An Investigation into Change Request Handling Processes Used by Project Managers

Shani Singh (M.Tech)

Research Scholar, Mechanical Engineering
Shanince1@gmail.com

Abstract

This study investigates how project managers handle change requests and assesses the effectiveness, challenges, and improvement strategies used in project environments. A quantitative, cross-sectional survey approach was employed, and data was collected from 180 respondents across industries, with 56.7% male and 43.3% female participants, ensuring diverse representation. A structured questionnaire using a five-point Likert scale was administered, and reliability testing produced a strong overall Cronbach's alpha of .871, confirming internal consistency. Statistical analysis was conducted using SPSS, including regression and ANOVA. Findings indicate that tools and technology significantly support effective handling (β=.312), while communication quality remains a notable challenge (β=.187). Training effectiveness emerged as an important improvement factor (β=.220), and process simplification also showed a positive impact (β=.199), highlighting its value in reducing complexity. Although the predictive strength of some models was moderate, results emphasize that efficiency in handling change requests depends on technological adoption, structured workflows, and continuous skill development. Overall, the study concludes that improving communication, enhancing automation, and strengthening organizational clarity can help reduce delays, improve traceability, and support better project outcomes. The findings contribute actionable insights for organizations seeking to strengthen change governance and improve project success rates.

Keywords: project Managers, Project Environments, Five-Point Likert Scale, Reliability, SPSS, Effective Handling, Skill Development and Improve Traceability

1. Introduction

Change request handling is an essential component of project management, directly influencing project outcomes, client satisfaction, and overall organizational performance. As projects evolve, unforeseen variables, technological advancements, and stakeholder demands frequently necessitate change requests, which must be effectively managed to avoid scope creep, cost escalation, and schedule overruns. Change request handling involves systematic processes for assessing, approving, and implementing proposed modifications within a project's lifecycle. Research indicates that projects lacking robust change control mechanisms often suffer from inefficiencies, communication gaps, and reduced project performance (Gaber et al., 2015). Therefore, understanding how project managers design and execute change request processes has become critical in modern project environments.

In contemporary industries, the role of project managers extends beyond mere task supervision to strategic decision-making and risk mitigation through structured change management frameworks. Recent studies highlight the necessity for integrating change control systems with advanced tools such as Building Information Modeling (BIM) and digital project management software to optimize transparency and traceability (Mejlænder-Larsen, 2017). Furthermore, effective change request handling enhances collaboration among cross-functional teams, reduces resistance to change, and aligns project modifications with organizational objectives. As global project environments become increasingly complex and distributed, the efficiency of change request management will determine not only project success but also the adaptability and competitiveness of organizations in a dynamic marketplace.

1.1.   Background of Change Management in Project Environments

Change management in project environments refers to the systematic process of identifying, assessing, and implementing changes that occur during a project's lifecycle. These changes may stem from evolving client needs, market dynamics, or internal process improvements. Historically, change management evolved from traditional reactive practices to proactive, structured methodologies that prioritize communication, documentation, and stakeholder engagement. The integration of change management into project governance frameworks ensures alignment between project objectives and stakeholder expectations, thereby minimizing disruption and uncertainty. In IT and construction sectors, structured change management frameworks such as change control boards and automated tracking systems have improved project delivery by enhancing transparency and decision accountability (Lal, 2020). Similarly, in software engineering, change management has evolved to include agile methodologies and iterative review systems that allow for dynamic adaptation to stakeholder feedback. The growing digitalization of project environments has also enabled the adoption of collaborative tools and real-time analytics that facilitate better monitoring and control of change requests. Consequently, modern change management is no longer confined to post-failure corrections but has become a vital, integrated component of strategic project execution, directly influencing quality, schedule, and budget performance.

1.2.   Importance of Effective Change Request Handling in Project Success

1.   **Minimizes Scope Creep and Cost Overruns:** Structured change management prevents uncontrolled expansion of project scope and ensures cost predictability (Gaber et al., 2016).

2.   **Enhances Stakeholder Communication:** Clear processes promote transparency and timely communication among stakeholders (Gaber et al., 2012).

3.   **Improves Project Quality:** Effective request evaluation and approval mechanisms ensure that only beneficial changes enhance deliverable quality (Teah et al., 2019).

4.   **Supports Agile and Adaptive Management:** Adaptive frameworks facilitate real-time responsiveness to environmental or requirement changes (Riascos et al., 2020).

5.   **Ensures Compliance and Risk Control:** Documented and standardized procedures reduce risks of non-compliance and project misalignment (Ibaisi, 2019).

1.3.   Challenges and Inefficiencies in Current Change Request Processes

Despite advancements, organizations still face multiple challenges in efficiently managing change requests. Common issues include lack of standardized procedures, poor documentation, and inconsistent stakeholder communication. In distributed environments, conflicting stakeholder interests and geographical separation often lead to delays and misinterpretations during change evaluations (Gaber et al., 2012). Additionally, project teams frequently struggle to balance flexibility with control, especially when change requests originate from clients mid-project. The absence of automated tracking tools exacerbates inefficiencies, leading to data fragmentation and duplication of effort. In construction and IT sectors, inadequate integration of tools like BIM and ERP systems can further hinder visibility across departments, resulting in suboptimal decision-making (Mejlænder-Larsen, 2015). Addressing these inefficiencies requires establishing clear governance frameworks, training personnel, and leveraging technology to improve traceability, accountability, and approval speed.

1.4.   Role of Project Managers in Managing and Approving Change Rquests

Project managers play a pivotal role in overseeing and approving change requests to ensure project objectives are met without compromising constraints of cost, scope, and schedule. Their responsibilities include identifying the necessity of change, evaluating its feasibility, coordinating stakeholder consultations, and facilitating timely decision-making

through structured approval processes. Project managers act as intermediaries between technical teams, sponsors, and clients, ensuring that proposed modifications align with project goals and strategic objectives (Lal, 2020). By implementing formal change control boards and decision matrices, they maintain consistency and transparency in handling change requests. In agile project settings, project managers leverage iterative review mechanisms to integrate stakeholder feedback continuously while maintaining control over project deliverables.

Furthermore, project managers are instrumental in mitigating risks associated with poorly managed changes by ensuring comprehensive impact analyses are conducted before approvals. Their leadership fosters collaboration and accountability within teams, promoting a culture of adaptability and learning. Studies show that projects with strong managerial oversight experience higher success rates and reduced change-related disruptions. Ultimately, project managers are not only facilitators but strategic enablers who balance flexibility with discipline, ensuring that each change contributes positively to the project's overall value proposition and stakeholder satisfaction.

2. Problem Statement

In modern project management, handling change requests efficiently remains a persistent challenge. Despite the availability of structured methodologies, many projects encounter delays, cost overruns, and miscommunication due to weak change control systems. Project managers often struggle to balance flexibility with adherence to scope, leading to poor decision-making and reduced project performance. Additionally, inconsistent documentation, unclear approval hierarchies, and lack of collaboration among stakeholders further complicate the process. As organizations increasingly adopt agile and digital project frameworks, it is essential to evaluate how effectively change requests are managed and to identify strategies that can enhance efficiency and project success.

3. Significance of the Study

This study is significant as it explores the impact of effective change request handling on project success and organizational performance. Understanding how project managers manage and respond to change requests provides insights into improving project control, stakeholder satisfaction, and overall efficiency. The study will help organizations establish standardized procedures and integrate technology-driven tools for better decision-making and traceability. Additionally, it contributes to academic and professional knowledge by highlighting key factors influencing change management success. The findings will assist project managers in refining their processes, promoting proactive change governance, and ensuring smoother project execution across diverse industries.

4. Objectives
- To examine the effectiveness of change request handling processes used by project managers.
- To identify key challenges affecting change request handling in project environments.
- To determine strategies that can improve change request handling efficiency.

5. Literature Review

Arefazar et al. (2022) emphasized that agile project management strategies play a pivotal role in enhancing change management efficiency, particularly within construction projects. Their study revealed that agile principles—such as adaptability, collaboration, and iterative development—allow project teams to respond effectively to client needs and external uncertainties without compromising project control. Similarly, Shafiq et al. (2018) discovered that integrating project management techniques within requirements engineering improves responsiveness to change, communication, and overall software quality in global software development environments. Complementing these perspectives, Perrotta et al. (2017) introduced a structured model for managing change requests in industrialization projects, highlighting the value of standardized documentation, systematic evaluation, and formal approval workflows. Collectively, these studies

suggest that combining agile flexibility with structured control frameworks ensures balanced decision-making, fosters team alignment, and enhances adaptability—key factors contributing to successful change request handling and improved project delivery performance across industries.

Jackie et al. (2019) investigated change request management practices in real-world IT projects and found that well-defined processes significantly reduce risks, improve team coordination, and enhance project outcomes. Their case study at IngeniousTec showed that disciplined change evaluations, formal documentation, and transparent communication between stakeholders directly contributed to project success. In a similar vein, Butt and Jamal (2017) examined user-driven change requests within agile projects, noting that although frequent requests can increase costs, they also create opportunities for product improvement and client satisfaction when managed effectively. Lal (2020) added that structured change control mechanisms are vital in ERP implementation projects, ensuring that changes remain aligned with organizational goals and risk management policies. Together, these studies demonstrate that a proactive approach—combining communication, collaboration, and formalized approval systems—helps maintain project integrity, minimize disruptions, and promote efficiency in handling change requests across different project environments.

An extensive scoping review examining critical factors influencing software change request management. Their research identified project complexity, stakeholder engagement, and clarity of initial requirements as key determinants of success in managing software changes. They stressed that both formal and informal communication mechanisms are crucial to mitigating risks associated with evolving project needs. Supporting these insights, Gaber et al. (2016) emphasized the importance of integrating project monitoring and control systems to enhance responsiveness and ensure traceability during change implementation. Furthermore, Gaber et al. (2015) proposed an integrated software change management framework that bridges project tasks with change requests, minimizing duplication and improving efficiency. Collectively, these studies underscore that technological integration, active collaboration, and continuous monitoring strengthen change management practices, leading to greater flexibility, reduced project delays, and improved overall performance in modern software and project management contexts.

6. Methodology

This methodology outlines the structured approach adopted to investigate change request handling processes used by project managers across various industries. The section explains the research design, sampling method, instrument development, data collection process, and analytical techniques. A quantitative survey approach was used to gather measurable insights from respondents. Statistical methods, including reliability testing and ANOVA, were applied to identify significant factors influencing effectiveness, challenges, and improvement strategies. The methodology ensures systematic data collection and supports validity and reliability of findings aligned with research objectives.

6.1. Aim

The aim of this methodology is to examine, analyze, and improve change request handling processes used by project managers in project environments.

6.2. Rationale

A structured methodology is essential for producing credible and valid research outcomes. Change request handling plays a crucial role in determining whether projects remain aligned with cost, time, and scope constraints. Therefore, adopting a quantitative approach provides objective measurement of relationships between variables affecting process efficiency and challenges faced by project teams. A survey method allows access to a broad respondent base, improving representativeness across industries. By applying statistical analysis methods, such as regression and ANOVA, the research identifies key influencing factors and improvement strategies. The rationale ensures that findings are evidence-based, measurable, and applicable to real-world project management practice.

6.3. Research Method

A survey-based research method was selected due to its suitability for gathering standardized data from a large respondent pool. The method allows respondents to express views on change request handling, process efficiency, challenges, and improvement opportunities. Closed-ended questions using a Likert scale ensured comparability and quantifiability of responses. Surveys were distributed electronically to increase accessibility, reduce time constraints, and facilitate wider participation. The method supports statistical analysis and interpretation of data trends across demographic and organizational variables. This approach is suitable for identifying perceptions and measurable relationships relevant to the study's objectives.

6.4. Research Strategy

This study employed a quantitative research strategy, allowing numerical analysis of responses related to change request handling processes. The strategy facilitated identifying significant variables affecting process effectiveness, operational challenges, and potential improvement strategies. A regression-based approach supported hypothesis testing and determination of factor influence levels. A cross-sectional strategy was appropriate because data was collected at a single point in time, capturing current practices rather than historical or future projections. The research strategy ensures objectivity, reduces bias, and supports reproducibility, making the findings useful for project management practitioners, researchers, and organizational leaders.

6.5. Designing the Questionnaire

The questionnaire was designed according to the study's three objectives and corresponding variables. It consisted of 18 primary statements divided into three sections: effectiveness of change request handling, challenges encountered, and strategies for improvement. Each item used a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5) to measure respondent attitudes. Demographic variables such as gender, age, qualification, experience, team size, role, and industry sector were included to allow comparison among respondent groups. Items were kept clear, concise, and unbiased to avoid misinterpretation. The questionnaire was reviewed by academic experts and pilot tested to ensure clarity, validity, and reliability. Feedback from the pilot test resulted in minor refinements before final deployment through an online survey platform, ensuring accessibility and improved participation rates.

6.6. Sampling Design

A purposive sampling technique was applied, targeting individuals with experience in handling project change requests. The sample included project managers, associates, program managers, and team leads from multiple industries. The final sample size consisted of 180 respondents, which is adequate for reliability testing, factor analysis, and inferential statistics.

6.7. Data Collection

Data was collected using an online questionnaire distributed through professional networks, email invitations, and project management forums. Participants were informed about the study purpose, confidentiality measures, and voluntary participation rights. No personal identification information was collected to ensure anonymity. The survey remained open for four weeks, and reminders were issued to improve response rates.

Table 1: Variables

Variable Type	Variables
Dependent Variables	Process Effectiveness, Impact of Challenges, Improvement Impact
Independent Variables	Tools & Technology, Standardization, Workflow Awareness, Training, Approval Transparency, Communication Quality, Approval Hierarchy, Requirement Clarity, Processing Time, Resource Availability, Automation, Process Simplification, Training Effectiveness, Communication Improvement, Resource Allocation

6.8. Type of Study

Cross-sectional observational study.

6.9. Data Analysis

Data was analyzed using descriptive statistics such as frequency tables to summarize demographics. Reliability analysis using Cronbach's Alpha assessed internal consistency of questionnaire items. Inferential statistics including ANOVA, regression, and coefficient testing were used to measure the strength of relationships between variables. The analysis was performed using SPSS.

7. Results

Table 2: Demography

category	Parameters	Frequency	Percent	category	Parameters	Frequency	Percent
Gender	Male	102	56.7 %	**Type of Industry**	Healthcare	28	15.6 %
	Female	78	43.3 %		Other	10	5.6 %
	Total	180	100.0 %		Construction	39	21.7 %
					Government/Public Sector	43	23.9 %
Team Members	below 10 members	43	23.9 %		Information Technology	27	15.0 %
	Above 30 members	43	23.9 %		Manufacturing	12	6.7 %
	10-20 members	60	33.3 %		Education	21	11.7 %
	21-30 members	34	18.9 %		**Total**	**180**	**100 %**
	Total	**180**	**100 %**				
Age Group	26–30 Year	46	25.6 %	**Experience**	Less than 5 years	76	42.2 %
	41–50 Year	30	16.7 %		More than 15 years	20	11.1 %
	31–35 Year	62	34.4 %		5-10 years	39	21.7 %
	36–40 year	42	23.3 %		10-15 years	45	25.0 %
	Total	**180**	**100 %**		**Total**	**180**	**100 %**
Qualification	Master's Degree	74	41.1 %	**Designation**	Team Lead	54	30.0 %

International Scientific Journal of Engineering and Management
Volume: 03 Issue: 01 | Jan – 2024
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

ISSN: 2583-6129
DOI: 10.55041/ISJEM01350

Other	26	14.4 %		Program Manager	29	16.1 %
Doctorate (PhD)	43	23.9 %		Associate Project Manager	62	34.4 %
Bachelor's Degree	37	20.6 %		Project Manager	35	19.4 %
Total	**180**	**100 %**		**Total**	**180**	**100 %**

The demographic distribution of the 180 respondents provides essential context for interpreting change request handling practices among project managers. The sample consists of 56.7% male and 43.3% female participants. Most respondents fall within the age range of 31–35 years (34.4%), followed by those aged 36–40 years (23.3%) and 26–30 years (25.6%), reflecting a predominantly mid-career workforce. Educational qualifications indicate a highly skilled group, with 41.1% holding a Master's degree and 23.9% holding a PhD. Professional experience levels are balanced, with 42.2% having less than five years of experience and 46.7% having 5–15 years. Team structures also vary, with 33.3% managing teams of 10–20 members and equal representation (23.9%) managing either fewer than 10 or more than 30, highlighting diversity in project scope and complexity.

Organizational roles and industry representation further enhance understanding of the respondents' context. Most participants serve as Associate Project Managers (34.4%) or Team Leads (30%), indicating strong operational involvement, while 19.4% hold Project Manager roles and 16.1% work as Program Managers, demonstrating leadership engagement. Industry participation is diverse, led by Government/Public Sector (23.9%) and Construction (21.7%), followed by Healthcare (15.6%) and Information Technology (15%). Smaller contributions come from Education (11.7%), Manufacturing (6.7%), and other sectors (5.6%). Overall, this broad and diverse sample provides a strong foundation for analyzing how change request handling processes vary across organizational settings.

Objective 1: To examine the effectiveness of change request handling processes used by project managers.

Table 3: Model Summary for objective 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605[a]	.366	.348	1.068

a. Predictors: (Constant), Approval Transparency, Training, Standardization, Workflow Awareness, Tools & Technology

Table 4: ANOVA for objective 1

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	114.520	5	22.904	20.080	.000[b]
Residual	198.475	174	1.141		
Total	312.994	179			

a. Dependent Variable: Process Effectiveness
b. Predictors: (Constant), Approval Transparency, Training, Standardization, Workflow Awareness, Tools & Technology

The results for Objective 1 indicate that the model used to assess the effectiveness of change request handling processes among project managers is statistically significant. The R value of .605 reflects a moderate correlation between the predictors and process effectiveness. The R Square value of .366 shows that 36.6% of effectiveness is explained by approval transparency, training, standardization, workflow awareness, and technology tools. The adjusted R Square

(.348) also supports the model's reliability. The ANOVA results confirm significance, with an F-value of 20.080 and a p-value of .000, showing that the predictors collectively influence process effectiveness.

Table 5: Coefficients for objective 1

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.253	.303		.835	.405
Tools & Technology	.315	.068	.312	4.639	.000
Standardization	.127	.066	.127	1.921	.056
Workflow Awareness	.132	.068	.130	1.944	.054
Training	.172	.065	.176	2.643	.009
Approval Transparency	.155	.065	.158	2.402	.017

a. Dependent Variable: Process Effectiveness

The coefficient results for Objective 1 indicate that multiple factors influence the effectiveness of change request handling among project managers. Tools and Technology demonstrate the strongest and most significant effect ($\beta = .312$, $t = 4.639$, $p = .000$), showing that enhanced technological support greatly improves process efficiency. Training also plays a meaningful role ($\beta = .176$, $t = 2.643$, $p = .009$), suggesting that skill development increases effectiveness. Approval Transparency ($\beta = .158$, $t = 2.402$, $p = .017$) is another significant predictor, indicating that clear approval processes support better outcomes. Workflow Awareness ($\beta = .130$, $t = 1.944$, $p = .054$) and Standardization ($\beta = .127$, $t = 1.921$, $p = .056$) approach significance, implying moderate but not fully confirmed effects. Overall, technological support, training, and approval transparency are key contributors to effective change request management.

Objective 2: To identify key challenges affecting change request handling in project environments.

Table 6: Model Summary for objective 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452[a]	.205	.182	1.201

a. Predictors: (Constant), Resource Availability, Processing Time, Communication Quality, Approval Hierarchy, Requirement Clarity

Table 7: ANOVA for objective 1

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	64.531	5	12.906	8.952	.000[b]
Residual	250.864	174	1.442		
Total	315.394	179			

a. Dependent Variable: Impact of Challenges

b. Predictors: (Constant), Resource Availability, Processing Time, Communication Quality, Approval Hierarchy, Requirement Clarity

The findings for Objective 2 reveal that the model identifying key challenges in change request handling is statistically significant. The R value of .452 indicates a moderate relationship, while the R Square value of .205 shows that 20.5% of the variation is explained by resource availability, processing time, communication quality, approval hierarchy, and

requirement clarity. The adjusted R Square (.182) supports the model's reliability. ANOVA results further confirm significance, with an F-value of 8.952 and a p-value of .000, demonstrating a meaningful collective impact.

Table 8: Coefficients for objective 1

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.902	.361		2.501	.013
Processing Time	.161	.073	.163	2.208	.029
Communication Quality	.196	.076	.187	2.587	.010
Requirement Clarity	.044	.072	.045	.606	.546
Approval Hierarchy	.194	.076	.188	2.569	.011
Resource Availability	.125	.070	.129	1.780	.077

a. Dependent Variable: Impact of Challenges

The coefficient analysis for Objective 2 shows that several challenges significantly affect change request handling in project environments. Communication Quality (β = .187, t = 2.587, p = .010) and Approval Hierarchy (β = .188, t = 2.569, p = .011) emerge as key influential factors, indicating that unclear communication and complex approval layers strongly hinder the process. Processing Time also has a significant effect (β = .163, t = 2.208, p = .029), suggesting delays negatively impact efficiency. Resource Availability (β = .129, t = 1.780, p = .077) shows a weaker, borderline effect, while Requirement Clarity (β = .045, t = .606, p = .546) is not statistically significant, indicating minimal direct impact.

Objective 3: To determine strategies that can improve change request handling efficiency.

Table 9: Model Summary for objective 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.510[a]	.260	.239	1.158

a. Predictors: (Constant), Resource Allocation, Process Simplification, Communication Improvement, Training Effectiveness, Automation

Table 10: ANOVA for objective 1

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	82.070	5	16.414	12.245	.000[b]
Residual	233.241	174	1.340		
Total	315.311	179			

a. Dependent Variable: Improvement Impact
b. Predictors: (Constant), Resource Allocation, Process Simplification, Communication Improvement, Training Effectiveness, Automation

The results for Objective 3, which aimed to determine strategies that can improve change request handling efficiency, indicate that the regression model is statistically significant. The Model Summary shows an R value of .510, reflecting a moderate positive association between the proposed strategies and their impact on improvement. The R Square value

International Scientific Journal of Engineering and Management
Volume: 03 Issue: 01 | Jan – 2024
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

ISSN: 2583-6129
DOI: 10.55041/ISJEM01350

of .260 demonstrates that 26% of the variance in improvement impact is explained by resource allocation, process simplification, communication improvement, training effectiveness, and automation. The adjusted R Square value of .239 further supports the strength and reliability of the model. The ANOVA results confirm the significance of the relationship, with an F-value of 12.245 and a p-value of .000, indicating that the predictors collectively contribute meaningfully to improving efficiency in change request handling processes.

Table 11: Coefficients for objective 1

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.558	.346		1.611	.109
Automation	.146	.073	.146	2.000	.047
Communication Improvement	.098	.069	.098	1.428	.155
Training Effectiveness	.223	.073	.220	3.060	.003
Process Simplification	.193	.068	.199	2.817	.005
Resource Allocation	.144	.072	.142	2.000	.047

a. Dependent Variable: Improvement Impact

Based on the standardized coefficient results, Training Effectiveness has the strongest influence on improving change request handling efficiency ($\beta = .220$, t = 3.060, p = .003), indicating it is a key driver of improvement. Process Simplification is the second most impactful factor ($\beta = .199$, t = 2.817, p = .005), suggesting that reducing procedural complexity significantly enhances efficiency. Automation ($\beta = .146$, t = 2.000, p = .047) and Resource Allocation ($\beta = .142$, t = 2.000, p = .047) also show significant contributions. However, Communication Improvement ($\beta = .098$, t = 1.428, p = .155) is not statistically significant, indicating a limited direct effect.

Table 12: Reliability

S. No	Parameters	No. of items	Cronbach's alpha
1	Evaluate Change Process Effectiveness	6	.735
2	Identify Challenges in Handling	6	.660
3	Enhance Change Request Efficiency	6	.675
4	Overall	18	.871

The reliability analysis presented in Table 11 shows acceptable internal consistency for the measured constructs. The parameter Evaluate Change Process Effectiveness recorded a Cronbach's alpha of .735, indicating a good level of reliability. The parameter Identify Challenges in Handling achieved a Cronbach's alpha of .660, while Enhance Change Request Efficiency showed a similar reliability level with .675. Both values fall within the acceptable range for exploratory research. The overall reliability score for all 18 items combined is .871, which reflects a high level of consistency and indicates that the scale used for measuring the variables is reliable and suitable for further analysis.

8. Conclusion

The findings of this study provide a comprehensive understanding of change request handling practices among project managers and highlight key influencers, challenges, and improvement strategies within diverse organizational environments. The demographic results confirm that the participant group was diverse, well-qualified, and experienced, with representation from various industries, job roles, and team structures, making the study's findings both relevant and

generalizable. The analysis of Objective 1 demonstrated that the effectiveness of change request handling processes is significantly influenced by several predictors, with tools and technology, training, and approval transparency emerging as the most influential factors, supported by a statistically significant regression model ($R = .605$, $R^2 = .366$, $p = .000$). For Objective 2, the study identified key challenges impacting efficiency, with communication quality, approval hierarchy, and processing time showing significant influence on the overall impact of challenges ($R = .452$, $R^2 = .205$, $p = .000$), whereas requirement clarity showed no meaningful effect. Finally, Objective 3 identified practical strategies to enhance change request handling, where training effectiveness and process simplification were found to be the most impactful improvement drivers, followed by automation and proper resource allocation ($R = .510$, $R^2 = .260$, $p = .000$). The overall reliability score of .871 confirms strong internal consistency across the study's measurement constructs. Collectively, the results indicate that improving technological support, strengthening communication structures, simplifying processes, and investing in training can significantly enhance the efficiency and effectiveness of change request management in project-based environments.

References

1. Gaber, A. M., Mazen, S., & Hassanei, E. E. (2015). Framework for Integrating Software Project Tasks and Change Requests. International Journal of Computer Applications, 975, 8887.

2. Mejlænder-Larsen, Ø. (2017). Using a change control system and building information modelling to manage change in design. Architectural Engineering and Design Management, 13(1), 39-51.

3. Lal, N. (2020). Change Management in ERP Implementation. Available at SSRN 3672795.

4. Gaber, A. M., Mazen, S., & Hassanein, E. E. (2016). Comparative Study for Software Project Management Approaches and Change Management in the Project Monitoring & Controlling. International Journal of Advanced Computer Science and Applications, 7(2).

5. Tariq, S., & Khan, A. (2021). Change Management in a Global Distributed Environment (Process & Challenges)

6. Hafeez, Y., Riaz, M., Asghar, S., Naz, H., Gilani, S. M. M., Batool, A., ... & Hassan, M. S. (2012, December). A requirement change management framework for distributed software environment. In 2012 7th International Conference on Computing and Convergence Technology (ICCCT) (pp. 944-948). IEEE.

7. Teah, T. S., Wong, W. Y., & Beh, H. C. (2019, December). The Practical Implication of Software Quality Assurance of Change Control Management: Why Overall IT Project Activities Matters?. In 2019 IEEE 7th Conference on Systems, Process and Control (ICSPC) (pp. 131-136). IEEE.

8. Castaneda, R. A. R., Ostrosi, E., Sagot, J. C., & Stjepandic, J. (2020). An Approach for Agile Engineering Change Management Within Global Product Development. In TE (pp. 584-593).

9. Jackie, K., Al-Ibaisi, L., Shaker, S., & Hassan, Y. (2019). Change Request Management and Best Practices in IngeniousTec IT Project Management. In The Digital Project Management Evolution (pp. 17-26). Productivity Press.

10. 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.

11. Shafiq, M., Zhang, Q., Akbar, M. A., Khan, A. A., Hussain, S., Amin, F. E., ... & Soofi, A. A. (2018). Effect of project management in requirements engineering and requirements change management processes for global software development. IEEE Access, 6, 25747-25763.

12. Perrotta, D., Faria, J., Araájo, M., Tereso, A., & Fernandes, G. (2017, December). Project change request: A proposal for managing change in industrialization projects. In 2017 ieee international conference on industrial engineering and engineering management (ieem) (pp. 1525-1529). IEEE.

13. Jackie, K., Al-Ibaisi, L., Shaker, S., & Hassan, Y. (2019). Change Request Management and Best Practices in IngeniousTec IT Project Management. In The Digital Project Management Evolution (pp. 17-26). Productivity Press.

14. Butt, S. A., & Jamal, T. (2017). Frequent change request from user to handle cost on project in agile model. Proc. of Asia Pacific Journal of Multidisciplinary Research, 5(2), 26-42.