



DETERMINANTS OF INFORMATION SYSTEM SUCCESS IN INDONESIA: SYSTEM REQUIREMENTS, TEAM CAPABILITIES, AND STAKEHOLDER INVOLVEMENT

DETERMINAN KEBERHASILAN SISTEM INFORMASI DI INDONESIA: PERSYARATAN SISTEM, KEMAMPUAN TIM, DAN KETERLIBATAN PEMANGKU KEPENTINGAN

Faidatul Hikmah^{1*}, Sinung Suakanto²

¹*Universitas Telkom, Email: faiidamah@student.telkomuniversity.ac.id

²Universitas Telkom, Email: Sinung@telkomuniversity.ac.id

*email koresponden: faiidamah@student.telkomuniversity.ac.id

DOI: <https://doi.org/10.62567/micjo.v3i1.2034>

Abstract

Success in information system projects has a significant impact on the development of information technology. The research specifically explores the factors that can influence the success and failure of information system projects in Indonesia. The research method applied is a double linear regression analysis of a case study involving 67 information system projects that have been completed by various organizations and companies in Indonesia. Some of the major findings of this study cover critical aspects that have a significant impact on the performance of information system projects. Analysis of project information system requirements is identified as one of the key factors affecting the success of the project. Team capabilities, both in terms of technical skills and interpersonal coordination, are also important elements that correlate with project outcomes. The involvement of stakeholders throughout the project cycle has also proved to have a positive impact. It is understood that involving stakeholders actively can enhance a better understanding of user needs and minimize the risk of change of requirements in the middle of the way. By gaining in-depth insight into these key factors, this research makes valuable contributions to the planning, development, and implementation of future information system projects in Indonesia.

Keywords : Information System Projects, Analysis of Requirements, Team Capacity, Stakeholder Engagement.

Abstrak

Kesuksesan dalam proyek sistem informasi memiliki dampak yang signifikan dalam pengembangan teknologi informasi. Penelitian ini secara khusus mengeksplorasi faktor-faktor yang dapat mempengaruhi keberhasilan dan kegagalan proyek sistem informasi di Indonesia. Metode penelitian yang diterapkan adalah analisis regresi linear berganda terhadap sebuah studi kasus yang melibatkan 67 proyek sistem informasi yang telah selesai dilaksanakan oleh berbagai organisasi dan perusahaan di Indonesia. Beberapa temuan utama penelitian ini mencakup aspek-aspek kritis yang memiliki dampak



signifikan terhadap kinerja proyek sistem informasi. Kejelasan analisis kebutuhan proyek sistem informasi teridentifikasi sebagai salah satu faktor kunci yang mempengaruhi kesuksesan proyek. Kemampuan tim, baik dari segi keterampilan teknis maupun koordinasi interpersonal, juga menjadi elemen penting yang berkorelasi dengan hasil proyek. Keterlibatan pemangku kepentingan dalam seluruh siklus proyek juga terbukti memiliki dampak positif. Dimengerti bahwa melibatkan pemangku kepentingan secara aktif dapat meningkatkan pemahaman yang lebih baik tentang kebutuhan pengguna dan meminimalkan risiko perubahan persyaratan di tengah jalan. Dengan memperoleh wawasan mendalam tentang faktor-faktor kunci ini, penelitian ini memberikan kontribusi berharga untuk perencanaan, pengembangan, dan implementasi proyek sistem informasi di masa mendatang di Indonesia.

Kata Kunci : Proyek Sistem Informasi, Analisis Kebutuhan, Kapabilitas Tim, Keterlibatan Stakeholder.

1. INTRODUCTION

The use of information systems (IS) is now considered a metric to measure the growth and progress of an organization. The implementation of IS faces two possible outcomes: success or failure (Dwivedi et al., 2015). Many organizations strive to rapidly discover, develop, and implement these systems to achieve their objectives (Abualloush, Bataineh, and Aladwan, 2016). Consequently, IS projects play a vital role within an organization. Project success is characterized by implementation that is effective and enhances organizational effectiveness (Iriarte and Bayona, 2020). Project specifications and requirements, team satisfaction, and user and stakeholder satisfaction regarding project performance quality are the most frequently used success criteria (Lamprou and Vagiona, 2018). The continuous evolution of information technology impacts the complexity of IS projects. Organizational, technical, and environmental complexities underlie the intricate nature of IS projects (Joseph and Marnewick, 2021). In reality, IS projects often fail due to these complexities.

Recent studies conducted by the Standish Group (2015; 2022) on 50,000 IT projects worldwide illustrate IS development in the industry, ranging from minor changes to large-scale system reengineering. In 2020, only 31% of projects were successful, characterized by strong sponsor support and engagement, effective teams, and supportive work environments. The remaining projects consisted of 50% "challenged" projects and 19% failures. This success rate represents a slight increase compared to 2015 statistics, where only 29% of projects succeeded in terms of budget, timeliness, and specification requirements. The remaining 52% were challenged and 19% failed. A notable case is the e-Borders program initiated in 2003 by the UK Home Office to implement a superior border control system. It was contracted to Raytheon Systems in 2007 for \$750 million. Three years later, in 2010, the UK Home Office was dissatisfied with the project's execution and decided to terminate it (Asad Ali Khan, 2015). Similarly, the Instructional Technology Initiative (ITI) project at the Los Angeles Unified School District (LAUSD) failed in 2013. This project aimed to introduce technology in schools by distributing iPads to 650,000 students and utilizing a digital curriculum from Pearson Education. However, the project faced challenges such as technical issues and a lack of student



access to content, leading to contract termination by LAUSD and the project's ultimate failure (Margolin et al., 2015). These cases illustrate the increasing complexity of IS projects. Despite the support of better technological developments, failures in both small and large projects remain frequent (Alami, 2016).

Recent research across various cities in Indonesia indicates that only 27% of IS projects were successfully completed within budget, on time, and evaluated positively by users.

Approximately 55% of IS projects encountered problems, while 18% were canceled. These findings suggest that the failure rate of IS projects in Indonesia remains very high (Dwi Apriyanto and Putro, 2018). Research discussing the analysis of IS project success factors in Indonesia is quite limited. Researchers have focused more on the implementation success of specific systems, such as accounting information systems (Aulia, Fitrius, and Putra, 2021), e-Governance (Napitupulu, 2015), Enterprise Resource Planning (Irawan and Syah, 2017), and project management systems (Safitri, 2020). Therefore, this study evaluates the failure and success of IS projects in Indonesia. This research not only highlights the general failure and success of IS projects but also identifies the specific factors influencing these outcomes. It is expected that the results of this study will increase organizational awareness regarding IS projects and serve as a reference for future research.

a. Information Systems Projects

Modern organizations face increasing complexity as a result of rising volatility, uncertainty, and ambiguity within their business environments (Iivari, 2021). Information Systems (IS) hold a critical position within organizations and permeate nearly every aspect of business (Varajão and Trigo, 2016). IS serves as a fundamental asset for businesses, essential for enhancing efficiency, minimizing operational costs, and achieving a competitive advantage. Information systems projects are undertaken to initiate and develop the implementation of IS within an organization. An IS project is a purposeful endeavor that requires a series of procedures and actions to create, execute, and maintain information systems within an organization or commercial entity. The objectives of these projects are to optimize operational efficiency, improve data management, or implement new technologies to facilitate business processes. IS projects encompass several stages, including planning, requirements analysis, system design, implementation, testing, and maintenance (Mehta, Puranik, and Sharma, 2016).

b. Information Systems Project Performance

Project performance is defined as the ability to achieve project objectives in terms of time, cost, and quality, while meeting the needs and expectations of stakeholders (Schwalbe, 2018). The performance of information systems projects is a complex concept involving three primary dimensions: task, psychological, and organizational outcomes (Aladwani, 2002). To achieve optimal project performance, project design attributes become crucial.

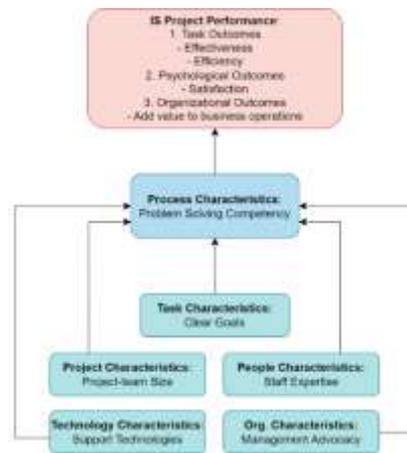


Figure 1. Information Systems Project Performance Model

The task aspect—such as the use of appropriate supporting technology, a project team size proportionate to the task complexity, and the establishment of clear project goals—serves as the foundation for successful outcomes. Meanwhile, the psychological aspect involves staff expertise and management support. Ensuring that team members possess skills aligned with their tasks and receive support and advocacy from management can enhance motivation and engagement. Regarding organizational outcomes, problem-solving capability serves as a key indicator. Success in responding adaptively to challenges and overcoming obstacles reflects favorable results. Therefore, achieving beneficial process outcomes, particularly the ability to solve problems, is considered key to securing overall IS project performance. Focusing on these project design elements serves as a strategy to maximize the potential for project success and optimize its impact on the organization.

2. RESEARCH METHOD

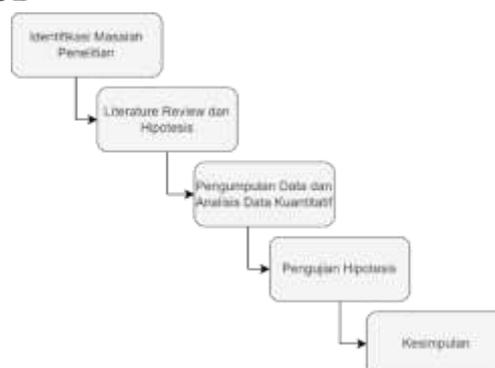


Figure 2 Research Systematics

This study uses quantitative methods. In quantitative research, research questions identify the relationships between the variables being studied and are usually formulated at the beginning of the study. These questions are precise and generally related to the subject population, dependent and independent variables, and research design (Barroga and Matanguihan, 2022).

The hypotheses in this study are:



- ✓ H1: Does the clarity of the information systems project requirements analysis have a significant positive effect on information systems project performance?
- ✓ H2: Does team capability have a significant positive effect on information systems project performance?
- ✓ H3: Does stakeholder involvement have a significant positive effect on information systems project performance?

In this study, the independent variable (Information Systems Project Performance) will be measured using three independent variables (Clarity of the Project Requirements Analysis, Team Capability, and Stakeholder Involvement).

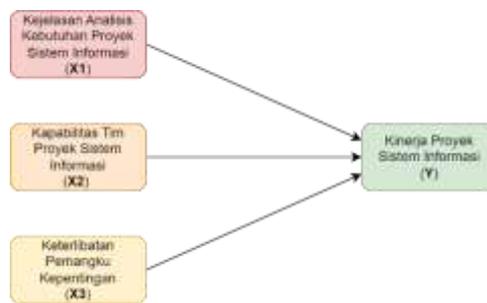


Figure 3 Relationship between research variables

Table 1 Research variable indicators

Variabel	Definisi Variabel	Indikator	Sumber
Kejelasan Analisis Kebutuhan Proyek Sistem Informasi.	Proses identifikasi, kebutuhan pengguna dan sistem untuk kebutuhan proyek sistem informasi.	- Analisis Ruang Lingkup yang Detail dan Lengkap. - Tingkat Perubahan. Ruang Lingkup. - Metode Pengembangan yang jelas.	(Hofmann and Lehner, 2001) (Lal, 2020) (Tomczak et al., 2022)
Kapabilitas Tim Proyek Sistem Informasi.	keterampilan, pengetahuan, dan kemampuan dari seluruh anggota tim yang terlibat dalam proyek sistem informasi.	- Kepemimpinan Tim yang baik. - Anggota Tim memiliki pengalaman yang baik. - Komunikasi yang baik antara internal anggota tim. - Kemampuan penyesuaian perubahan anggota tim internal. - Intensitas rata-rata komunikasi tim.	(Belout and Gauvreau, 2004) (Nguyen and Hadikusumo, 2018) (Akgün, 2020) (Leilae and Rezaeian, 2021) (Yu and Hsiao, 2022)



Keterlibatan Pemangku Kepentingan.	Keterlibatan pemangku kepentingan mendukung perencanaan, pengembangan dan implementasi sistem informasi yang berada di proyek.	<ul style="list-style-type: none"> - Definisi ruang lingkup. - Ruang Lingkup Memenuhi Ekspektasi Pengguna. 	<p>(Pondeville, Swaen and De Rongé, 2013)</p> <p>(Johansen, Eik-Andresen and Ekambaram, 2014)</p> <p>(Mukherjee, 2019)</p> <p>(Prebanić and Vukomanović, 2023)</p>
Kinerja Proyek Sistem Informasi.	Pencapaian hasil kerja pada secara kualitas dan kuantitas setelah proyek sistem informasi selesai.	<ul style="list-style-type: none"> - Pencapaian Tujuan Proyek. - Pemenuhan Ruang Lingkup. - Kesesuaian Jadwal Proyek. - Kesesuaian Biaya Proyek. 	<p>(Adel M. Aladwani, 2002)</p> <p>(Sanchez, Terlizzi and de Moraes, 2017)</p> <p>(Rudi Dwi Apriyanto, 2018)</p>

This study used secondary data obtained through a survey method with a questionnaire approach. The research respondents were students of the Master of Information Systems study program at Telkom University, Indonesia. The research instrument was a questionnaire consisting of 14 closed-ended questions according to the variable indicators listed in Table 1. The questionnaire was then distributed to respondents to collect data. The data collected from the questionnaire results were then analyzed using several analytical techniques. First, an instrument test was conducted to ensure the validity and reliability of the questionnaire used. Next, a classical assumption test was conducted to check the data's suitability to the basic assumptions of multiple linear regression analysis. Multiple linear regression analysis was used to uncover the relationship between the variables studied. This process involved the use of the IBM SPSS Statistics version 26 application to analyze the data and produce relevant statistical results. Finally, a hypothesis test was conducted to test the significance of the relationship between the identified variables.

3. RESULT AND DISCUSSION

A total of 67 respondents were interviewed. These respondents had experience in various roles in information systems projects, including as a Software Engineer, Software Operator,



Business Analyst, System Analyst, Quality Assurance, UI/UX Designer, Project Management Officer, Consultant, and Procurement. From the evaluation of 67 information systems projects conducted by respondents, 87% of the projects were deemed successful. Fifty-seven projects met their defined project scope, and one project even exceeded the defined scope. Meanwhile, the remaining 13% of information systems projects failed. Of these 13%, nine projects only partially met their defined project scope.

a. Instrument Testing

The validity test was conducted on 67 respondents, using a significance level (α) of 5% or 0.05. To obtain the r table value, first find $Df = N - 2 = 67 - 2 = 65$, resulting in the r table value = 0.240. Data are considered valid if the calculated r value is greater than the r table value and the significance value is < 0.05 . The results indicate that all items are valid, as the resulting coefficients are greater than 0.240. Therefore, there is no need to replace or delete statements.

Table 2 Validity Test Results

Variabel	No. Item	R Hitung	R Tabel	Keterangan
Kejelasan Analisis Kebutuhan Proyek Sistem Informasi (X1)	X1.1	0.836	0.240	Valid
	X1.2	0.908	0.240	Valid
	X1.3	0.885	0.240	Valid
Kapabilitas Tim Proyek Sistem Informasi (X2)	X2.1	0.806	0.240	Valid
	X2.2	0.823	0.240	Valid
	X2.3	0.911	0.240	Valid
	X2.4	0.854	0.240	Valid
	X2.5	0.827	0.240	Valid
Keterlibatan Pemangku Kepentingan (X3)	X3.1	0.924	0.240	Valid
	X3.2	0.914	0.240	Valid
Kinerja Proyek Sistem Informasi (Y)	Y.1	0.883	0.240	Valid
	Y.2	0.867	0.240	Valid
	Y.3	0.868	0.240	Valid
	Y.4	0.865	0.240	Valid

A reliability test can be declared poor if the reliability is less than 0.6, while 0.7 is acceptable and above 0.8 is good. The results show that all statement variables have values that can be categorized as acceptable reliability because they are greater than the Cronbach's alpha value of 0.6.

Tabel 1 Hasil uji reabilitas

Reliability Statistics

Variabel	Cronbach's Alpha	N of Items
Kejelasan Kebutuhan Proyek Sistem Informasi (X1).	0.844	3
Variabel	0.899	5



Kapabilitas
Tim Proyek
Sistem
Informasi (X2).

Keterlibatan Pemangku Kepentingan (X3).	0.816	2
--	-------	---

Variabel Kinerja Proyek Sistem Informasi (Y)	0.892	4
---	-------	---

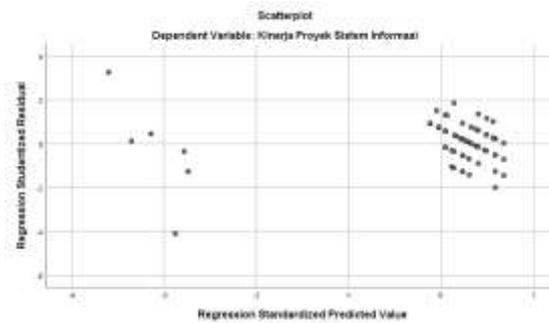
b. Classical Assumption Test

Data normality was tested using the Kolmogorov-Smirnov Test of Normality in SPSS. If the probability > 0.05, the regression model distribution is normal. If the probability < 0.05, the regression model distribution is not normal. The results show that the Asymp. Sig. (2-tailed) value of 0.200 is greater than 0.05, proving that the data are normally distributed.

Table 4 Results of normality test
One-Sample Kolmogorov-Smirnov Test

		<i>Unstandardized Residual</i>
N		67
<i>Normal Parameters^{a,b}</i>	<i>Mean</i>	0.0000000
	<i>Std. Deviation</i>	1.34138859
<i>Most Extreme Differences</i>	<i>Absolute</i>	0.082
	<i>Positive</i>	0.060
	<i>Negative</i>	-0.082
<i>Test Statistic</i>		0.082
<i>Asymp. Sig. (2-tailed)</i>		0.200 ^{c,d}
<i>a. Test distribution is Normal.</i>		
<i>b. Calculated from data.</i>		
<i>c. Lilliefors Significance Correction.</i>		
<i>d. This is a lower bound of the true significance.</i>		

The heteroscedasticity test is performed to determine whether there is inequality in the variance of the residuals (model errors) between observations in the regression model by evaluating the heteroscedasticity test results graph in the SPSS application. If there is no clear pattern in the graph and the points are evenly distributed above and below the value of 0 on the Y-axis, then it can be interpreted that there is no indication of heteroscedasticity. Based on the results of the scatterplot output above, it can be seen that the points are spread out and do not form a clear pattern. Thus, it can be concluded that there is no problem of heteroscedasticity.



Gambar 1 Hasil uji heteroskedastisitas

Multicollinearity can occur when there is a strong correlation between independent variables, which can interfere with the interpretation and reliability of regression results. If the VIF value is <10.00, it indicates no multicollinearity in the regression model. Conversely, if the VIF value is >10.00, it indicates multicollinearity in the regression model. The results show that the VIF values for all variables are less than 10.00 and the tolerance value is close to 1, thus it can be concluded that there is no multicollinearity in the regression model.

Table 5: Multicollinearity Test Results

Coefficients^a

<i>Model</i>	<i>Collinearity Statistics</i>	
	<i>Tolerance</i>	<i>VIF</i>
1 Kejelasan Kebutuhan Proyek Sistem Informasi	0.189	5.284
Kapabilitas Tim Proyek Sistem Informasi	0.198	5.053
Keterlibatan Pemangku Kepentingan	0.313	3.193

a. *Dependent Variable: Kinerja Proyek Sistem Informasi*

c. Multiple Linear Regression Test

Table 6. Results of the multiple linear regression test

Coefficients^a

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		<i>t</i>	<i>Sig.</i>
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			
1 (Constant)	1.292	.986			1.311	.195
Kejelasan Kebutuhan Proyek Sistem Informasi	0.457	0.164	0.353		2.781	0.007
Kapabilitas Tim Proyek Sistem Informasi	0.254	0.099	0.318		2.564	0.013
Keterlibatan Pemangku Kepentingan	0.519	0.181	0.282		2.865	0.006

a. *Dependent Variable: Kinerja Proyek Sistem Informasi*



Untuk $b_1 = 0.457$ menyatakan jika X_1 bertambah, maka Y akan mengalami peningkatan sebesar 0.457 dengan asumsi tidak ada penambahan konstanta nilai X_2 dan X_3 .

1. $b_2 = 0.254$ menyatakan jika X_2 bertambah, maka Y akan mengalami penurunan sebesar 0.254 dengan asumsi tidak ada penambahan konstanta nilai X_1 dan X_3 .
2. $b_3 = 0.519$ menyatakan jika X_3 bertambah, maka Y akan mengalami penurunan sebesar 0.519 dengan asumsi tidak ada penambahan konstanta nilai X_1 dan X_2 .

d. Hypothesis Testing

The partial t -test is a statistical method used to assess the significance of the individual contribution of an independent variable to a dependent variable in multiple linear regression. The purpose of this test is to determine whether a particular variable has a significant effect on the dependent variable.

The t -statistic for Information System Project Requirements Clarity (X_1) is 2.781. The t -table value is determined using a t -distribution at $\alpha/2 = 0.05/2 = 0.025$ with degrees of freedom $N - k - 1$, namely $67 - 3 - 1$, resulting in a t -table value of 1.998. Since the calculated t -value is greater than the t -table value ($2.781 > 1.998$) and the significance value (Sig.) is less than 0.05, it can be concluded that there is a significant effect of Information System Project Requirements on Information System Project Performance.

The t -statistic for Information System Project Team Capability (X_2) is 2.564. Using the same significance level ($\alpha/2 = 0.025$) and degrees of freedom ($67 - 3 - 1$), the t -table value obtained is 1.998. Because the calculated t -value is greater than the t -table value ($2.564 > 1.998$) and the significance value (Sig.) is less than 0.05, it can be concluded that Information System Project Team Capability has a significant effect on Information System Project Performance.

The t -statistic for Stakeholder Involvement (X_3) is 2.865. With $\alpha/2 = 0.025$ and degrees of freedom $67 - 3 - 1$, the t -table value is 1.998. Since the calculated t -value is greater than the t -table value ($2.865 > 1.998$) and the significance value (Sig.) is less than 0.05, it can be concluded that Stakeholder Involvement has a significant effect on Information System Project Performance.

Discussion

a. The Effect of Clarity in Information System Project Requirements Analysis on Information System Project Performance

The results of the study indicate that the variable of clarity in information system project requirements analysis obtained a t -value of 2.781 with a significance value of 0.007, which is less than 0.05 ($0.007 < 0.05$), and a positive regression coefficient of 0.457. Therefore, the hypothesis stating that "*Clarity in information system project requirements analysis has a positive and significant effect on information system project performance*" is accepted. These findings are supported by previous studies conducted by Hofmann and Lehner (2001), Lal (2020), and Tomczak et al. (2022), which found a significant relationship between the clarity of information system project requirements analysis and information system project performance.



b. The Effect of Information System Project Team Capability on Information System Project Performance

The results of the study show that the variable of information system project team capability obtained a t -value of 2.865 with a significance value of 0.013, which is less than 0.05 ($0.013 < 0.05$), and a positive regression coefficient of 0.254. Thus, the hypothesis stating that “*Project team capability has a positive and significant effect on information system project performance*” is accepted. These findings are reinforced by previous studies conducted by Belout and Gauvreau (2004), Nguyen and Hadikusumo (2018), Akgün (2020), Leilae and Rezaeian (2021), and Yu and Hsiao (2022), which identified a relationship between information system project team capability and information system project performance.

c. The Effect of Stakeholder Involvement on Information System Project Performance

The results of the study indicate that the stakeholder involvement variable obtained a t -value of 2.564 with a significance value of 0.006, which is less than 0.05 ($0.006 < 0.05$), and a positive regression coefficient of 0.519. Therefore, the hypothesis stating that “*Stakeholder involvement has a positive and significant effect on information system project performance*” is accepted. These findings are supported by previous studies conducted by Pondeville, Swaen, and De Rongé (2013), Johansen, Eik-Andresen, and Ekambaram (2014), Mukherjee (2019), and Prebanić and Vukomanović (2023), which found a significant relationship between stakeholder involvement and information system project performance.

4. CONCLUSION

Based on the research results, it can be concluded that information systems projects in Indonesia show a relatively high success rate, reaching 87%, while the failure rate is relatively low, at 13%. The evaluation was conducted by testing three hypotheses using multiple linear regression analysis, and the results showed that all hypotheses had a significant impact on information systems project performance. Therefore, attention to clarity of needs, team capabilities, and stakeholder engagement are key to ensuring the success of information systems projects in Indonesia.

5. REFERENCES

- ABUALLOUSH, S., BATAINEH, K. AND ALADWAN, A.S., 2016. Impact of Information Systems on Innovation (Product Innovation, Process Innovation) - Field Study on the Housing Bank in Jordon. *International Journal of Business Administration*, 8(1), p.95. <https://doi.org/10.5430/ijba.v8n1p95>.
- ADEL M. ALADWANI, 2002. An Integrated Performance Model Information Systems Projects. *Journal of Management Information Systems*, 19(1), pp.185–210. <https://doi.org/10.1080/07421222.2002.11045709>.
- AKGÜN, A.E., 2020. Team wisdom in software development projects and its impact on project performance. *International Journal of Information Management*, 50, pp.228–243.



- <https://doi.org/10.1016/j.ijinfomgt.2019.05.019>.
- ALAMI, A., 2016. Why Do Information Technology Projects Fail? In: *Procedia Computer Science*. Elsevier B.V. pp.62–71. <https://doi.org/10.1016/j.procs.2016.09.124>.
- ASAD ALI KHAN, 2015. Failure to Deal with the Issues: The e-Borders Award and ‘Serious Irregularity’ under the Arbitration Act 1996 *. SSRN, [online] pp.1–19. Available at: <http://ssrn.com/abstract=2604612>.
- AULIA, S., FITRIOS, R. AND PUTRA, A.A., 2021. Kesuksesan Sistem Informasi Akuntansi: Dukungan Manajemen Puncak Dan Kemampuan Sumber Daya Manusia. *JURNAL AKUNTANSI*, [online] 10(2), pp.2301–4075. Available at: <http://ejournal.stiemj.ac.id/index.php/akuntansi415>.
- BARROGA, E. AND MATANGUIHAN, G.J., 2022. A Practical Guide to Writing Quantitative and Qualitative Research Questions and Hypotheses in Scholarly Articles. *Journal of Korean Medical Science*, 37(16). <https://doi.org/10.3346/jkms.2022.37.e121>.
- BELOUT, A. AND GAUVREAU, C., 2004. Factors influencing project success: The impact of human resource management. *International Journal of Project Management*, 22(1), pp.1–11. [https://doi.org/10.1016/S0263-7863\(03\)00003-6](https://doi.org/10.1016/S0263-7863(03)00003-6).
- DWI APRIYANTO, R. AND PUTRO, H.P., 2018. Tingkat Kegagalan dan Keberhasilan Proyek Sistem Informasi di Indonesia. In: *Seminar Nasional Teknologi Informasi dan Komunikasi 2018 (SENTIKA 2018)*. [online] pp.395–402. Available at: <https://www.researchgate.net/publication/342360290>.
- DWIVEDI, Y.K., WASTELL, D., LAUMER, S., HENRIKSEN, H.Z., MYERS, M.D., BUNKER, D., ELBANNA, A., RAVISHANKAR, M.N. AND SRIVASTAVA, S.C., 2015. Research on information systems failures and successes: Status update and future directions. *Information Systems Frontiers*, 17(1), pp.143–157. <https://doi.org/10.1007/s10796-014-9500-y>.
- HOFMANN, H.F. AND LEHNER, F., 2001. Requirements engineering as a success factor in software projects. *IEEE Software*, 18(4), pp.58–66.
- IIVARI, J., 2021. A framework for paradoxical tensions of project management. *International Journal of Information Systems and Project Management*, 9(1), pp.5–35. <https://doi.org/10.12821/ijispm090101>.
- IRAWAN, H. AND SYAH, I., 2017. Evaluation of Implementation of Enterprise Resource Planning Information System with DeLone and McLean Model Approach. In: *2017 Fifth International Conference on Information and Communication Technology (ICoICT)*.
- IRIARTE, C. AND BAYONA, S., 2020. IT Projects Success Factors: A Literature Review. *International Journal of Information Systems and Project Management*, <https://doi.org/10.12821/ijispm080203>.
- JOHANSEN, A., EIK-ANDRESEN, P. AND EKAMBARAM, A., 2014. Stakeholder Benefit Assessment – Project Success through Management of Stakeholders. *Procedia - Social and Behavioral Sciences*, 119, pp.581–590. <https://doi.org/10.1016/j.sbspro.2014.03.065>.
- JOSEPH, N. AND MARNEWICK, C., 2021. Measuring Information Systems Project



- Complexity: A Structural Equation Modelling Approach. *Complexity*, 2021. <https://doi.org/10.1155/2021/5907971>.
- KATHY SCHWALBE, 2018. *Information Technology Project Management*. 9th ed. Boston: Cengage Learning.
- LAL, N., 2020. Requirements Management in Information Technology Projects. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3677504>.
- LAMPROU, A. AND VAGIONA, D., 2018. Success criteria and critical success factors in project success: a literature review. *INTERNATIONAL JOURNAL OF REAL ESTATE AND LAND PLANNING*, .
- LEILAE, S. AND REZAEIAN, J., 2021. Critical success factors for human resource management of construction project. *Journal of Project Management (Canada)*, 6(3), pp.121–132. <https://doi.org/10.5267/j.jpm.2021.4.001>.
- MARGOLIN ALISON HAUSER JESSICA HEPPEN, J., BLUM ERIN HAYNES, J., CHAVEZ KRISTIN RUEDEL, S., FRONBERG JOHN MEAKIN DONG LEE JORDAN RICKLES, K., JACOBS ARTINEH SAMKIAN, C., WILDER BRENNAN, C.O. AND SURR LAUREN FELLERS, W., 2015. Evaluation of LAUSD's Instructional Technology Initiative - Year 2 Report. [online] Available at: <www.air.org>.
- MEHTA, S.S., PURANIK, P.S. AND SHARMA, S.B., 2016. A Review on Project Information System for Improving Efficiency of Project Development Cycle. *Research & Reviews: A Journal of Embedded System & Applications*, [online] 4(3). Available at: <<https://www.researchgate.net/publication/313314368>>.
- MUKHERJEE, S., 2019. How stakeholder engagement affects IT projects. *SSRN*.
- NAPITUPULU, D., 2015. Kajian Faktor Sukses Implementasi E-Government, Studi Kasus: Pemerintah Kota Bogor. *Sisfo*, 05(03). <https://doi.org/10.24089/j.sisfo.2015.03.009>.
- NGUYEN, H.T. AND HADIKUSUMO, B.H.W., 2018. Human resource related factors and engineering, procurement, and construction (EPC) project success. *Journal of Financial Management of Property and Construction*, 23(1), pp.24–39. <https://doi.org/10.1108/JFMPC-05-2016-0023>.
- PONDEVILLE, S., SWAEN, V. AND DE RONGÉ, Y., 2013. Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research*, 24(4), pp.317–332. <https://doi.org/10.1016/j.mar.2013.06.007>.
- PREBANIĆ, K.R. AND VUKOMANOVIĆ, M., 2023. Exploring Stakeholder Engagement Process as the Success Factor for Infrastructure Projects. *Buildings*, 13(7). <https://doi.org/10.3390/buildings13071785>.
- RUDI DWI APRIYANTO, 2018. Faktor-faktor yang Mempengaruhi Kinerja Proyek Sistem Informasi Di Indonesia. Universitas Islam Indonesia.
- SAFITRI, N., 2020. Model Kesuksesan Sistem Teknologi Informasi Delone & McLean pada Sistem Informasi Pengelolaan Proyek. *Informatics for Educators and Professionals*, 4(2), pp.173–182.
- SANCHEZ, O.P., TERLIZZI, M.A. AND DE MORAES, H.R. DE O.C., 2017. Cost and time



- project management success factors for information systems development projects. *International Journal of Project Management*, 35(8), pp.1608–1626. <https://doi.org/10.1016/j.ijproman.2017.09.007>.
- STANDISH GROUP, 2015. CHAOS Report 2015.
- STANDISH GROUP, 2022. CHAOS Report 2022.
- TOMCZAK, A., BERLO, L. V, KRIJNEN, T., BORRMANN, A. AND BOLPAGNI, M., 2022. A review of methods to specify information requirements in digital construction projects. *IOP Conference Series: Earth and Environmental Science*, 1101(9), p.092024. <https://doi.org/10.1088/1755-1315/1101/9/092024>.
- VARAJÃO, J. AND TRIGO, A., 2016. Evaluation of IS project success: a case study Evaluation of IS project success in InfSysMakers: an exploratory case study.
- YU, C. AND HSIAO, Y.-C., 2022. IT Project Management Resource. *International Journal of Information Technology Project Management*, 13(1), pp.1–15. <https://doi.org/10.4018/IJITPM.304057>.