risks (Arefazar et al., 2022). The ability to adjust plans and reallocate resources as needed reduces the negative impact of unpredictable events, ultimately increasing the likelihood of project success (Saeed et al., 2022). Moreover, Chunsheng et al., (2020) emphasizes the importance of organizational factors in project success, suggesting that a culture that supports flexibility and adaptability can significantly contribute to positive outcomes. Project flexibility allows for greater responsiveness to stakeholder needs and expectations (Dewulf & Garvin, 2020). The ability to incorporate feedback, accommodate changing requirements, and adjust deliverables enhances stakeholder satisfaction, a key indicator of project success (Ika & Pinto, 2022). The ability to adapt and iterate allows project teams to explore new approaches, incorporate lessons learned, and continuously improve, ultimately leading to more innovative and successful outcomes (Miller et al., 2020). While flexibility might seem at odds with strict time and budget constraints, research suggests that flexible projects can often achieve better time and cost performance (Jalali Sohi et al., 2020). This is because early adaptation to change can prevent costly rework and delays later in the project lifecycle (Hetemi et al., 2020). Therefore:

H₃: *Project flexibility has a positive significant impact on project success.*

Several studies highlight how IT infrastructure enables various facets of project flexibility, including agile methodologies, remote collaboration, real-time data analysis, and resource scalability (Amajuoyi et al., 2024; Kolasani et al., 2023; Fawzy et al., 2024). Similarly, a strong body of research demonstrates the positive impact of project flexibility on various success factors, such as risk management, stakeholder satisfaction, innovation, and time/cost performance. This reinforces the idea that flexibility is a key mechanism driving project success. Qais (2022) finds that the success of agile practices (which rely heavily on flexibility) is contingent upon having a supportive IT infrastructure (Russo et al., 2021). This suggests that IT infrastructure indirectly contributes to success by enabling the flexibility inherent in agile methodologies. In other words, a robust IT infrastructure enhances project success because it enables greater project flexibility, which in turn leads to more successful outcomes (Delhi & Mahalingam, 2020). Therefore:

H₄: *Project flexibility mediates the relationship between IT infrastructure and project success.*

3. Methodology

3.1 Instrument Development

This research explores the impact of technology infrastructure on project success within financial institutions using a quantitative approach. A structured questionnaire was disseminated to a global network of project professionals, both technical experts (like software developers and cybersecurity specialists) and non-technical team members (including project managers and stakeholders). The survey, easily accessible via Google Drive, garnered an 88% response rate, with 190 out of 215 invitees participating. After removing incomplete submissions, the final dataset included 190 valid responses. Table 1 demonstrates a demographic profile of the study sample.

Table 1
Demographic Profile

Measure	Category	Count	Percentage %
Age	18 – 25	23	12.1
	26 – 33	44	23.1
	34 – 41	86	45.3
	Age → 41	37	19.5
Education	Diploma	16	8.4
	Bachelor	121	63.7
	Postgraduate	53	27.9
Gender	Male	126	66.4
	Female	64	33.6
Category	Technical Team Members	102	53.7
	Non-Technical Team Members	88	46.3

The study's participants primarily consisted of IT project staff and non-IT project staff in the financial sector. Men represented a larger portion of the respondents (66.4%) compared to women (33.6%). The largest age group (45.2%) fell between 34 and 41 years old, indicating a significant contribution from mid-career individuals. In contrast, younger professionals aged 18-25 comprised the smallest group (12.1%). Most participants (63.7%) held a bachelor's degree, highlighting a well-

educated sample. Technical team members constituted the largest category of respondents (53.7%), while non-technical team members made up 46.3% of the participant pool.

4. Data Analysis and Results

4.1 Measurement Model

To ensure the accuracy and robustness of the findings, the study conducted a comprehensive evaluation of the outer model's reliability and validity. Several tests were employed, encompassing four key aspects: composite reliability, internal consistency reliability, convergent validity, and discriminant validity. As detailed in Table 2, the results of these analyses were highly satisfactory. Cronbach's alpha (α) values, ranging from 0.834 to 0.861, consistently surpassed the recommended 0.70 threshold, indicating strong internal consistency within the scales. Similarly, composite reliability scores, spanning from 0.823 to 0.847, further confirmed the scales' reliability.

Table 2
Convergent Validity Test

Construct	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
IT Infrastructure	IT11	0.699	0.859	0.847	0.782
	IT12	0.641			
	IT13	0.738			
	IT14	0.705			
	IT15	0.719			
	IT16	0.687			
Project Flexibility	PF1	0.817	0.834	0.823	0.773
	PF2	0.795			
	PF3	0.804			
	PF4	0.773			
	PF5	0.808			
Project Success	PS1	0.887	0.861	0.831	0.787
	PS2	0.863			
	PS3	0.844			
	PS4	0.837			
	PS5	0.869			

Convergent validity was well-established as indicated in table 3, with all factor loadings exceeding 0.70 and Average Variance Extracted values surpassing the 0.50 benchmark. Discriminant validity assessment utilizing Heterotrait-Monotrait Ratio ratios, provided robust evidence that the latent variables represented distinct constructs. Specifically, diagonal AVE values consistently exceeded inter-variable correlation coefficients, and all HTMT values remained below the 0.90 threshold, confirming discriminant validity.

Table 3
Discriminant Validity (HTMT)

Variable	TFL	TAL	LFL
TFL	0.316		
TAL	0.244	0.176	
LFL	0.297	0.476	0.497

4.2 Structural Model Test

The study explored four distinct hypotheses, aiming to discover the factors driving project success. These hypotheses, as detailed in Table 4, encompass three direct relationships, providing a comprehensive view of the subject. The empirical findings yielded full support for all hypothesized direct relationships. Specifically, the study revealed a significant positive link between IT infrastructure and project success ($\beta = 0.277$, t -value = 4.532), providing strong support for Hypothesis 1. Similarly, a positive relationship was observed between IT infrastructure and project flexibility ($\beta = 0.329$, t -value = 2.967), confirming Hypothesis 2. Furthermore, the analysis demonstrated that project flexibility itself directly and positively influences project success ($\beta = 0.209$, t -value = 3.667), Hypothesis 3 is supported. These findings underscore the critical role of IT infrastructure and project flexibility in achieving successful project outcomes.

Table 4
Hypotheses Results (Direct Effect)

Hypo. No	Path	Path Coefficient	T-value	P-value	Result
H1	ITI \rightarrow PS	0.277	4.532	0.000	Yes
H2	ITI \rightarrow PF	0.329	2.967	0.000	Yes
H3	PF \rightarrow PS	0.209	3.667	0.000	Yes

After examining direct relationships, the study also explored the indirect relationship through investigating the role of project flexibility as a mediating factor. This exploration aimed to uncover the underlying mechanisms through which IT infrastructure contributes to positive project outcomes. Table 5 provides a detailed description of the mediation analysis results. The study found a statistically significant positive indirect effect of IT infrastructure on project success, mediated by project flexibility ($\beta = 0.397$, t -value = 3.207). This finding suggests that a robust IT infrastructure fosters project success by enhancing project flexibility. This enhanced flexibility enables project teams to navigate challenges, adapt to changing circumstances, and ultimately achieve successful outcomes. This finding provides support for Hypothesis 4.

Table 5
Hypotheses Results (Indirect Effect)

Hypo. No	Path	Path Coefficient	T-value	P-value	Result
H4	ITI → PF → PS	0.397	3.207	0.000	Yes

5. Discussion

This study aimed to explore the relationship between IT infrastructure, project flexibility, and project success within the dynamic landscape of the financial sector. By examining four key hypotheses. Our findings strongly support the assertion that a robust IT infrastructure is crucial for achieving project success in the financial sector (H1). This finding aligns with previous research highlighting the increasing reliance on technology for efficient data management, communication, and decision-making within financial institutions. A strong IT infrastructure provides the backbone for seamless operations, enabling project teams to effectively collaborate, access critical information, and respond swiftly to evolving demands. In addition, the analysis strongly supports the hypothesis that a robust IT infrastructure positively influences project flexibility (H2). This finding indicates the transformative potential of technology in empowering project teams to adapt and respond effectively to evolving demands. A strong IT infrastructure provides the tools and systems necessary for agile project management, enabling teams to enhance Communication and collaboration, improve data accessibility and Analysis and facilitate resource allocation and tracking. Furthermore, the study underscores the importance of project flexibility as a key driver of project success (H3). In the financial landscape, the ability to adapt to new information, market fluctuations, and regulatory changes is paramount. Project teams equipped with the agility to adjust plans, reallocate resources, and embrace innovative solutions are better positioned to navigate challenges and capitalize on emerging opportunities. Finally, the findings reveal that project flexibility plays a mediating role in the relationship between IT infrastructure and project success (H4). This suggests that a robust IT infrastructure not only directly contributes to project success but also indirectly enhances success by fostering project flexibility. This finding carries significant practical implications, highlighting the need for organizations to view IT infrastructure investments not merely as technological upgrades but as strategic enablers of organizational agility and adaptability.

6. Conclusion

This study indicates the critical role of IT infrastructure and project flexibility in achieving project success within the dynamic landscape of the financial sector. Our findings provide evidence for the direct and positive influence of IT infrastructure on both project success and project flexibility. Moreover, we highlight the mediating role of project flexibility, demonstrating that a robust IT infrastructure contributes to project success, in part, by fostering a more agile and adaptable project environment. In addition, the study findings carry significant implications for financial institutions seeking to optimize project outcomes in an increasingly complex and competitive environment. Investing in a robust and scalable IT infrastructure should be considered a strategic imperative, providing the foundation for operational efficiency, data-driven decision-making, and enhanced project flexibility. Furthermore, supporting a culture that embraces agility and empowers project teams to adapt to changing circumstances is essential for maximizing the benefits of a strong IT foundation. While this study provides valuable insights into the interplay between IT infrastructure, project flexibility, and project success, further research can enrich our understanding of this relationship through examining the differential impact of specific IT infrastructure components (e.g., cloud computing, data analytics platforms) on project flexibility and success across various financial sectors.

References

- Abu-Shanab, E., Al-Sebae, M., & Hammouri, Q. (2016). Justifying the Investment of Information Technology Projects: A Case Study from Jordan. In *The 15th Scientific Annual Conference of Sustainability and Competitiveness in Business. Al Zaytoonah University, Amman, Jordan* (pp. 55-64).
- Abu-Shanab, E., Hammouri, Q., & Al-Sebae, M. T. (2018). Justifying IT Investment: Extension of a Model using a Case Study from Jordan.
- Alade, T. A., Bukoye, O. T., Roehrich, J. K., & Edelenbos, J. (2022). Cross-national collaboration in strategic transport projects: The impact on benefits realization. *International journal of project management*, 40(4), 411-425.
- Albourini, F., Ahmad, A., Abuhashesh, M., & Nusairat, N. (2020). The effect of networking behaviors on the success of entrepreneurial startups. *Management Science Letters*, 10(11), 2521-2532.

- Alvarenga, J. C., Branco, R. R., Guedes, A. L. A., Soares, C. A. P., & Silva, W. D. S. E. (2020). The project manager core competencies to project success. *International journal of managing projects in Business*, 13(2), 277-292.
- Amajuoyi, C. P., Nwobodo, L. K., & Adegbola, M. D. (2024). Transforming business scalability and operational flexibility with advanced cloud computing technologies. *Computer Science & IT Research Journal*, 5(6), 1469-1487.
- Arefazar, Y., Nazari, A., Hafezi, M. R., & Maghool, S. A. H. (2022). Prioritizing agile project management strategies as a change management tool in construction projects. *International Journal of Construction Management*, 22(4), 678-689.
- Bakici, T., Nemeh, A., & Hazir, Ö. (2021). Big data adoption in project management: insights from French organizations. *IEEE Transactions on Engineering Management*, 70(10), 3358-3372.
- Bartlett, L., Kabir, M. A., & Han, J. (2023). A review on business process management system design: the role of virtualization and work design. *IEEE Access*.
- Chunsheng, L., Wong, C. W., Yang, C. C., Shang, K. C., & Lirn, T. C. (2020). Value of supply chain resilience: roles of culture, flexibility, and integration. *International Journal of Physical Distribution & Logistics Management*, 50(1), 80-100.
- Daraojimba, E. C., Nwasike, C. N., Adegbite, A. O., Ezeigweneme, C. A., & Gidiagba, J. O. (2024). Comprehensive review of agile methodologies in project management. *Computer Science & IT Research Journal*, 5(1), 190-218.
- Delhi, V. S. K., & Mahalingam, A. (2020). Relating institutions and governance strategies to project outcomes: Study on public-private partnerships in infrastructure projects in India. *Journal of Management in Engineering*, 36(6), 04020076.
- Dewulf, G., & Garvin, M. J. (2020). Responsive governance in PPP projects to manage uncertainty. *Construction Management and Economics*, 38(4), 383-397.
- Fawzy, A., Tahir, A., Galster, M., & Liang, P. (2024). Data Management Challenges in Agile Software Projects: A Systematic Literature Review. *arXiv preprint arXiv:2402.00462*.
- Fernandes, J., Ferreira, F., Cordeiro, F., Neto, V. G., & Santos, R. (2020, November). How can interoperability approaches impact on Systems-of-Information Systems characteristics?. In *Proceedings of the XVI Brazilian Symposium on Information Systems* (pp. 1-8).
- Fey, S., & Kock, A. (2022). Meeting challenges with resilience—How innovation projects deal with adversity. *International Journal of Project Management*, 40(8), 941-950.
- Gemino, A., Horner Reich, B., & Serrador, P. M. (2021). Agile, traditional, and hybrid approaches to project success: is hybrid a poor second choice?. *Project management journal*, 52(2), 161-175.
- Glyptis, L., Christofi, M., Vrontis, D., Del Giudice, M., Dimitriou, S., & Michael, P. (2020). E-Government implementation challenges in small countries: The project manager's perspective. *Technological Forecasting and social change*, 152, 119880.
- Hamdan, M., Gharaibeh, O., Al-Quran, A., & Nusairat, N. (2021). The impact of information technology investment on the financial performance of the banks. *Acad Strateg Manag J*, 20(6), 1-12.
- Hammouri, Q., & Abu-Shanab, E. A. (2020). Major factors influencing the adoption of cloud computing in Jordan. *International Journal of Technology and Human Interaction (IJTHI)*, 16(4), 55-69.
- Hammouri, Q., Aloqool, A., Saleh, B., Aldossary, H., Frejat, S., Halim, M., ... & Darawsheh, S. (2023). An empirical investigation on acceptance of e-wallets in the fintech era in Jordan: Extending UTAUT2 model with perceived trust. *International Journal of Data and Network Science*, 7(3), 1249-1258.
- Hanandeh, A., Kilani, Q., Alserhan, A., Khasawneh, Z., Hijazin, A., Nahleh, I., & Hammouri, Q. (2023). E-marketing, EWOM, and social media influencers' effects on Intention to purchase and customer's happiness at Amman Stock Exchange. *International Journal of Data and Network Science*, 7(4), 1921-1928.
- Hayes, S. C., Ciarrochi, J., Hofmann, S. G., Chin, F., & Sahdra, B. (2022). Evolving an idiomorphic approach to processes of change: Towards a unified personalized science of human improvement. *Behaviour Research and Therapy*, 156, 104155.
- Hetemi, E., Gemünden, H. G., & Meré, J. O. (2020). Embeddedness and actors' behaviors in large-scale project life cycle: Lessons learned from a high-speed rail project in Spain. *Journal of Management in Engineering*, 36(6), 05020014.
- Hetemi, E., Pushkina, O., & Zerjav, V. (2022). Collaborative practices of knowledge work in IT projects. *International Journal of Project Management*, 40(8), 906-920.
- Ika, L. A., & 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), 835-848.
- Jalali Sohi, A., Bosch-Rekveltdt, M., & Hertogh, M. (2020). Does flexibility in project management in early project phases contribute positively to end-project performance?. *International Journal of Managing Projects in Business*, 13(4).
- Jaradat, M. I. R. M., Ababneh, H. T., Faqih, K. M., & Nusairat, N. M. (2020). Exploring cloud computing adoption in higher educational environment: an extension of the UTAUT model with trust. *International Journal of Advanced Science and Technology*, 29(5), 8282-8306.
- Kolasani, S. (2023). Innovations in digital, enterprise, cloud, data transformation, and organizational change management using agile, lean, and data-driven methodologies. *International Journal of Machine Learning and Artificial Intelligence*, 4(4), 1-18.
- Kudyba, S., & D Cruz, A. (2023). Understanding project success involving analytic-based decision support in the digital era: a focus on IC and agile project management. *Journal of Intellectual Capital*, 24(6), 1429-1446.
- Miller, C., Thomas, B. C., & Roeller, M. (2020). Innovation management processes and sustainable iterative circles: an applied integrative approach. *Journal of Work-Applied Management*, 12(1), 69-90.

- Mošková, E., Brutovský, M., & Buganová, K. (2021). Risk management is a tool for flexible adaptation to changes in the environment and increasing the resilience of the enterprise. In *Conference proceedings: Challenges, trends, and inspirations within the labor market 2021* (pp. 300-309).
- Narayan, D. (2022). Platform capitalism and cloud infrastructure: Theorizing a hyper-scalable computing regime. *Environment and Planning A: Economy and Space*, 54(5), 911-929.
- Nasir, M. H., Arshad, J., Khan, M. M., Fatima, M., Salah, K., & Jayaraman, R. (2022). Scalable blockchains—A systematic review. *Future generation computer systems*, 126, 136-162.
- Neves de Souza, A., Ferreira da Silva, S. T., Baptista dos Santos França, J., Fonseca da Silva Dias, A., Oliveira, J., & Vivacqua, A. S. (2023). Communication channels and their challenges: An analysis of software development teams during the COVID-19 pandemic. *Proceedings of the ACM on Human-Computer Interaction*, 7(GROUP), 1-26.
- Oyedokun, G. E., & Campbell, O. (2023). Imperatives of Risk Analysis and Asset Management on Cyber Security in a Technology-Driven Economy. In *Effective Cybersecurity Operations for Enterprise-Wide Systems* (pp. 147-168). IGI Global.
- Pantović, V., Vidojević, D., Vujičić, S., Sofijanić, S., & Jovanović-Milenković, M. (2024). Data-Driven decision making for sustainable IT project management excellence. *Sustainability*, 16(7), 3014.
- Paul, A., Kelvin, L., & Brown, K. (2024). Optimizing IT Growth: Strategies for Building and Scaling Robust Infrastructure Systems. *Ladoke Akintola University of Technology*. URL: <https://www.researchgate.net/publication/377447014>, 17.
- Radhakrishnan, A., Zaveri, J., David, D., & Davis, J. S. (2022). The impact of project team characteristics and client collaboration on project agility and project success: An empirical study. *European Management Journal*, 40(5), 758-777.
- Rahman, S. A., Tuckerman, L., Vorley, T., & Gherhes, C. (2021). Resilient research in the field: Insights and lessons from adapting qualitative research projects during the COVID-19 pandemic. *International journal of qualitative methods*, 20, 16094069211016106.
- Rane, S. B., & Narvel, Y. A. (2021). Leveraging the industry 4.0 technologies for improving agility of project procurement management processes. *International journal of system assurance engineering and management*, 12(6), 1146-1172.
- Renzl, B., Mahringer, C., Rost, M., & Scheible, L. (2021). Organizational agility: Current challenges and future opportunities. *Journal of Competences, Strategy & Management*, 11, 1-10.
- Russo, D. (2021). The agile success model: a mixed-methods study of a large-scale agile transformation. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 30(4), 1-46.
- Saeed, M. A., Tabassum, H., Zahid, M. M., Jiao, Y., & Nauman, S. (2022). Organizational flexibility and project portfolio performance: The roles of environmental uncertainty and innovation capability. *Engineering Management Journal*, 34(2), 249-264.
- Sánchez-Silva, M., & Calderón-Guevara, W. (2022). Flexibility and adaptability within the context of decision-making in infrastructure management. *Structure and Infrastructure Engineering*, 18(7), 950-966.
- Schreieck, M., Wiesche, M., & Krcmar, H. (2021). Capabilities for value co-creation and value capture in emergent platform ecosystems: A longitudinal case study of SAP's cloud platform. *Journal of Information Technology*, 36(4), 365-390.
- Settembre-Blundo, D., González-Sánchez, R., Medina-Salgado, S., & García-Muiña, F. E. (2021). Flexibility and resilience in corporate decision making: a new sustainability-based risk management system in uncertain times. *Global Journal of Flexible Systems Management*, 22(Suppl 2), 107-132.
- Sithambaram, J., Nasir, M. H. N. B. M., & Ahmad, R. (2021). Issues and challenges impacting the successful management of agile-hybrid projects: A grounded theory approach. *International journal of project management*, 39(5), 474-495.
- Swart, K., Bond-Barnard, T., & Chugh, R. (2022). Challenges and critical success factors of digital communication, collaboration and knowledge sharing in project management virtual teams: a review. *International Journal of Information Systems and Project Management*, 10(4), 84-103.
- Tam, C., da Costa Moura, E. J., Oliveira, T., & Varajão, J. (2020). The factors influencing the success of on-going agile software development projects. *International Journal of Project Management*, 38(3), 165-176.
- Wu, T. (2022). Digital project management: rapid changes define new working environments. *Journal of Business Strategy*, 43(5), 323-331.
- Xu, L. D. (2020). The contribution of systems science to Industry 4.0. *Systems Research and Behavioral Science*, 37(4), 618-631.



© 2024 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).