Global Journal of Business and Economic Innovations
https://journals.hu.edu.so/index.php/gjbei
GJBEI

AI-Enhanced Strategic Project Planning and Project Success in Institutions in Mogadishu, Somalia

Farhia Botan Gure*, Abdiwali Botan Gure, Fowzia Nur Shire
Faculty of Economics and Management Sciences, Lincoln University College, Malaysia

*Corresponding author's email: farhiya.botan@gmail.com

Abstract
This paper examines the relationship between AI-enhanced strategic project planning and project success in institutions operating in Mogadishu, Somalia. Drawing on a quantitative survey of 109 project practitioners from government agencies, non-governmental organizations (NGOs), and private sector organizations, the study uses multiple linear regression analysis to evaluate how AI tools can optimize scope, time, cost, risk, and resource management in a post-conflict, resource-constrained environment. The overall regression model was statistically significant, $F(3, 105) = 36.42$, $p < .001$, with the strategic planning dimensions collectively accounting for 51.0% of the total variance in institutional project success ($R^2 = 0.510$, adjusted $R^2 = 0.496$). Within the simultaneous model, strategic time and cost planning emerged as the strongest independent predictor of project success ($\beta = 0.354$, $t = 4.222$, $p < .001$), followed by risk and resource planning ($\beta = 0.226$, $p = .009$) and scope planning ($\beta = 0.192$, $p = .017$). These results underscore the operational necessity of grounding AI-enabled forecasting, predictive scheduling, and real-time contingency structures in local Mogadishu realities. The paper concludes that the adoption of intelligent project management tools can bridge the institutional "strategic gap" by moving organizations from reactive crisis mitigation toward adaptive, data-driven, and context-sensitive "adaptive realism." The findings offer evidence-based, actionable frameworks for practitioners, policymakers, and academic institutions seeking to leverage artificial intelligence for resilient project delivery in fragile and conflict-affected settings.

Keywords: Artificial intelligence (AI), Strategic project planning, Project success, Regression analysis, Fragile states

1. Introduction

The global project management landscape is undergoing a profound transformation driven by the rapid emergence of artificial intelligence (AI). AI-powered planning tools are increasingly used to automate scheduling, predict risks, optimize resource allocation, and enhance decision-making accuracy across industries. In developing and post-conflict economies such as Somalia, where resource constraints, institutional fragility, and security volatility create persistent project management challenges, AI presents a unique opportunity to bridge planning gaps and drive sustainable development outcomes.

Mogadishu, Somalia's capital, hosts a concentration of infrastructure, humanitarian, and development projects implemented by government agencies, international non-governmental organizations (NGOs), and development partners. Despite significant investments, many projects in Mogadishu suffer from scope creep, cost overruns, schedule

delays, and failure to meet stakeholder expectations. These outcomes are compounded by inadequate planning capabilities and limited access to evidence-based project management methodologies.

This paper argues that integrating AI into strategic project planning frameworks offers a critical pathway to improving project outcomes in such environments. By enhancing the accuracy of scope definition, enabling realistic scheduling through data-driven forecasting, and supporting integrated risk and resource planning, AI tools can address the "strategic gap" that currently undermines project performance in Mogadishu. This study is grounded in empirical data collected from 109 project practitioners across sectors in Mogadishu and contributes to the growing body of literature on AI applications in project management in fragile-state contexts.

The remainder of the paper is structured as follows. Section 2 reviews the literature, Section 3 describes the data and method, Section 4 presents the results and discussion, Section 5 concludes, and Section 6 offers recommendations.

2. Literature Review

2.1 Strategic Project Planning and Project Success

Strategic project planning is defined as the systematic integration of project management techniques with organizational strategic goals to ensure that projects are performance-driven and goal-oriented, connecting planning to execution and measurable results. When effectively implemented, strategic project planning improves productivity, encourages accountability, and raises the likelihood of achieving long-term organizational success.

Akinsulire et al. (2024) highlight the importance of strategic planning and investment analysis in ensuring the success and sustainability of affordable housing projects. Strategic planning facilitates a deeper understanding of community needs and market dynamics, which helps to set clear objectives, while investment analysis ensures financial viability and self-sufficiency by evaluating costs and mitigating risks. Despite challenges such as securing funding and navigating regulatory frameworks, collaboration among government, private investors, and the community is vital to delivering sustainable housing solutions that meet the needs of low-income populations (Akinsulire et al., 2024).

Project success is the effective accomplishment of project goals, which is directly driven by high team performance and the implementation of high-performance work practices. Furthermore, it is an outcome that is significantly influenced by the project manager's leadership style, whether it focuses on executing tasks (task-oriented) or on building workplace relationships (relationship-oriented) (Aliane & Sadiq, 2023).

2.2 Artificial Intelligence in Project Management

AI is rapidly reshaping the practice of project management. Machine learning algorithms can analyze historical project data to generate more accurate scope estimates, identify patterns of cost overrun, and forecast scheduling risks before they materialize.

AI has emerged as a transformative force in project management, reshaping traditional practices through intelligent automation, predictive analytics, and data-driven decision-making. Successful implementations have demonstrated AI's ability to enhance forecasting, optimize resource allocation, and strengthen risk assessment, ultimately driving efficiency and agility across industries. Although challenges such as data quality, investment uncertainty, workforce readiness, and change management remain barriers to adoption, the potential benefits are substantial. AI enables real-time monitoring, improves collaboration, and empowers managers to make smarter and faster decisions, positioning it as a critical tool for future project success (Savio & Ali, 2023).

In Africa, the application of AI is beginning to transform project management by improving decision-making, enhancing task execution, and strengthening risk management. While the global scientometric evidence shows a surge in publications on AI in project management, African contexts such as Ghana, Kenya, Nigeria, and Somalia face unique challenges, including limited workforce readiness, infrastructure gaps, and governance concerns. AI technologies such as machine learning, predictive analytics, and natural language processing can significantly improve efficiency in African projects, especially in construction, housing, and infrastructure. The rise of agentic and generative AI suggests a shift from passive support tools to active collaborators in project ecosystems, raising new questions about governance, accountability, and human–AI collaboration. For Africa, embracing these technologies responsibly could bridge resource gaps, accelerate development, and strengthen competitiveness in global value chains (Mogbojuri et al., 2026).

2.3 Strategic Project Planning in Somalia

Burale and Saroufim (2024) investigated how strategic planning influences the performance of SMEs in Bosaso, addressing a gap in the existing literature, where these enterprises have been largely overlooked despite their vital role in economic stability and development. Using a correlational design and quantitative surveys refined through a pilot test, the study found that structured planning significantly improves operational efficiency, resource allocation, and long-term viability. The results highlight that SMEs adopting formal strategic planning processes are better positioned to navigate challenges, seize growth opportunities, and achieve financial stability. Overall, the findings underscore the importance of strategic management practices for enhancing the sustainability and success of SMEs in Bosaso, offering valuable insights for Somalia's broader economic development.

3. Data and Method

This study adopted a quantitative, cross-sectional survey research design. A two-stage sampling design was employed to select participants. In the first stage, stratified sampling was applied across the target institutions, which included private firms, NGOs, public institutions, and construction companies in Mogadishu, to ensure cross-sectoral representation. In the second stage, purposive sampling was used within these strata to deliberately select respondents holding technical and administrative roles (such as project managers, supervisors, and financial officers) who possessed direct knowledge of institutional project operations.

The target population comprised $N = 150$ administrative and management professionals across the identified sectors. To determine the appropriate sample size, Slovin's formula was applied with a 5% margin of error ($e = 0.05$), which yielded a required sample size of $n = 109$ participants. Data were collected electronically via a structured Google Forms questionnaire consisting of 35 items, which captured both demographic characteristics and the objective-based measurement scales. The survey link was distributed directly to the 150 target professionals, and 109 fully completed responses were retrieved, yielding a response rate of 72.7%. All items were measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Content validity was ensured through expert review, which yielded a content validity index (CVI) of 0.86, confirming that the questionnaire items were highly relevant to the construct dimensions. Reliability was evaluated using Cronbach's alpha in SPSS to ensure internal consistency across the measurement scales. The analysis returned robust reliability coefficients: 0.82 for scope planning, 0.85 for time planning, 0.81 for cost planning, 0.79 for risk and resource planning, and 0.84 for project success, indicating acceptable to good reliability across all scales. The data were analyzed using descriptive statistics, Pearson correlation, analysis of variance (ANOVA), and multiple regression analysis in SPSS. Ethical approval was formally obtained, and all responses were treated with strict confidentiality.

4. Results and Discussion

4.1 Demographic Profile

Table 1: Demographic Profile of the Respondents (N = 109)

Characteristic	Category	*n*	%
Gender	Female	36	33.0
	Male	73	67.0
Education	Master's degree	55	50.5
	Bachelor's degree	32	29.4
	PhD	10	9.2
	Diploma	4	3.7
	Secondary	8	7.3

Note. Percentages may not sum to 100 because of rounding.

Table 1 presents the demographic profile of the 109 professional respondents operating within the project management landscape of Mogadishu, Somalia. Of the participants, 33.0% (n = 36) were female and 67.0% (n = 73) were male, representing a clear male majority within the sampled institutional leadership. In terms of educational qualifications, the sample reflects a highly educated respondent pool: 50.5% (n = 55) held a master's degree, 29.4% (n = 32) a bachelor's degree, 9.2% (n = 10) a PhD, and 3.7% (n = 4) a specialized diploma, while 7.3% (n = 8) had completed secondary education as their highest qualification. This strong lean toward postgraduate education (more than 59% held a master's degree or PhD) reflects the strong academic and professional capacity of project management professionals in Mogadishu.

4.2 Scope Planning and Project Success

Descriptive and inferential analyses evaluated the relationship between scope planning and project success. As summarized in Table 2, the composite construct for strategic scope definition yielded a mean score of 3.52 with a standard deviation of 0.99, indicating a moderate-to-high level of agreement among the surveyed institutions.

Table 2: Descriptive Summary for Scope Planning (N = 109)

Variable	*N*	*M*	*SD*	Tendency
Strategic scope planning	109	3.52	0.99	Moderate to high agreement

Frequency distributions revealed that 75.3% of respondents agreed that precise scope alignment has a significant impact on overall project success. Inferential testing validated this relationship: the Pearson product-moment correlation coefficient between strategic scope planning and project success was positive and statistically significant (r = .316, p < .01).

However, a substantial proportion of respondents (42.2%) explicitly noted that scope modifications occur frequently during project execution. This persistent reality highlights a major operational challenge in Mogadishu projects. These findings underscore the potential value of AI-powered scope management tools, which can automate the aggregation of stakeholder input, monitor scope change requests dynamically in real time, and automatically flag deviations to address this execution gap.

4.3 Time and Cost Planning and Project Success

Regarding timeline and budget parameters, the composite construct for time and cost planning showed an overall mean score of 3.64 with a standard deviation of 0.91 (Table 3).

Table 3: Descriptive Summary for Time and Cost Planning (N = 109)

Variable	*N*	*M*	*SD*	Tendency
Time and cost planning	109	3.64	0.91	High agreement

Within this construct, realistic scheduling emerged as the strongest single correlate of project success across all bivariate relationships examined (r = .437, p < .01). Despite this clear bivariate relationship, operational vulnerabilities remain highly prevalent: over half of the surveyed respondents reported that local projects frequently experience severe timeline delays and subsequent cost overruns. Furthermore, the descriptive data indicate that modern scheduling tools are not yet used effectively across the sampled institutions.

AI-enabled scheduling systems that incorporate machine learning-based forecasting offer a powerful technological solution to this gap in scheduling realism. By drawing directly on historical project datasets and processing local contextual variables, such as market price fluctuations and local administrative bottlenecks, these tools provide predictive insights tailored to Mogadishu's volatile project environment. AI-driven time–cost trade-off mechanisms could therefore help stabilize these project constraints.

4.4 Risk and Resource Planning and Project Success

Regarding project resilience under environmental uncertainty, the composite construct for risk and resource planning generated a mean of 3.41 with a standard deviation of 0.84 (Table 4).

Table 4: Descriptive Summary for Risk and Resource Planning (N = 109)

Variable	*N*	*M*	*SD*	Tendency
Risk and resource planning	109	3.41	0.84	Moderate agreement

Integrated risk and resource planning demonstrated a statistically significant, positive bivariate relationship with project success (r = .346, p < .01), acting as a critical correlate of stable project execution. Frequency distributions within this domain reveal that, while 61.5% of respondents agreed that structured risk assessments reduce execution uncertainty, resource availability remains a volatile operational constraint in Mogadishu. Specifically, 45.9% of the practitioners explicitly noted that unexpected budget spikes and logistics disruptions frequently affect project timelines.

4.5 Multiple Linear Regression Analysis

To evaluate the collective predictive influence and statistical significance of the independent variables (scope planning, time and cost planning, and risk and resource planning) on the dependent variable (project success), a standard multiple linear regression analysis was performed. This multivariable technique controls for the overlapping variance among the predictors, allowing an accurate assessment of each construct's unique contribution.

4.5.1 Model Summary

The overall regression model was statistically significant, $F(3, 105) = 36.42$, $p < .001$. This significant F-value indicates that the strategic planning variables jointly provide a statistically significant prediction of project outcomes.

The model produced a coefficient of determination (R^2) of 0.510, with an adjusted R^2 of 0.496 (Table 5). This establishes that the strategic project planning variables collectively explain 51.0% of the total variance in project success across the sampled institutions in Mogadishu. The remaining 49.0% of the variance is attributable to factors outside the scope of this baseline regression model.

Table 5: Regression Model Summary

Model	*R*	R^2	Adjusted R^2	*SE* of the estimate
1	0.714	0.510	0.496	0.4211

Note. Predictors: (constant), scope planning, time and cost planning, risk and resource planning. Dependent variable: project success.

4.5.2 Analysis of Variance (ANOVA)

To evaluate the collective statistical validity of the strategic planning framework, an analysis of variance (ANOVA) was performed as part of the regression procedure. As shown in Table 6, the overall regression model fit is highly significant, $F(3, 105) = 36.42$, $p < .001$.

Table 6: ANOVA Results

Model	Sum of squares	*df*	Mean square	*F*	*p*
Regression	19.342	3	6.447	36.42	< .001
Residual	18.591	105	0.177		
Total	37.933	108			

4.5.3 Regression Coefficients

To determine the unique predictive contribution of each strategic planning dimension when the dimensions are considered simultaneously, the standardized beta coefficients (β) from the multiple linear regression model were evaluated. As presented in Table 7, all three independent variables exert statistically significant positive effects on project success.

Strategic time and cost planning emerged as the strongest independent predictor of project success in the institutional environment (β = 0.354, $t = 4.222$, $p < .001$), followed by strategic risk and resource planning (β = 0.226, $t = 2.671$, $p = .009$) and strategic scope planning (β = 0.192, $t = 2.421$, $p = .017$).

Table 7: Regression Coefficients

Variable	*B*	*SE*	β	*t*	*p*
Constant	1.142	0.312	—	3.660	< .001
Scope planning	0.184	0.076	0.192	2.421	.017
Time and cost planning	0.342	0.081	0.354	4.222	< .001
Risk and resource planning	0.211	0.079	0.226	2.671	.009

Note. B = unstandardized coefficient; *SE* = standard error; β = standardized coefficient. Dependent variable: project success. Model summary: $R = 0.714$; $R^2 = 0.510$; adjusted $R^2 = 0.496$; $F(3, 105) = 36.42$; $p < .001$.

5. Conclusion

This study establishes that strategic project planning is a fundamental determinant of institutional project success within the volatile and resource-constrained environment of Mogadishu, Somalia. The empirical results demonstrate that strategic scope planning, integrated time and cost planning, and risk and resource planning collectively explain 51.0% of the variance in project success ($R^2 = 0.510$, adjusted $R^2 = 0.496$; $F(3, 105) = 36.42$, $p < .001$).

While all three planning dimensions exert statistically significant positive effects, strategic time and cost planning emerged as the strongest independent predictor in the simultaneous regression model ($\beta = 0.354$, $t = 4.222$, $p < .001$). This confirms that the precise calibration of execution schedules and financial parameters yields the highest marginal return on project sustainability in fragile environments.

A central conceptual contribution of this paper is the operationalization of "adaptive realism" as a guiding framework for modern project delivery. Adaptive realism is defined as an advanced project management posture that rejects rigid, static baseline assumptions in favor of dynamic, data-driven planning models capable of continuously absorbing environmental shocks while maintaining strategic alignment. The descriptive results showed that traditional, manual planning approaches leave institutions highly vulnerable to frequent scope modifications (42.2%) and severe logistics or budgetary disruptions (45.9%). This research therefore argues that technical project management frameworks are likely to remain insufficient in post-conflict settings unless they are reinforced by AI tools.

By moving institutions from reactive crisis management to proactive automation, AI-enhanced strategic planning bridges the critical "strategic gap," defined as the systematic failure to account for local operational disruptions and resource volatility during the initial formulation phase. Through the deployment of machine learning forecasting for realistic scheduling, natural language processing for dynamic scope tracking, and predictive algorithms for automated resource optimization, AI enables local managers to ground execution timelines in actual Mogadishu realities. Ultimately, embracing AI-driven adaptive realism offers a transformative socio-economic pathway that upgrades institutional capacity, ensures donor accountability, and accelerates sustainable development across fragile and conflict-affected states.

6. Recommendations

- **Automating timelines and resource allocation with Microsoft Project:** Institutions should leverage established software such as Microsoft Project to move away from manual workflow planning. Microsoft Project simplifies complex tracking by automatically calculating the critical path (the longest sequence of dependent tasks), tracking baseline costs, and dynamically updating Gantt charts to prevent the double-booking of resources.
- **Simplifying cloud collaboration using Airtable and AI:** For agile and cross-functional teams, organizations should implement Airtable integrated with its native AI extensions. Airtable acts as a flexible, cloud-based relational database that simplifies project tracking; its built-in AI assistant can automatically generate action items from raw notes, categorize project risks, and summarize status updates for stakeholder reporting. Other AI-powered project management tools, such as Jira AI, Asana AI, ClickUp AI, Monday AI, and Microsoft Copilot, are also recommended to improve collaboration, planning, and project monitoring.
- **Deploying AI for predictive scheduling and budgeting:** Project-driven enterprises should introduce advanced predictive AI tools to analyze historical data alongside local environmental factors. These algorithms can forecast realistic project completion dates and predict cost overruns before they affect the execution phase.
- **Implementing natural language processing for automated scope control:** To address unexpected scope adjustments during the project life cycle, managers should use natural language processing (NLP) extensions within their project platforms. These systems read communications and meeting briefs to compute instantly how a proposed change would alter the project's overall timeline and budget.

- **Empowering youth through productive AI integration:** Academic and professional institutions should launch dedicated initiatives to guide young people toward learning and using AI for tangible software creation, professional development, and practical skills, rather than primarily for entertainment, social media, or other purely recreational purposes.

Acknowledgements

I extend my profound gratitude to Almighty Allah for His countless blessings, guidance, and strength throughout this research journey. I am deeply thankful to my beloved mother and my family for their unwavering love, encouragement, and continuous support.

Most importantly, I, Farhia, honor the cherished memory of my late father, **Botan Gure Siyad** (may Allah have mercy on him and grant him the highest place in Jannah), whose inspiring words, "Work hard with your mind so you don't suffer with your back," have remained a constant source of motivation throughout my educational journey. His wisdom, values, and legacy continue to inspire me to pursue knowledge with dedication and perseverance.

I am also deeply grateful to my co-authors, Fowzia and Abdiwali, for their collaboration throughout this journey. Furthermore, we sincerely thank the organizing committee of the 1st Hormuud University International Hybrid Multidisciplinary Conference (HUMC 2026) for providing the opportunity and support.

Ethical Approval Statement

This study was approved by the Institutional Review Board of Hormuud University. Written informed consent was obtained from all participants, and anonymity and confidentiality were maintained throughout the data collection and analysis process. The data collected were used solely for academic purposes.

Conflict of Interests

The authors declare no conflict of interests.

References

Akinsulire, A. A., Idemudia, C., Okwandu, A. C., & Iwuanyanwu, O. (2024). Strategic planning and investment analysis for affordable housing: Enhancing viability and growth. *Magna Scientia Advanced Research and Reviews*, *11*(2), 119–131. https://doi.org/10.30574/msarr.2024.11.2.0114

Aliane, N., & Sadiq, M. (2023). Project success through high-performance work practices: Role of project manager leadership style and team performance. *The Journal of Modern Project Management*, *11*(2), 188–205.

Burale, M. A., & Saroufim, C. (2024). Strategic planning and its effect on the success of small and medium enterprises in Bosaso, Somalia. *International Journal of Scientific Research and Management*, *12*(8), 7213–7229. https://doi.org/10.18535/ijsrm/v12i08.em21

Mogbojuri, A., Obiseye, O., Wali, A., & Dewa, M. (2026). Artificial intelligence in project management: Challenges, strategies and best practices [version 2; peer review: 1 approved, 2 approved with reservations]. *F1000Research*, *14*, Article 1357. https://doi.org/10.12688/f1000research.169682.2

Savio, R. D., & Ali, J. M. (2023). Artificial intelligence in project management & its future. *Saudi Journal of Engineering and Technology*, *8*(10), 244–248. https://doi.org/10.36348/sjet.2023.v08i10.002