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Barriers to the Adoption of Agile Project Management in Nepali IT Firms: Evidence from the TOE Framework

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Abstract
Agile Project Management (APM) is becoming more popular and has gained global recognition for ways it can adapt and manage projects and deliver value in such dynamic environments. The implementation of Agile is a great challenge in developing countries like Nepal, though, there are tremendous benefits of using Agile. In this context, the study aims to investigate the barriers of Agile Project Management (APM) in IT organizations in Kathmandu Valley through the lens of Technology–Organization–Environment (TOE) framework. The study uses a correlational research design, and a nonprobability sampling technique was used in collecting data from the 280 IT professionals. The data were analyzed by using the Statistical Package for the Social Sciences (SPSS) version 25, to examine the relationships among the variables. The results indicate that the technological factors are the most significant barriers to the adoption of Agile Project Management whereas the organizational and environmental factors have a negligible correlation with the adoption of Agile. The contribution of this study lies in broadening the TOE framework in a developing economy like the IT industry of Nepal and the empirical evidence on technological constraints as a dominant factor in the adoption of Agile in that industry. The results also indicate that it is important to invest in the latest tools and the technological infrastructure and to develop skills to improve Agile implementation.

Keywords: Agile Project Management, IT companies, TOE Framework, Agile Barriers, SPSS, Technological Challenges

1. Introduction

In today's IT organizations a new paradigm has emerged for software development, called Agile Project Management (APM), in which the emphasis is on frequent delivery cycles, on-going customer feedback, and a built-in capability to adapt to changing project needs (Baird & Riggins, 2012). Unlike plan-driven approaches, such as the Waterfall model, which provides little flexibility after baselining the project requirements, Agile is a way to create value incrementally and adjust the direction of the development process as market needs evolve (Amajuoyi et al., 2024). APM has shown to be effective in various organizational and geographic settings and across multiple frameworks such as Scrum, Kanban, and Extreme Programming (XP) by improving project success rates, inter-team collaboration, and stakeholder satisfaction (Matcha & Avneesh, 2025).

In spite of this global trend, the use and successful institutionalization of APM is not automatic and universal. The past literature reports on ongoing challenges to implementing Agile in different industries, organizations and countries. Established organizational structures, cultures that fear risk, and routine create a formidable resistance to change (Kotter et al., 2021; Savitha & Kumar, 2025). Other complementary barriers are, in particular, lack of training provision, lack of clarity in the definitions of the roles in Agile, the difficulty in getting away from the legacy project management processes and the incompatibility between the Agile iterative process and the contractual process that usually applies in procurement (Nwachukwu & Boatengu, 2024). They are not limited to any particular level of the organization, as large organizations must deal with a combination of coordination problem and bureaucratic inertia, while small organizations struggle with the lack of resources and training. Most importantly, these barriers are exacerbated in developing economies due to the shortage of digital infrastructure, qualified practitioners of Agile, digital literacy of organizations and cultural factors, such as high-power distance, which make it difficult to sustain Agile adoption (Mattos et al., 2024).

Nepal's IT industry is a particularly instructive case in this context of a developing economy (Nepal, 2012). The industry has seen gradual growth over the last decade to cater to domestic and international markets and has seen increased interest on Agile frameworks to improve competitiveness and client responsiveness. Over the past decade, the industry has been growing steadily, reaching both domestic and international markets, and has experienced increased interest in Agile frameworks as a tool for increasing competitiveness and client responsiveness. However, it was from about 2014 onwards that these methodologies started to make meaningful strides (Shams et al., 2021), a lag which clearly indicates the structure and culture of the industry. There are substantial examples of APM benefits in the Nepali context when implemented effectively, as shown by the leading organizations, such as Deerwalk, F1Soft International, and Leapfrog Technology, that have successfully integrated APM into their work. Even the organizations utilize the APM, many structural barriers remain that hinder APM adoption, including hierarchical organizations with cultures that clash with Agile's team-driven approach; limited exposure to experienced Agile coaches and project managers (APM) (Prakash et al., 2024); many Nepali companies' offshore outsourcing orientation which disrupts the client-developer feedback loops essential to Agile's value proposition; and budget and infrastructure constraints that prevent investment in modern project management tooling and continuous integration systems (Dugbartey & Kehinde, 2025).

The implementation challenges have been described in previous research (Bhul, 2023) but have not been systematically investigated based on a theoretical framework to explain how barriers differ by organizational size and the mechanisms by which organizational context may hinder implementation. Similarly, the Moarefi and Janami (2025) demonstrated that beyond identifying knowledge gaps, research in this area needs to translate findings into actionable contextual knowledge of what

circumstances facilitate Agile. The Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990), which provides a theoretically coherent and empirically supported structure for analyzing technology adoption, has not been systematically applied in the Nepali context of the APM.

To fill these gaps, this study conducts a theoretical-based quantitative study to investigate the barriers for APM implementation in small, medium and large IT firms in Nepal. The study is based on the TOE framework and is guided by Diffusion of Innovation theory (Lundblad, 2003) and organizational culture theory (Hatch & Zilber, 2011) as a multi-level analysis of the variation in adoption patterns. The results are aimed at practitioners (project managers, organization decision makers) to provide an evidence-based diagnosis of the barriers likely to hinder successful use of Agile in the context of Nepal.

2. Literature Review

Agile Project Management is the current approach in software development, which in contrast to the linear plan-driven approach (Khalil & Khalil, 2023; Boehm et al., 2002) has properties that mark a difference in the process of producing software. Agile Project Management has successfully led to better team communication, faster feedback response, and increased project success rates in different organizational settings (Serrador & Pinto, 2015). This is a positive effect of the digitization, but there are also barriers for implementation worldwide. Organizational cultures that are hierarchical, lack of training, role ambiguity, resistance to change, and contractual rigidity are well reported as obstacles to Agile adoption and are also observed across industry and geography (Santoso et al., 2025). Most importantly, these impediments are not exclusive to resource-limited environments as even large tech companies in developed economies struggle with moving away from legacy approaches (Agbeyangi & Suleman, 2024).

In addition to the general difficulties encountered around the world, the adoption of APM is more difficult in developing economies due to the presence of other factors, such as poor digital infrastructure, low digital literacy, limited access to training on Agile, and cultural aspects such as high PDT (Banda, 2023). Agile has been embraced by several countries like India, Sri Lanka, and Brazil into their rapidly expanding software industries, but it remains a challenge for organizations in these settings to deal with the lack of expertise and organizational inertia. In Nepal, as in most developing nations, the IT sector is following this pattern, and only since around 2014 (Shams et al., 2021), has a systematic adoption of Agile has begun. Many of the top companies such as Deerwalk, F1Soft International, Leapfrog Technology, and Young Innovations have invested in Agile practices of Scrum-based delivery and continuous integration, which have proven to bring valuable to the business when implemented correctly. But these are still exceptions. In the larger industry context, the team-based approach to work, characteristic of Agile, is not supported by the high power distance culture prevalent in the sector (Panwar, 2015), the lack of qualified agile coaches in the industry hampers training provision, and the orientation of many Nepali firms towards offshore outsourcing disrupts Agile's direct developer-client feedback loop (Jawish et al., 2025). The adoption is restricted by other factors, such as funding restrictions, poor infrastructure and the loss of skilled professionals.

The empirical study of APM are conducted in Western context and are not transferable to Nepal's unique socio-economic and cultural situation. Similarly, there is no rigorous comparison of the Agile barriers in small versus medium and large-sized Nepali IT firms, even when there is evidence showing that firm size can have a significant impact on the outcomes of Agile adoption (Qureshi et al., 2023). Furthermore, the research on Nepal is largely descriptive and evidence-based research studies do not feature quantitative rigor in the sense that they do not lead to generalizable findings. Lastly, the

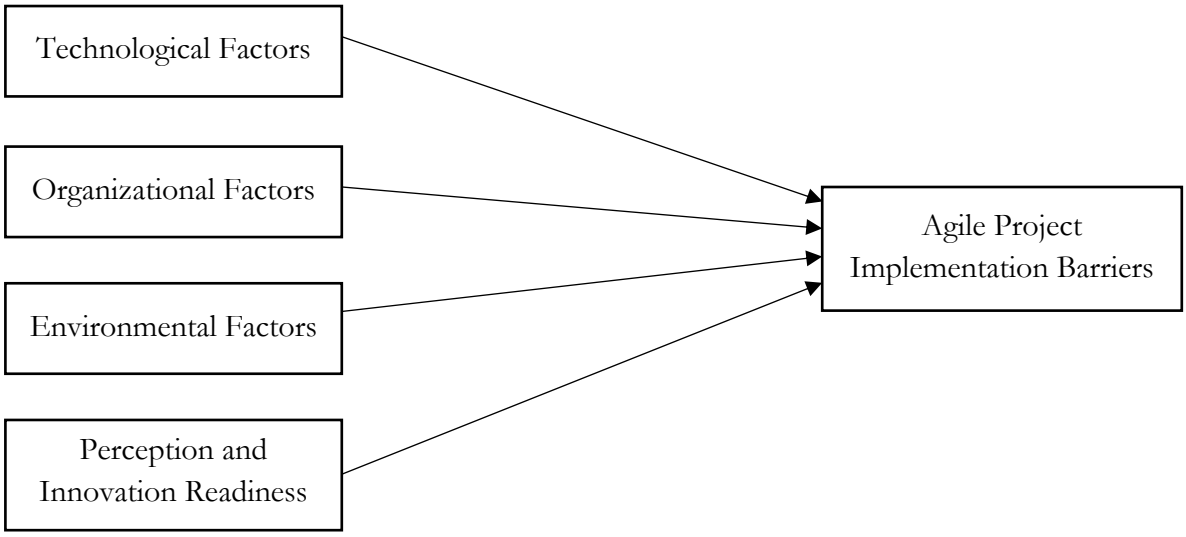
previous research on the APM barriers in Nepal has not adopted structured theories like TOE model to explain and analyse the barriers, which is less explanatory and less applicable to the real life situation. The present research is designed to fill these two gaps by investigating them from a theoretical perspective using a survey methodology.

Theoretical Framework

This study is based on the TOE (technology–organization–environment) model (Tornatzky & Fleischer, 1990), which views technology adoption as a function of technological, organizational, and environmental factors. Theoretical perspectives that are complementary are from Rogers (2003) Diffusion of Innovation (DOI) theory that explains variance of adoption based on perceived relative advantage, compatibility, complexity, trialability, and observability, and from organizational culture theory that identifies cultural configuration as one of the major factors predicting change readiness. The TOE framework encompasses an organizational perspective and is multi-dimensional in nature, which makes it best suited for the current study. Alternative models like TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003) offer insights at an individual level.

In the study different theories are reviewed and for this study Technology-Organization-Environment (TOE) model is used. This model explains that the three factors such as technology, organization and environment factors impact in the adoption of agile practices. From a technological standpoint, the TOE model can be used to uncover areas of concern like inadequate project management tools, weak IT infrastructure, legacy system integration issues, cyber security concerns, and lack of knowledge on agile methods such as Scrum or Kanban. Internally, it looks at barriers to change, culture, organizational management, poor training, poor communication, limited knowledge, and resource limitations. In the environmental arena, TOE examines the outside constraints that include customer requirements, competition, regulations, industry norms, vendor support, market uncertainty, and national culture. These can often be the most important obstacles, as collaboration, empowerment, and cultural change are critical to agile. Based on the theory the following conceptual framework is drawn.

Figure 1: *Conceptual framework of Agile Project Management implementation barriers*



Based on the conceptual framework, the following hypotheses are proposed:

H1: *Technological factors have a significant impact on Agile Project Management implementation barriers in Nepalese IT companies.*

H2: *Organizational factors have a significant impact on Agile Project Management implementation barriers in Nepalese IT companies.*

H3: *Environmental factors have a significant impact on Agile Project Management implementation barriers in Nepalese IT companies.*

H4: *Perception and innovation readiness have a significant impact on Agile Project Management implementation barriers in Nepalese IT companies.*

3. Research Methods

Study Area and Population

The research design for this study is the quantitative cross-sectional survey design that was used to investigate the barriers to Agile Project Management (APM) implementation in IT firms of Nepal. The study is based on the positivist epistemological approach, which assumes that organizational phenomena such as barriers to technology adoption are measurable, quantifiable, and are amenable to study which can lead to generalizable results. The study area is Kathmandu Valley, the main geographic and economic center of the IT industry in Nepal, and it has the highest density of software development companies, IT consultancies and technology start-ups in the country (Shrestha, 2024). It is complemented by the Valley's status as the hub of industry and as an educational hub with universities, professional colleges and Agile training institutes that provide contact with practitioners who have first-hand, applied experience with the Agile frameworks. In the Valley, many organizations are in the process of moving away from the "waterfall" type of project management to a more Agile approach, which is a fitting environment for discussing barriers to implementation as they arise. Target population includes software developers, software testers, project managers, Scrum Masters and technical and managerial staff working in IT firms in Kathmandu Valley.

Sample Size Determination

Since there is no complete sampling frame that lists the total population of IT professionals in Kathmandu Valley, the purposive sampling method, classified as non-probability sampling, was used, because the knowledge of study material is required to join the study (Creswell, 2014). The sample size required was calculated with the Cochran's formula for the proportional estimation (Cochran, 1977): $n_0 = (Z^2 \times p \times q) / e^2$ where $Z = 1.96$ (95% confidence level); $p = q = 0.5$ (maximum variance assumption if there are no estimates for the population); and $e = 0.06$ (6% margin of error). This gives an approximate value of $n_0 = 266.78$. Based on the expectation of non-response of 5% a target sample size of 280 respondents was established.

Research Instrument and Data Collection

In this study structural questionnaire was taken as the research instrument. Structured questionnaires are a quantitative research tool in which few researcher engagement and have a high number of respondents (the individuals who answer the questions) (Roopa, 2012). A structure questionnaire has been developed to conduct a survey for collecting the primary data. The researcher has connected the questionnaire with the objectives made in the study. The study has used closed ended question to find

the answer in a simple and understandable form. After formation of questionnaire research focused on the sequencing and arrangement of questionnaire. Kobo Toolbox is used for the data collection after the formation of structural questionnaire. In the Kobo Toolbox questionnaire will be inserted and a pilot testing is done for few samples questions to check the consistency and accuracy.

A pilot testing is done from 10 samples to take feedback as the questionnaire will be well fitted or not. The use of Kobo Toolbox is helpful for collecting data through both medium online and offline. It is also helpful for cost saving as data can be inserted through mobile device.

Model Specification

A multiple linear regression model was specified based on the analytical logic of the TOE to explore the relationship between barrier categories and the outcomes of APM implementation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Y is the dependent variable, APM Implementation, X_1 is the independent variable Technological Factors, X_2 is the independent variable Organizational Factors, X_3 is the independent variable Environmental Factors, β_0 is the regression constant, $\beta_1 – \beta_3$ are the partial regression coefficients, and ε is the error term. Data analysis performed in SPSS in 3 steps: descriptive statistics to describe the sample and the distribution of the responses for the barriers; reliability analysis (Cronbach's alpha) to test the internal consistency of the barriers; multiple regression analysis to estimate the independent contribution of the barriers to the outcomes of the APM implementation. Logically, it was decided to explore the difference in barrier patterns between small, medium and large organizations, as demonstrated in previous comparative studies to have an impact on the dynamics of Agile adoption (Ramadan & Al-Ani, 2018).

4. Result of the Study

Descriptive statistics have been carried out and the data has been identified based on the respondents' demography and exposure to Agile practices. The findings revealed a balance of the respondents in terms of the size, roles and types of IT firms. The organizations, in general, were open to Agile practices to some extent such as Scrum and Kanban. The results also suggested that the adoption of Agile in an organization depends on the organization with some opting to use Agile adoption in all processes whereas others use a mixture of both methods.

Table 1: *Socio-Demographic Details*

Category	Key Findings	Percentage (%)
Firm Size	Medium firms dominate	42.86
	Small firms	35.71
	Large firms	21.43
Position	Developers/Testers	32.14
	Project Managers	28.57
	Scrum Masters	21.43
Type of Firm	Software Development	42.86
	IT Consulting & Others	Remaining
Agile Usage	Yes	82.14
	Partial/No	17.86

Primary Method	Scrum	57.14
	Kanban/Hybrid	42.86
Facing Barriers	Yes	82.14
Top Barriers	Resistance to change	75.00
	Lack of management support	64.29
	Lack of Agile training	60.71
	Management support	91.67
	Training & coaching	91.67
Solutions	Management support	91.67
	Training & coaching	91.67

The descriptive analysis indicates that Agile Project Management is widely adapted in the IT companies in Nepal as more than 82% of the participants mentioned they are using Agile project management methods. In spite of this extensive usage of Agile, many of the respondents experienced problems in implementing Agile, a majority (89.29%) reported challenges in implementing Agile. Based on the list of barriers, some of the critical barriers are seen as resistance to change, lack of management commitment, lack of Agile training, etc. The results further indicate that the medium enterprises are the ones that are at the peak of implementing Agile.

Inferential Analysis

To determine the underlying structure of variables and to cluster the similar items into meaningful factors, Exploratory Factor Analysis (EFA) was performed prior to testing the hypotheses. EFA can be used to make sense of the data by reducing the number of variables to a smaller number of dimensions, thus providing more easily interpretable results. It is especially helpful when the pattern of relationships between variables is not known. Both Kaiser–Meyer–Olkin (KMO) Test and Bartlett's Test of Sphericity were used to test the appropriateness of the data for factor analysis. Also, reliability analysis by Cronbach's alpha, factor loading and variance explained were analyzed. The values below indicate the threshold values that are being kept in the study.

KMO and Bartlett's Test

The appropriateness of the data was checked using KMO Test and Bartlett's Test of Sphericity prior to factor analysis. The minimum acceptable KMO values for factor analysis is 0.5 (Hadi et al., 2016), and the obtained KMO value for this study was 0.503, so the sampling was adequate. The Bartlett's test of sphericity gave a result of Chi square 166.742 and a significance value of 0.000 (Eze et al., 2021) indicating that all the variables are sufficiently correlated to perform factor analysis.

Table 2: *KMO and Bartlett's Test*

Test	Value
KMO Measure of Sampling Adequacy	0.503
Bartlett's Test Chi-Square	166.742
df	10

Significance (p-value)	0

Communalities

Communalities show what percentage of the variance for each variable is due to the factors extracted. The communalities are high, indicating good representation by the variables. From the results, we can see that Technical Challenges (0.816) and Agile Project Implementation Barriers (0.812) have high values of extraction, which mean that these variables are very well represented by the extracted factors. Environmental Factors also have medium representation of 0.546. Perception Related Issues (0.367) and Organizational Factors (0.321) on the other hand are comparatively less represented by the factors. The results show that the majority of the variables are moderately explained by the factors obtained.

Table 3: *Communalities*

Variables	Initial	Extraction
Technical Challenges (TC)	1	0.816
Organizational Factors (OF)	1	0.321
Environmental Factors (EF)	1	0.546
Perception Related Issues (PIR)	1	0.367
Agile Project Implementation Barriers (APIB)	1	0.812

Total Variance Explained

The Total Variance Explained shows the amount of variance captured by the factors extracted from the data. The first component accounts for 33.668% of the variance and the second component accounts for 23.572% of the variance from the results. Both these two together explain 57.240% of the overall variation in the data set. The cumulative variance explained is more than 50%, so the factors extracted can be deemed sufficient for the variables that have been included in the study. The third and fourth components account for 19.193% and 16.673% of the variance, respectively, and the fifth component accounts for just 6.894%. This shows that the first two components have the most variance, and thus have the greatest influence on the data structure. Based on the factor analysis results, therefore the results implied that the extracted factors were meaningful and adequate for further analysis of Agile Project Management implementation barriers.

Table 4: *Total Variance*

Component	Initial Eigenvalues (Total)	% of Variance	Cumulative %
1	1.683	33.668	33.668
2	1.179	23.572	57.24
3	0.96	19.193	76.433
4	0.834	16.673	93.106
5	0.345	6.894	100

Reliability Analysis

A reliability analysis was conducted to assess the reliability of the items on the questionnaire. The Cronbach's Alpha was used to determine reliability. Cronbach's alpha was used for reliability analysis of the questionnaire for internal consistency. Generally, values greater than 0.70 are acceptable. As indicated in Table 5, the reliability of most constructs is acceptable, with Technical Challenges being 0.722, Organizational Factors being 0.820, Environmental Factors being 0.760 and Perception and Innovation Readiness being 0.730. The overall reliability of the instrument is also acceptable (0.715). However, the Cronbach's alpha coefficient of the construct "Agile Project Implementation Barriers" has a poor value of internal consistency (0.522). This can be attributed to either lack of consistency of the responses or low correlation of the items. Hence, this construct needs to be taken with a pinch of a salt and might need improvement in future research.

Table5: *Reliability Analysis*

Construct	Cronbach's Alpha	No. of Items	Decision
Technical Challenges (TC)	0.722	5	Acceptable
Organizational Factors (OF)	0.82	9	Good
Environmental Factors (EF)	0.76	6	Acceptable
Perception & Innovation Readiness (PIR)	0.73	6	Acceptable
Agile Project Implementation Barriers	0.522	5	Low Reliability
Overall Reliability	0.715	—	Acceptable

Regression Analysis

A regression analysis was performed to understand the impact of the four factors: Technical Challenges, Organizational Factors, Environmental Factors, and Perception and Innovation Readiness on Agile Project Implementation Barriers. The value of R is 0.654, which means that there is a moderate positive correlation between the independent variable and the dependent variable. The R Square value is 0.427 and 42.7% of the variation in the dependent variable Agile Project Implementation Barriers is explained by the independent variables of the model, and the Adjusted R Square value of 0.419 indicates that 41.9% of the variation is still explained by the independent variables of the model. The small difference between R Square and Adjusted R Square indicates the stability of the model and gives a good indication of relevance for the model to explain Agile project implementation barriers.

ANOVA Test

The overall significance of the regression model was tested by the ANOVA test. The results obtained show that the model is statistically significant based on the obtained F-value is 51.320 and the significance level is 0.000. The p-value is below 0.05, indicating that the regression model is a good fit for the data. This result implies that the independent variables overall have a meaningful effect on Agile Project Implementation Barriers, as they together explain the differences in the dependent variable.

Table 6: *ANOVA Test*

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	564.065	4	141.016	51.32	0
Residual	755.646	275	2.748		
Total	1319.711	279			

Coefficients Analysis

The coefficients table shows individual coefficients for each independent variable. The regression results shows that the most influential factor is Technical Challenges (β = 0.651, p = 0.000), that is, the higher the technical challenges, the higher the implementation barriers of Agile Project Management. Organizational Factors, on the other hand, has a positive and not significant relationship (β = .060, p = .196) and has no significant effect on the barriers to Agile Project Implementation in this study. This is similar with Environmental Factors where the beta value was found to be negative (-0.025) with insignificant (p = 0.589) relationship with the dependent variable. The Perception Readiness Issues also affect negatively but not significantly (β = -0.013, p = 0.772), which means that it does not contribute meaningfully to the explanation of the barriers to the implementation of Agile. Overall, the results suggest that Technical Challenges are the only predictors with a significant effect on the barriers of Agile Project Management, whereas the other factors are not statistically significant.

Table 7: *Coefficients Analysis*

Variables	Unstandardized Coeff.	Std. Error	Stand. Coeff.	t-value	Sig. (p-value)
Constant	9.396	3.307		2.842	0.005
Technical Challenges (TC)	0.623	0.044	0.651	14.173	0.000
Organizational Factors (OF)	0.074	0.057	0.06	1.296	0.196
Environmental Factors (EF)	-0.032	0.059	-0.025	-0.541	0.589
Perception Readiness Issues (PIR)	-0.02	0.068	-0.013	-0.291	0.772

The study made several hypotheses to investigate the relationship of various barriers and Agile Project Management implementation in IT companies of Nepal. The hypotheses were tested through statistical analysis using SPSS software to find out the significance of the hypotheses. Based on the above, the first hypothesis (H1) was postulated that Technical Challenges have significant impact on implementing Agile Project Management. Technical challenges are those pertaining to technology, development environments and needed skill sets to adopt Agile. The findings revealed a statistically significant relationship at $p<0.05$ which means that infrastructure, technology, and necessary skills are significant constraints to the implementation of Agile. Hence, H1 is accepted. The second hypothesis (H2) is that Organizational Factors have a significant impact on implementing Agile Project Management. They are factors like organizational culture, employee competencies, internal communication in IT organizations, and management support. The results showed however that there

is no significant relationship ($p > 0.05$), meaning that the organizational factors do not significantly contribute to the barriers of Agile in this context. Therefore, answer H2 is rejected. The third hypothesis (H3) proposed that Environmental Factors have significant impacts on the implementation of Agile Project Management. Some of these factors involve competition in the market, customer needs, and trends that could impact how Agile is being embraced. The results indicated that there was no significant effect from the environmental factors ($p>0.05$). Thus, the assertion H3 is false. The fourth hypothesis (H4) suggested that the Perception and Innovation Readiness have significant impact on the implementation of Agile Project Management. It's the attitude of their employees towards Agile methodologies and the readiness of the organisation to use innovative project management practices. The outcomes showed no mean relationship ($p > 0.05$) and H4 was rejected.

5. Discussion

The aim of this research was to investigate the factors affecting the implementation of Agile Project Management in IT companies of Nepal focusing on Technical Challenges, Organizational Factors, Environmental Factors, and Perception and Innovation Readiness. This was achieved by employing a quantitative research design and the data was collected with a structured questionnaire. Analyzed data was obtained using SPSS software by applying inferential statistical techniques such as regression analysis to test the proposed hypotheses, determining the significance and strength of the relationship between the variables.

The results showed that Technical Challenges positively and significantly affect Agile Project Management implementation barriers for the findings of Hypothesis 1. It indicates that infrastructure, technological capability and technical skills are major challenges in implementing Agile in IT companies. The result is in line with Nair et al. (2019), who found that poor technological readiness is a major constraint for the implementation of Agile in developing IT environments. Likewise, Gandomani et al. (2015) identified technical challenges like the lack of skilled human resources, and poor IT infrastructure as significant impediments for Agile transformation. Hence, it can be concluded from this study that Technical Challenges is still a major constraint for implementing Agile in the IT scenario in Nepal.

The results for Hypothesis 2 showed that Organizational Factors are not a significant factor affecting the implementation barriers of Agile Project Management. This means that in this study environment, the management support, organizational culture, and organizational communication are not good predictors. This result contrasts with the study by Jivan et al. (2020) which concluded that organizational culture and leadership support are important factors that impact the Agile adoption. Therefore, the effects of organizational factors seem to be dependent on the situation and size of the organization. About Hypothesis 3, there was no significant difference found for the influence of Environmental Factors on Agile implementation barriers. This suggests that there is no strong evidence of influence of external factors like market competition, customer demand and industry trends for the adoption of Agile in the companies studied. This result is like what Srinivasan et al. (2020) reveal, where the external business environment had an insignificant relationship with the Agile practices in emerging IT markets.

For Hypothesis 4, Perception and Innovation Readiness were also found to have no significant effect on Agile Project Management implementation. This means that in this context, employee attitude and organisational readiness for innovation have little impact. This is consistent with the results of Mielcarek et al. (2025), who reported the weak relationship between innovation readiness and the

success of Agile in less mature IT companies. The study concludes that, out of all the factors examined, only Technical Challenges have a significant impact on the implementation of Agile Project Management in Nepali IT companies, whereas Organizational Factors, Environmental Factors, and Perception and Innovation Readiness do not show a significant impact in this context.

6. Conclusion

The study concludes that IT organizations should prioritize strengthening their technical infrastructure, enhancing employees' technical competencies, and ensuring adequate technological support systems to improve Agile implementation success. Managers and policymakers should focus on addressing skill gaps and improving technological readiness rather than relying solely on organizational or environmental adjustments. This study also provides useful insights for IT leaders in Nepal to better allocate resources toward technical capacity development for effective Agile transformation. For future research, it is recommended that studies expand the sample size and include IT companies from different regions or countries to improve generalizability. Future studies may also incorporate additional variables such as leadership style, project complexity, or organizational agility to provide a more comprehensive understanding of Agile implementation. Moreover, adopting mixed method approaches or longitudinal designs could help capture deeper insights and changes in Agile adoption over time, offering a more dynamic perspective on implementation barriers.

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