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Analyzing the Impact of Agile Management Practices on Organizational Efficiency and Employee Productivity in Emerging Economies

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ABSTRACT

***Purpose**: This study investigates the impact of agile management practices on organizational efficiency and employee productivity in emerging economies, with a focus on three key sectors: technology, manufacturing, and services. The research aims to determine how agile methods contribute to performance outcomes and whether sectoral differences influence their effectiveness.*

***Subjects and Methods:** Data were collected from 200 organizations, involving responses from 150 managers and 50 employees. A quantitative approach was employed, using regression analysis to examine the relationship between agile practices, organizational efficiency, and employee productivity across different industries.*

***Results:** The findings indicate that agile practices have a significant positive effect on organizational efficiency ($\beta = 0.56$, $p < 0.01$) and employee productivity ($\beta = 0.45$, $p < 0.01$). Technology companies demonstrated the highest levels of agile adoption and corresponding performance improvements, while manufacturing firms reported comparatively lower adoption rates and fewer benefits. Services organizations showed moderate improvements, reflecting contextual differences in implementation. These results underscore the importance of aligning agile frameworks with industry-specific dynamics to maximize effectiveness.*

***Conclusions:** Agile management enhances both efficiency and productivity, but its impact varies across sectors. Organizations in emerging economies should tailor agile adoption to industry needs for optimal results.*

INTRODUCTION

In recent years, the global business landscape has undergone profound transformation, driven largely by technological advancements, shifting market expectations, and evolving workforce dynamics (Usman et al., 2024; Omol, 2024; Lim, 2023). Organizations today operate in environments where change is constant, competition is intense, and customer demands continue to rise. Within this context, achieving and sustaining organizational efficiency has become a cornerstone of strategic success. Efficiency not only influences how well companies utilize their resources but also determines their capacity to innovate and respond to external pressures (Frishammar & Åke, 2005; Ombaka et al., 2015; Jakhar et al., 2019; Singh et al., 2020).

Employee productivity, closely linked to efficiency, has similarly become a critical determinant of organizational performance. As companies strive to remain competitive, the ability of employees to work effectively, collaborate seamlessly, and adapt to emerging challenges becomes

increasingly important. Productivity is no longer viewed solely through the lens of individual output, but rather as a complex interplay of organizational culture, workflow design, leadership style, and technological support.

To address these evolving demands, businesses have adopted a variety of managerial approaches over the years. Hitt et al. (1998) said that, traditional hierarchical models, while effective in stable environments, have struggled to keep pace with the speed and unpredictability of contemporary markets. This limitation has prompted organizations to seek more adaptive models that promote responsiveness, innovation, and empowerment at all levels of the workforce.

One of the most influential approaches in this regard is agile management. Emerging at the turn of the 21st century within the software development community, agile methodologies were introduced as a response to the rigidity and inefficiencies of traditional project management systems. Agile valued adaptability over strict planning, collaboration over siloed work, and iterative progress over linear execution (Rana, 2025).

As agile practices demonstrated remarkable success in improving project delivery, enhancing team communication, and accelerating innovation, interest in their broader applicability began to increase. Scholars and practitioners noted that the principles underlying agile flexibility, transparency, iterative learning, and customer-centricity were not limited to software development but were relevant to organizational management more generally (Tessema, 2025; Murugan, 2025).

Consequently, industries beyond information technology gradually began exploring agile as a solution to their own operational challenges. Sectors such as manufacturing adopted agile to streamline production cycles, healthcare organizations leveraged agile to enhance patient-centered care, and educational institutions used agile-inspired frameworks to redesign learning processes. This widespread application underscores agile's resonance across diverse organizational contexts.

Despite its growing popularity, the implementation of agile management outside the technology sector has not been straightforward (Goldman & Nagel, 1993). Different industries possess unique structural, cultural, and regulatory characteristics that influence how agile principles can be translated into practice. Furthermore, the success of agile often hinges on organizational readiness, leadership commitment, and the cultivation of a collaborative work culture (Ndou et al., 2024; Standahl & Karlsen, 2025).

These complexities are even more pronounced in emerging economies. Such contexts are frequently marked by resource limitations, infrastructural gaps, and fluctuating economic conditions. Organizations within these environments often operate with narrower margins for error and may lack the stability needed to fully embrace transformative management practices.

Emerging economies also face ongoing technological disruptions, which reshape industries at an unprecedented pace. According to Hasanah (2024), Businesses must navigate increasing digitalization, shifting consumer behaviors, and intensified regional competition. These pressures create both opportunities and challenges for organizations attempting to adopt agile methods as a means of improving operational outcomes.

Moreover, the workforce within emerging economies is evolving rapidly, characterized by growing youth participation, rising digital literacy, and expectations for more inclusive and adaptive workplaces. Agile management, with its emphasis on empowerment and teamwork, appears well suited to meet these changing workforce preferences (Grass et al., 2020). Yet empirical evidence detailing this alignment remains limited.

While agile methodologies have been extensively studied in developed economic contexts, where organizational infrastructures tend to be more robust and resources more abundant, far less is understood about how agile functions in environments marked by volatility and constraints. This gap in the literature raises important questions regarding the universality of agile principles and their adaptability across socioeconomic settings.

Existing research suggests that the benefits of agile such as enhanced responsiveness, improved communication, and increased innovation could be particularly valuable in high-uncertainty contexts. However, the absence of empirical studies makes it difficult to determine whether these potential advantages translate reliably to emerging economies, or whether contextual barriers inhibit the effectiveness of agile practices (Vijayasarathy & Turk, 2012).

This study therefore seeks to contribute to this underexplored area by examining the interplay between agile management practices, organizational efficiency, and employee productivity within emerging markets. By analyzing the experiences of organizations that have attempted to integrate agile principles into their operational systems, the study aims to identify both the opportunities and challenges associated with such efforts.

Ultimately, the research intends to determine whether agile management can serve as a viable strategic approach for improving performance in environments characterized by uncertainty, resource limitations, and rapid change. In doing so, the study not only expands the existing body of knowledge but also offers practical insights for leaders seeking adaptive management solutions suited to the realities of emerging economies.

METHODOLOGY

Research Design

This study utilized a quantitative research design to examine the impact of agile management practices on organizational efficiency and employee productivity in emerging economies. A survey-based approach was chosen to collect data from managers and employees across different industries, allowing for statistical analysis of the relationships between agile management practices and organizational performance. The research was descriptive and correlational, aiming to assess the current state of agile practices in emerging economies and to analyze their effects on key performance indicators.

Population and Sample

The target population for this study included organizations in emerging economies, with a focus on industries such as technology, manufacturing, and services. These sectors were chosen due to their varying levels of agile adoption and differing challenges in the context of emerging economies. The sample comprised 200 organizations from selected emerging markets, specifically focusing on countries in Asia, Latin America, and Africa. The sample was selected using a stratified random sampling method, ensuring that each industry was represented proportionally to the total number of organizations in the target population. Within these organizations, data was collected from both managers and employees who had direct experience with agile practices, ensuring a comprehensive perspective on the impact of agile management.

Data Collection

Primary data was collected through a structured questionnaire designed to measure agile management practices, organizational efficiency, and employee productivity. The survey instrument was developed based on established scales from previous studies on agile management and organizational performance (Kumar et al., 2022; Alzoubi et al., 2018). The questionnaire consisted of three main sections:

Agile Management Practices

This section included questions regarding the adoption and implementation of agile practices such as Scrum, Kanban, and Lean methodologies. Respondents were asked to rate their organizations' use of agile practices on a Likert scale from 1 (Not at all) to 5 (To a very large extent).

Organizational Efficiency

This section assessed organizational efficiency across various dimensions, including operational, financial, and strategic efficiency. A set of items was developed to measure efficiency, such as process optimization, cost-effectiveness, and decision-making speed, based on previously validated measures (Sepucha et al., 2013).

Employee Productivity

This section examined employee productivity, using performance indicators such as task completion rates, quality of work, and collaboration among team members. These items were adapted from established scales of employee performance and productivity (Pradhan, R. K., & Jena, 2017; Koopmans et al., 2012). The questionnaire was administered electronically via online survey platforms to facilitate efficient data collection across diverse geographical locations. A pilot study was conducted on a sample of 30 respondents to assess the clarity, reliability, and validity of the instrument. Adjustments were made based on the feedback received from the pilot test, and the final survey was distributed to the main sample.

Measurement Instruments

The survey instrument was developed with reliability and validity in mind. Cronbach's alpha was used to assess the internal consistency of the scales, and the instrument was reviewed by experts in the field of agile management and organizational behavior to ensure content validity. The final version of the survey included 25 items, with 8 items measuring agile management practices, 10 items assessing organizational efficiency, and 7 items evaluating employee productivity. The agile management practices scale was adapted from Sidky et al. (2007), while the organizational efficiency scale was drawn from Chow & Chen (2012). Employee productivity was measured using a scale developed by Vaidya et al. (2022). All items were rated on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree) to measure the degree of agreement or frequency with which respondents encountered specific practices and behaviors.

Data Analysis Methods

Data analysis was conducted using SPSS (Statistical Package for the Social Sciences) version 26. Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated to provide an overview of the sample characteristics and the distribution of responses. Correlation analysis was employed to assess the relationships between agile management practices and organizational efficiency, as well as between agile practices and employee productivity. Pearson's correlation coefficient was calculated to determine the strength and direction of these relationships. To test the hypotheses, regression analysis was conducted to examine the impact of agile management practices on organizational efficiency and employee productivity. Multiple regression analysis was used to evaluate the simultaneous effect of multiple independent variables (agile practices) on the dependent variables (efficiency and productivity). The following regression models were tested:

Model 1: Organizational efficiency = $\beta_0 + \beta_1$(Agile Practices) + ε

Model 2: Employee productivity = $\beta_0 + \beta_1$(Agile Practices) + ε

Additionally, industry-specific differences in the impact of agile practices were tested using ANOVA (Analysis of Variance) to compare the mean scores of agile practices across different sectors.

RESULTS AND DISCUSSION

Descriptive Statistics

The following table presents descriptive statistics that provide an overview of the level of adoption and distribution of the main variables studied: agile management practices, organizational efficiency, and employee productivity. These statistics are used to understand the general trends in respondents' responses and the variation in data for each variable, while also identifying differences in adoption rates across industries. Therefore, this table serves as an initial basis for interpreting agile practice adoption patterns and their implications for organizational efficiency and employee productivity before further analysis is conducted.

Table 1. Descriptive Statistics and Industry Adoption Levels of Key Research Variables

Variable	Mean	Standard Deviation (SD)	Industry with Highest Adoption	Industry with Lowest Adoption

Agile Management Practices	3.7	0.72	Technology (4.1)	Manufacturing (3.2)
Organizational Efficiency	3.8	0.68	Technology (4.0)	Services (3.5)
Employee Productivity	4.0	0.75	Technology (4.3)	Manufacturing (3.6)

Table 1 provides an overview of the level of adoption of agile management practices, organizational efficiency, and employee productivity across various industry sectors. Conceptually, these findings indicate that the technology sector has organizational characteristics that are more adaptable to change, making it more conducive to the implementation of agile approaches. Dynamic work environments, the use of digital technology, and a strong culture of innovation encourage organizations in this sector to integrate agile practices more consistently into managerial and operational processes. Conversely, the manufacturing and service sectors tend to show relatively lower adoption rates, which can be attributed to more hierarchical organizational structures, routine work processes, and reliance on standard procedures. These conditions have the potential to limit flexibility and speed of decision-making, resulting in suboptimal implementation of agile principles. These differences across industries indicate that the effectiveness of agile practices is strongly influenced by the organizational context and characteristics of the business sector. The relationship between agile management practices, organizational efficiency, and employee productivity appears to be interconnected. Better agile implementation tends to align with increased efficiency and individual performance, although the level of success depends on the structural and cultural readiness of the organization. Therefore, agile implementation strategies need to be tailored to the specific conditions of each industry to achieve optimal impact on organizational performance.

Correlation Analysis

The results of the correlation analysis indicate a meaningful and directional relationship between agile practices, organizational efficiency, and employee productivity. The positive relationship between agile practices and organizational efficiency indicates that the better the implementation of agile principles in management, the more effective the organization's work processes and resource utilization. Agile practices encourage flexibility, team collaboration, and rapid response to change, ultimately strengthening operational efficiency. The positive correlation between agile practices and employee productivity indicates that an agile work environment contributes to improved individual performance. The implementation of agile enables employees to work with clearer goals, more open communication, and greater autonomy in decision-making, thus impacting productivity. This finding confirms that adaptive managerial practices not only impact organizational systems but also employee behavior and performance. The strongest relationship was observed between organizational efficiency and employee productivity, confirming that organizations that manage work processes efficiently tend to create working conditions that support optimal employee performance. Overall, this pattern of relationships suggests that agile practices act as an important supporting factor that directly and indirectly improves organizational efficiency and employee productivity, although these correlational findings do not necessarily indicate a causal relationship.

Regression Analysis

Regression analysis was used to gain a deeper understanding of the role of agile practices in simultaneously influencing organizational efficiency and employee productivity. Unlike correlation analysis, which only indicates the strength and direction of the relationship, regression allows researchers to assess the extent to which agile practices contribute as predictors to changes in organizational efficiency and employee productivity. This approach allows researchers to evaluate whether the implementation of agile practices has a significant impact after considering other variables in the model, thus providing a more comprehensive picture of the importance of agile practices in improving organizational performance.

Agile Practices and Organizational Efficiency

To gain a deeper understanding of the impact of agile practices on organizational performance, this study employed regression analysis. This method was chosen because it is able to explain

causal relationships more robustly than correlation analysis, by positioning agile practices as the predictor variable and organizational efficiency as the dependent variable. Through regression analysis, it can be determined to what extent the implementation of agile practices significantly contributes to increased organizational efficiency, as well as how much of the variation in organizational efficiency these practices can explain.

Table 2. Regression Results of Agile Management Practices on Organizational Efficiency

Model	β	Standard Error	t-value	p-value
Agile Practices → Organizational Efficiency	0.56	0.12	4.67	$p < 0.01$

The results of the regression analysis indicate that agile practices have a positive and significant influence on organizational efficiency. The standardized regression coefficient value ($\beta = 0.56$; $p < 0.01$) indicates that increased implementation of agile practices is significantly followed by increased organizational efficiency. In addition, the coefficient of determination value ($R^2 = 0.42$) indicates that agile practices are able to explain approximately 42% of the variation in organizational efficiency, reflecting a moderate level of influence. These findings confirm that agile practices play a role not only as a managerial approach, but also as a strategic factor that substantially contributes to increasing organizational operational efficiency.

Agile Practices and Employee Productivity

To complement the analysis of the role of agile practices on organizational performance, this study also examines their impact on employee productivity through regression analysis. Employee productivity is considered a key indicator of the successful implementation of modern management practices, reflecting the ability of individuals and teams to produce output effectively and efficiently. Using regression, this analysis aims to assess the extent to which agile practices serve as a meaningful predictor of employee productivity, demonstrating not only a relationship but also a significant contribution in explaining productivity variation.

Table 3. Regression Analysis of Agile Management Practices and Employee Productivity

Model	β	Standard Error	t-value	p-value
Agile Practices → Employee Productivity	0.45	0.11	4.09	$p < 0.01$

The results of the regression analysis indicate that agile practices play a significant role in driving increased employee productivity. This finding indicates that the application of agile principles, such as work flexibility, team collaboration, and rapid adaptation to change, can create a more responsive work environment and support individual performance. The contribution of agile practices in explaining productivity variations confirms that managerial factors and work processes have a substantial influence on employee output. Thus, increased productivity is determined not only by individual capacity, but also by the management systems and approaches implemented by the organization, where agile practices play a crucial role in continuously improving human resource performance.

Industry-Specific Differences: ANOVA

An Analysis of Variance (ANOVA) was conducted to explore industry-specific differences in the adoption of agile practices and their impact on organizational efficiency and employee productivity.

Agile Practices by Industry

To understand whether the adoption rate of agile practices differs significantly across industry sectors, this study employed Analysis of Variance (ANOVA). This approach was chosen because it allows for simultaneous comparison of the means of more than two industry groups, thus identifying whether variations in agile implementation are coincidental or reflect real structural and organizational differences. This analysis is important given that the operational characteristics, market dynamics, and work cultures differ across industries, potentially influencing the extent to which agile practices are adopted and internalized in work processes.

Table 4. Comparison of Agile Practices Adoption Across Industries

Industry	Mean Agile Practices	Significance (p-value)

Technology	4.1	$p < 0.001$
Manufacturing	3.2	
Services	3.5	

ANOVA results show significant differences in the adoption of agile practices across industries, with the technology sector leading the way compared to the manufacturing and service sectors. This finding indicates that more dynamic, innovation-driven, and digitally driven work environments tend to be more conducive to the implementation of agile principles. Conversely, industries with more rigid work structures and standardized production processes face limitations in the widespread adoption of agile practices. This difference confirms that the effectiveness and level of agile adoption are not solely determined by its methodological merits but are also strongly influenced by the industry context, organizational flexibility, and cultural readiness.

Organizational Efficiency by Industry

To complement the analysis of the impact of agile practices, this study also explores differences in organizational efficiency levels by industry sector. This approach is important because operational characteristics, levels of technology adoption, and work process complexity differ across industries, potentially influencing how organizational efficiency is established and implemented. Therefore, a comparative analysis across industries was conducted to identify sectors that demonstrate more optimal organizational efficiency performance.

Table 5. Differences in Organizational Efficiency Across Industries

Industry	Mean Organizational Efficiency	Significance (p-value)
Technology	4.0	$p < 0.01$
Manufacturing	3.7	
Services	3.5	

The analysis reveals statistically significant differences in organizational efficiency across industries. The technology sector outperforms other sectors in managing work processes, decision-making, and resource utilization. This finding suggests that a more adaptive work environment, the use of digital technology, and a more flexible organizational structure contribute to improved efficiency. Meanwhile, the manufacturing and service sectors continue to face challenges related to process complexity and reliance on conventional procedures, which can limit the achievement of optimal efficiency. Overall, these differences confirm that industry context plays a significant role in shaping organizational efficiency levels.

Employee Productivity by Industry

To complement the analysis of differences in organizational performance across sectors, this study also examined variations in employee productivity levels by industry type. This analysis is important because employee productivity is a key indicator of organizational success and is often influenced by work characteristics, technology utilization, and the management systems implemented in each industry sector.

Table 6. Industry-Based Differences in Employee Productivity (ANOVA Results)

Industry	Mean Employee Productivity	Significance (p-value)
Technology	4.3	$p < 0.001$
Manufacturing	3.6	
Services	3.9	

The analysis reveals significant differences in employee productivity levels across industries. The technology sector stands out as the most conducive work environment for individual performance, which can be attributed to the use of digital technology, work flexibility, and the adoption of more adaptive managerial practices. Conversely, the manufacturing and service sectors face different structural and operational challenges, such as the more routine nature of work or limited flexibility in work processes, potentially limiting the optimization of employee productivity. These findings indicate that industry characteristics play a significant role in

shaping productivity patterns, and performance improvement strategies need to be tailored to each sector's context.

Discussion

Overview of Findings

The purpose of this study was to explore the impact of agile management practices on organizational efficiency and employee productivity in emerging economies, with a specific focus on industries such as technology, manufacturing, and services. The results indicated a significant positive relationship between agile practices and both organizational efficiency and employee productivity. Furthermore, industry-specific differences were observed, with technology companies showing the highest levels of agile adoption and performance improvements. These findings address the central research question: How do agile management practices influence organizational efficiency and employee productivity in emerging economies? The results suggest that agile management practices not only improve efficiency at the organizational level but also lead to higher productivity among employees. This conclusion is consistent with previous research that emphasizes the positive effects of agile methodologies on various organizational outcomes (Porkodi, 2024; Chan & Thong, 2009).

Agile Practices and Organizational Efficiency

The study found that the adoption of agile management practices had a moderate positive effect on organizational efficiency. Specifically, agile practices (such as Scrum, Kanban, and Lean) were associated with improved operational processes, faster decision-making, and more efficient use of resources, as evidenced by the significant regression results ($\beta = 0.56$, $p < 0.01$). These findings align with existing literature that suggests agile practices enhance flexibility and adaptability, two critical factors for achieving high levels of organizational efficiency (Omachi & Ajewumi, 2024). One explanation for this relationship could be that agile methodologies enable organizations to respond quickly to market changes, optimize workflows, and continuously improve processes. Moreover, agile practices encourage a culture of collaboration and innovation, which can lead to more effective problem-solving and decision-making. This may be especially important in emerging economies where organizational resources are often constrained and market volatility is high. While the impact of agile on efficiency was moderate, the results are consistent with studies that suggest partial adoption of agile practices can lead to efficiency gains (Rajan & Santhosh, 2021). This study's finding that technology companies reported the highest levels of organizational efficiency supports the idea that industries with high innovation demands benefit the most from agile methods (Chiyangwa & Mnkandla, 2018).

Agile Practices and Employee Productivity

The study also revealed a moderate positive effect of agile practices on employee productivity ($\beta = 0.45$, $p < 0.01$). Agile practices facilitate greater collaboration, clearer communication, and a more transparent workflow, all of which can contribute to increased productivity at the employee level. This finding is consistent with previous research that shows how agile methods, particularly in team-based environments, improve task completion speed, quality of work, and overall team performance (Tripp et al., 2016; Krüger et al., 2025). Agile frameworks, such as Scrum, place a significant emphasis on self-organizing teams, which can lead to more motivated and productive employees. The study's finding that technology companies reported the highest levels of employee productivity aligns with the idea that agile practices, with their focus on continuous improvement and flexibility, are particularly suited for industries requiring high levels of innovation and collaboration (Judi & Beach, 2010; Zhang & Cao, 2002). However, while agile practices generally lead to higher productivity, the relationship is not linear. The extent of agile adoption, as noted in the study, varied across sectors, and this may explain some of the variance in productivity outcomes. For instance, manufacturing companies, which tend to have more rigid operational structures, reported lower levels of productivity compared to more flexible industries such as technology.

Industry-Specific Differences

The study revealed significant industry-specific differences in the impact of agile practices, particularly between technology, manufacturing, and service sectors. Technology companies reported the highest levels of agile adoption, organizational efficiency, and employee productivity. These findings support the notion that agile methods are more effective in industries that prioritize flexibility, fast-paced development, and innovation (Savandha & Fitriyani, 2025). In contrast, manufacturing companies, which are traditionally more process-oriented and less adaptable, reported lower levels of agile adoption and less significant improvements in both efficiency and productivity. This finding echoes previous studies that argue agile practices may be more challenging to implement in industries with rigid structures and hierarchical management systems. Similarly, service industries, while showing moderate improvements in efficiency and productivity, were not as impacted as technology companies. This may be due to the diverse nature of service sectors and the varying degrees to which agile practices can be implemented across different types of service organizations (Kuester et al., 2013; Lowry & Wilson, 2017).

Implications for Practice

The results have important implications for organizations in emerging economies considering the adoption of agile management practices. First, companies in technology sectors may gain the most from agile adoption, as these industries already emphasize flexibility and innovation. However, organizations in more traditional sectors, such as manufacturing, may need to adapt agile practices more carefully to fit their specific context. This could involve combining agile principles with traditional methods to maximize efficiency gains while still maintaining some degree of structure. For managers and practitioners in emerging economies, the study emphasizes the importance of training and organizational culture change in successful agile adoption. Organizations must not only adopt agile frameworks but also cultivate an environment that supports collaboration, transparency, and continuous improvement.

Limitations and Future Research

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the research relied on self-reported data, which could lead to response biases, particularly in measuring organizational efficiency and employee productivity. Future studies could consider objective measures of performance or longitudinal data to better understand the long-term impacts of agile practices. Additionally, while the study focused on organizations in emerging economies, future research could extend the analysis to developed markets to compare the effectiveness of agile practices across different economic contexts. Future studies could also explore the specific agile frameworks (e.g., Scrum, Kanban, Lean) used by organizations and their varying impacts on efficiency and productivity.

CONCLUSION

This study confirms that agile management practices positively impact both organizational efficiency and employee productivity in emerging economies. The study also highlights the importance of industry context in shaping the outcomes of agile adoption, with technology companies experiencing the most significant benefits. For managers in emerging economies, this research offers valuable insights into the potential of agile practices to improve organizational performance, particularly when tailored to the specific needs of their industry.

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