

Do Digital Capabilities, Business Process Automation, and Agile Mindset Significantly Affect The Operational Effectiveness of Technology Startups in South Jakarta?

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ABSTRACT

The rapid development of digital technology has transformed the operational landscape of technology startups, requiring organizations to enhance their efficiency and adaptability in highly competitive environments. This study aims to analyze the influence of digital capabilities, business process automation, and agile mindset on the operational effectiveness of technology startups in South Jakarta. A quantitative research approach was employed using survey data collected from 125 respondents working in technology startup companies. The data were gathered through structured questionnaires measured using a five-point Likert scale and analyzed using multiple linear regression with SPSS version 25. The results of the analysis show that digital capabilities, business process automation, and agile mindset have positive and significant effects on operational effectiveness. Digital capabilities were found to improve organizational efficiency through the effective use of digital technologies and data-driven decision-making. Business process automation contributes to operational efficiency by reducing manual processes and increasing workflow consistency. Meanwhile, an agile mindset enhances organizational flexibility, enabling startups to respond quickly to market changes and technological developments. The simultaneous testing results also indicate that these three variables collectively explain a significant proportion of operational effectiveness in technology startups. The findings suggest that the integration of digital capabilities, automation technologies, and agile organizational culture plays a crucial role in strengthening the operational performance of technology startups. This study provides practical insights for startup managers and policymakers in developing strategies that support digital transformation and sustainable operational growth.

Keywords: *Digital Capabilities, Business Process Automation, Agile Mindset, Operational Effectiveness, Technology Startups*

1. INTRODUCTION

The rapid development of digital technology has significantly transformed the global business landscape, particularly within the startup ecosystem. Technology startups have emerged as key drivers of innovation, economic growth, and digital transformation across many economies, including Indonesia. In recent years, Jakarta especially South Jakarta has become one of the major hubs for technology startups due to the concentration of venture capital firms, digital talent, and innovation-oriented companies [1], [2]. The presence of supportive ecosystems, including incubators, accelerators, and digital infrastructure, has further strengthened the growth of startup activities in this region. Nevertheless, despite the rapid expansion of the startup ecosystem, many technology startups still encounter operational challenges such as inefficiencies in internal processes, slow decision-making mechanisms, and difficulties in adapting to rapid technological change [3], [4]. These challenges highlight the importance of improving operational effectiveness in order to sustain competitiveness and ensure long-term organizational performance.

Operational effectiveness refers to the ability of an organization to utilize its resources efficiently and effectively to achieve strategic objectives. In the context of technology startups, operational effectiveness is not only associated with cost efficiency but also with the ability to

respond quickly to market dynamics, maintain flexibility in operations, and continuously innovate in response to technological changes [5], [6]. Startups operate in highly uncertain environments characterized by rapid technological evolution, intense competition, and constantly shifting customer expectations. Consequently, organizations must continuously refine their operational systems and managerial practices to remain competitive [7], [8]. Improving operational effectiveness therefore requires the integration of technological capabilities, efficient operational processes, and adaptive organizational practices that enable startups to respond effectively to dynamic market conditions.

One of the most important factors that can enhance operational effectiveness in technology-driven organizations is digital capability. Digital capabilities refer to the organization's ability to effectively utilize digital technologies, data analytics, and digital platforms to support decision-making, innovation, and organizational performance [1], [2]. Organizations with strong digital capabilities are better positioned to leverage emerging technologies such as cloud computing, big data analytics, and integrated digital platforms to streamline operations and improve collaboration across organizational units. In the context of technology startups, digital capabilities play a crucial role in supporting the development of scalable digital products, enabling data-driven decision-making, and improving operational efficiency [9], [10]. Consequently, strengthening digital capabilities becomes a strategic requirement for startups seeking to achieve sustainable operational performance in highly competitive digital markets.

In addition to digital capabilities, business process automation has become an increasingly important mechanism for improving operational effectiveness. Business process automation involves the use of digital technologies to automate repetitive, routine, and rule-based tasks within organizational workflows. Through automation, organizations can significantly reduce human errors, increase productivity, and improve consistency in operational processes. For technology startups that often operate with limited financial and human resources, automation can be particularly beneficial because it allows employees to focus on strategic and creative tasks rather than administrative activities. Technologies such as workflow automation systems, robotic process automation (RPA), and integrated digital platforms enable organizations to accelerate operational processes, enhance service quality, and optimize resource utilization.

Beyond technological factors, organizational mindset also plays a critical role in shaping the operational effectiveness of startups. One of the most widely discussed approaches in contemporary management literature is the agile mindset. The agile mindset emphasizes adaptability, continuous learning, collaboration, and rapid response to environmental changes. Originally developed within software development methodologies, the agile approach has gradually been adopted across broader organizational contexts. Startups that adopt an agile mindset tend to demonstrate higher levels of flexibility, faster innovation cycles, and stronger collaboration within teams. Such characteristics enable organizations to respond more effectively to market uncertainties, adjust strategies in a timely manner, and maintain a culture of continuous improvement that supports long-term operational effectiveness.

Although digital capabilities, business process automation, and agile mindset have been widely recognized as important drivers of organizational performance in the digital era, empirical research examining their combined influence on operational effectiveness in technology startups remains limited, particularly in the Indonesian context. Most existing studies have focused on large organizations or traditional industries such as manufacturing, while relatively little attention has

been given to startup ecosystems that operate under different structural and resource constraints. Considering the unique characteristics of startups—such as rapid scaling requirements, limited resources, and high levels of uncertainty—it is important to investigate how these factors interact to influence their operational effectiveness. Therefore, this study aims to analyze the influence of digital capabilities, business process automation, and agile mindset on the operational effectiveness of technology startups in South Jakarta. By employing a quantitative research approach based on survey data collected from startup employees and managers, this study seeks to provide empirical evidence that contributes to the literature on digital transformation and startup management while offering practical insights for entrepreneurs, managers, and policymakers in strengthening the sustainability of technology startups in Indonesia.

2. LITERATURE REVIEW

2.1 *Operational Effectiveness*

Operational effectiveness refers to an organization's ability to perform its operational activities more efficiently and effectively than its competitors by utilizing available resources in an optimal manner. In operational management theory, operational effectiveness is associated with the improvement of internal processes, reduction of operational costs, enhancement of productivity, and the maintenance of consistent product or service quality [11], [12]. Organizations that achieve high levels of operational effectiveness are capable of delivering products and services more quickly, reliably, and efficiently while maximizing the use of their resources. In the context of technology startups, operational effectiveness plays a crucial role in ensuring sustainability and competitiveness because startups often operate in highly uncertain environments characterized by rapid technological change and intense market competition [13], [14]. By improving operational effectiveness, startups can optimize limited resources, accelerate product development cycles, enhance customer satisfaction, and maintain operational efficiency as they scale their business operations. Furthermore, operational effectiveness can be evaluated through several key indicators, including process efficiency, speed of service delivery, quality consistency, resource utilization, and the ability to achieve organizational objectives, all of which contribute to improved operational performance, higher productivity, and stronger market competitiveness.

2.2 *Digital Capabilities*

Digital capabilities refer to the ability of organizations to effectively utilize digital technologies to enhance business processes, support decision-making, and create organizational value. In the digital economy, organizations are increasingly required to develop competencies related to information technology, digital infrastructure, and data management in order to remain competitive in rapidly evolving markets [1], [2]. Digital capabilities enable organizations to integrate digital technologies into their operational activities, thereby improving efficiency, flexibility, and innovation capacity. These capabilities encompass several dimensions, including technological infrastructure, data analytics capability, digital platform utilization, and employee digital skills. Organizations with strong digital capabilities are able to leverage digital tools such as cloud computing, big data analytics, artificial intelligence, and digital

communication platforms to support operational processes, facilitate faster decision-making, enhance coordination among teams, and improve overall operational efficiency [9], [15]. For technology startups, digital capabilities are particularly crucial because their business models are often built around digital platforms and technological innovation. Startups with strong digital capabilities are better positioned to scale their operations, respond quickly to market changes, and develop innovative solutions that meet customer needs [9], [10]. Furthermore, digital capabilities also support collaboration both within the organization and with external stakeholders, which contributes to improved operational performance. Previous studies have consistently shown that organizations that successfully develop digital capabilities tend to achieve higher levels of operational efficiency, stronger innovation capacity, and sustainable competitive advantages in the digital marketplace.

2.3 Business Process Automation

Business process automation refers to the use of digital technologies to automate routine and repetitive tasks within organizational processes in order to reduce manual intervention, increase operational speed, and minimize errors. Through automation, organizations can streamline workflows, improve accuracy, and enhance overall operational efficiency. Business process automation can be implemented using various technologies such as workflow automation systems, robotic process automation (RPA), enterprise resource planning (ERP) systems, and integrated digital platforms that enable organizations to automate tasks including data entry, transaction processing, reporting, and communication processes [16], [17]. As a result, employees are able to concentrate on more strategic and value-added activities rather than routine administrative work. In the context of technology startups, automation is particularly valuable because it enables companies to maintain operational efficiency despite limited human resources and rapidly growing operational demands [18], [19]. Startups often need to manage rapid scaling while maintaining productivity, and automation helps reduce operational complexity, accelerate processing times, and improve service delivery to customers. Previous research in operations management and digital transformation has also demonstrated that automation contributes significantly to organizational productivity and performance by reducing operational bottlenecks, minimizing human errors, and improving process consistency and reliability, thereby enabling organizations that adopt automation technologies to achieve higher levels of operational effectiveness.

2.4 Agile Mindset

The agile mindset is an organizational approach that emphasizes flexibility, adaptability, collaboration, and continuous improvement in managing processes and responding to environmental changes. Originally developed within agile software development methodologies, the concept has evolved into a broader organizational management philosophy that encourages organizations to respond quickly to change, experiment with innovative ideas, and continuously refine their operational practices [20], [21]. Organizations that adopt an agile mindset typically prioritize teamwork, open communication, and iterative development processes rather than rigid planning structures, allowing them to implement adaptive strategies that respond effectively to

evolving market conditions. This approach is particularly relevant in dynamic industries such as technology startups, where rapid innovation and continuous customer feedback play a critical role in product and service development [22], [23]. An agile mindset also promotes organizational learning and experimentation by encouraging employees to collaborate, share knowledge, and improve their work processes continuously, thereby fostering a culture of adaptability and innovation. For technology startups, adopting an agile mindset can significantly enhance operational effectiveness because agile teams are able to make faster decisions, adjust strategies quickly, and improve coordination across departments. Such flexibility enables startups to maintain operational efficiency while pursuing innovation and growth simultaneously. Previous studies have also shown that organizations with strong agile cultures tend to demonstrate higher levels of organizational performance, innovation capability, and operational responsiveness, as the agile mindset helps organizations navigate complex environments and continuously improve their operational processes.

2.5 Hypothesis Development

Based on the theoretical perspectives discussed above, digital capabilities, business process automation, and an agile mindset are expected to play significant roles in improving operational effectiveness in technology startups. Digital capabilities enable organizations to utilize technological resources more effectively, thereby enhancing operational efficiency and supporting faster, data-driven decision-making processes. Startups that possess strong digital capabilities are better able to integrate digital technologies into their operational systems, which can lead to higher productivity and improved organizational performance. In addition, business process automation contributes to operational effectiveness by streamlining organizational workflows and reducing reliance on manual tasks, allowing operational activities to be processed more quickly, accurately, and consistently. Automation technologies therefore help organizations optimize resource utilization while improving operational efficiency. Meanwhile, the agile mindset supports organizational flexibility and adaptability by encouraging rapid responses to environmental changes and continuous process improvement. Organizations that adopt agile practices tend to demonstrate stronger operational performance because they are able to innovate, collaborate, and adjust strategies more effectively in dynamic environments. Based on these theoretical arguments, this study proposes several hypotheses regarding the influence of digital capabilities, business process automation, and agile mindset on operational effectiveness.

H1: Digital capabilities have a positive and significant effect on operational effectiveness in technology startups.

H2: Business process automation has a positive and significant effect on operational effectiveness in technology startups.

H3: Agile mindset has a positive and significant effect on operational effectiveness in technology startups.

H4: Digital capabilities, business process automation, and agile mindset simultaneously have a positive and significant effect on operational effectiveness in technology startups.

3. METHODS

3.1 Research Design

This study employs a quantitative research approach to examine the influence of digital capabilities, business process automation, and agile mindset on the operational effectiveness of technology startups. A quantitative approach is considered appropriate because it enables the researcher to analyze the relationships among variables using statistical techniques and numerical data, thereby providing empirical evidence regarding the strength and direction of these relationships. The research design adopted in this study is explanatory research, which aims to explain the causal relationships between the independent variables—digital capabilities, business process automation, and agile mindset—and the dependent variable, operational effectiveness. The study focuses on technology startup companies located in South Jakarta, which is widely recognized as one of the primary centers of the startup ecosystem in Indonesia due to the presence of venture capital firms, digital talent, and innovation-driven enterprises. These startups operate across various sectors, including financial technology, e-commerce, software development, digital services, and other technology-based industries. By concentrating on this region, the study seeks to capture the operational dynamics of technology startups operating within a highly competitive and rapidly evolving digital environment.

3.2 Population and Sample

The population of this study consists of employees and managers working in technology startup companies located in South Jakarta. These respondents were chosen because they are directly involved in organizational operations and possess relevant knowledge regarding the implementation of digital technologies, automated processes, and agile working practices within their organizations. Due to the difficulty of obtaining a complete list of all startup employees in the region, this study employed purposive sampling as the sampling technique. Purposive sampling enables the researcher to select respondents who meet specific criteria that align with the objectives of the research. The criteria used in selecting respondents include: individuals who work in technology startup companies located in South Jakarta, are involved in operational, technological, or managerial activities within the organization, and have at least one year of work experience in their respective companies. Based on these criteria, a total of 125 respondents were selected as the research sample. This sample size is considered sufficient for conducting multiple regression analysis and is deemed capable of representing the operational characteristics of technology startups within the study area.

3.3 Data Collection Method

The data used in this study are primary data collected through a survey method. Data were obtained using a structured questionnaire distributed to respondents working in technology startup companies in South Jakarta. The questionnaire was distributed through online survey platforms as well as direct communication with respondents to ensure efficient and broader data collection. The instrument consisted of several statements designed to measure each research variable, including digital capabilities, business process automation, agile mindset, and operational effectiveness. All items were measured using a five-point Likert scale, where respondents were asked to indicate their level of agreement with each statement. The scale ranged from 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The use of the Likert scale allows the researcher to quantify respondents' perceptions and attitudes regarding the implementation of digital capabilities, automation practices, agile organizational culture, and their impact on operational effectiveness within their respective organizations.

3.4 Measurement of Variables

This study involves one dependent variable and three independent variables, each operationalized through several indicators derived from relevant literature in management and information systems research. The first independent variable is Digital Capabilities (X_1), which refers to the organization's ability to utilize digital technologies to improve operational processes and decision-making; this variable is measured through indicators such as the utilization of digital tools and technologies in operations, the ability to manage and analyze digital data, the integration of digital systems within the organization, and employees' digital skills and competencies. The second independent variable is Business Process Automation (X_2), which refers to the implementation of technological systems that automate routine and repetitive business processes; the indicators used to measure this variable include the implementation of automated workflow systems, the use of digital platforms to streamline operations, the reduction of manual processes through automation, and improvements in operational speed through automated systems. The third independent variable is Agile Mindset (X_3), which reflects an organizational culture that emphasizes adaptability, collaboration, and continuous improvement; this variable is measured using indicators such as flexibility in responding to change, team collaboration and communication, continuous learning and improvement, and rapid decision-making and innovation. Meanwhile, the dependent variable in this study is Operational Effectiveness (Y), which refers to the organization's ability to perform operational activities efficiently and achieve its organizational goals; this variable is measured through indicators including efficiency in operational processes, speed of service delivery, productivity improvement, and the achievement of operational targets.

3.5 Data Analysis Techniques

The data collected in this study were analyzed using the Statistical Package for Social Sciences (SPSS) version 25, employing several statistical techniques to test the proposed research hypotheses. First, descriptive statistics were used to describe the characteristics of respondents and summarize the overall distribution of responses, thereby providing an overview of the sample and the research variables. Second, validity and reliability tests were conducted to ensure that the questionnaire items were appropriate and consistent in measuring the research variables; the validity test was performed using Pearson correlation analysis, while reliability was evaluated using the Cronbach's Alpha coefficient. Third, classical assumption tests were conducted prior to regression analysis to ensure that the data met the required statistical assumptions; these tests included the normality test, multicollinearity test, and heteroscedasticity test. Finally, multiple linear regression analysis was applied to examine the influence of digital capabilities, business process automation, and agile mindset on operational effectiveness. The regression model used in this study is expressed as $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$, where Y represents operational effectiveness, α denotes the constant, β_1 , β_2 , and β_3 represent the regression coefficients, X_1 represents digital capabilities, X_2 represents business process automation, X_3 represents agile mindset, and ε represents the error term. Hypothesis testing was conducted using the t-test to evaluate the partial influence of each independent variable on operational effectiveness and the F-test to examine the simultaneous influence of all independent variables on the dependent variable. In addition, the coefficient of determination (R^2) was used to measure the extent to which variations in operational effectiveness could be explained by the independent variables included in the regression model.

4. RESULTS AND DISCUSSION

4.1 Respondent Characteristics

This study involved 125 respondents working in technology startup companies located in South Jakarta. The respondents consisted of employees involved in operational, technological, and managerial activities. The demographic characteristics of respondents are presented in Table 1.

Table 1. Respondent Demographic Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	72	57.6%
	Female	53	42.4%
Age	21–25 years	38	30.4%
	26–30 years	47	37.6%
	31–35 years	25	20.0%
	>35 years	15	12.0%
Work Experience	1–2 years	46	36.8%
	3–5 years	52	41.6%
	>5 years	27	21.6%
Position	Staff	64	51.2%
	Supervisor	34	27.2%
	Manager	27	21.6%

The demographic profile of respondents presented in Table 1 provides an overview of the characteristics of individuals participating in this study. Based on gender distribution, the majority of respondents are male, accounting for 72 individuals (57.6%), while female respondents represent 53 individuals (42.4%), indicating a relatively balanced gender composition within the sample. In terms of age, most respondents fall within the productive working age range, with the largest group being 26–30 years old (37.6%), followed by respondents aged 21–25 years (30.4%), 31–35 years (20.0%), and those over 35 years old (12.0%). This distribution suggests that the workforce in technology startups is predominantly composed of young professionals who are typically more adaptive to technological innovation and digital work environments. Regarding work experience, the majority of respondents have between 3–5 years of experience (41.6%), followed by those with 1–2 years of experience (36.8%), and more than 5 years of experience (21.6%). This indicates that most respondents possess sufficient professional exposure to understand operational practices within their organizations. In terms of organizational position, more than half of the respondents are staff-level employees (51.2%), while supervisors account for 27.2% and managers represent 21.6%. This distribution reflects a representation of respondents across different organizational levels, which helps capture diverse perspectives regarding operational effectiveness and the implementation of digital capabilities, automation, and agile practices within technology startups.

4.2 Descriptive Statistics

Descriptive statistics were used to analyze respondents' perceptions of the variables studied. The results are presented in Table 2.

Table 2. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Digital Capabilities	125	2.80	4.90	4.12	0.53
Business Process Automation	125	2.60	4.80	4.05	0.57
Agile Mindset	125	2.70	4.90	4.18	0.50
Operational Effectiveness	125	2.90	4.95	4.20	0.48

The descriptive statistics presented in Table 2 provide an overview of respondents' perceptions regarding the main variables examined in this study. Based on the results, all variables demonstrate relatively high mean scores, indicating that respondents generally perceive a strong implementation of digital and managerial practices within their organizations. The variable Operational Effectiveness has the highest mean value (4.20) with a standard deviation of 0.48, suggesting that technology startups in South Jakarta tend to demonstrate relatively high levels of efficiency and effectiveness in their operational activities. The Agile Mindset variable also shows a high mean score of 4.18 with a standard deviation of 0.50, indicating that respondents perceive their

organizations as having a strong culture of adaptability, collaboration, and continuous improvement. Meanwhile, Digital Capabilities have a mean value of 4.12 and a standard deviation of 0.53, reflecting that startups generally possess strong abilities in utilizing digital technologies, managing digital data, and integrating digital systems within their operational processes. Similarly, Business Process Automation shows a relatively high mean value of 4.05 with a standard deviation of 0.57, indicating that automation technologies such as workflow systems and digital platforms are widely implemented to support operational activities.

4.3 Validity and Reliability Test

The validity test was conducted using Pearson correlation analysis, while reliability was tested using Cronbach's Alpha. The results are presented in Table 3.

Table 3. Reliability Test Results

Variable	Items	Cronbach's Alpha	Interpretation
Digital Capabilities	4	0.846	Reliable
Business Process Automation	4	0.832	Reliable
Agile Mindset	4	0.858	Reliable
Operational Effectiveness	4	0.871	Reliable

The reliability test results presented in Table 3 indicate that all research variables demonstrate satisfactory levels of internal consistency. The Cronbach's Alpha values for each variable exceed the commonly accepted threshold of 0.70, which suggests that the measurement items used in this study are reliable and consistent in capturing the constructs being examined. Specifically, the Operational Effectiveness variable shows the highest reliability value with a Cronbach's Alpha of 0.871, followed by Agile Mindset with a value of 0.858, Digital Capabilities with 0.846, and Business Process Automation with 0.832. These results indicate that the items used to measure each variable are highly consistent and capable of producing stable measurements across respondents. The strong reliability values confirm that the questionnaire instruments are suitable for further statistical analysis, including regression analysis, as they effectively represent the underlying constructs of digital capabilities, business process automation, agile mindset, and operational effectiveness within technology startups.

4.4 Multiple Linear Regression Analysis

Multiple linear regression analysis was used to determine the effect of digital capabilities, business process automation, and agile mindset on operational effectiveness.

4.4.1 Model Summary

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error
1	0.781	0.610	0.602	0.305

The R Square value of 0.610 indicates that 61.0% of the variation in operational effectiveness can be explained by digital capabilities, business process automation, and agile mindset. The remaining 39.0% is influenced by other variables not included in this study.

4.4.2 ANOVA Test

Table 5. ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	18.420	3	6.140	65.987	0.000
Residual	11.264	121	0.093		
Total	29.684	124			

The F-test result shows a significance value of 0.000, which is smaller than 0.05. This indicates that digital capabilities, business process automation, and agile mindset simultaneously have a significant effect on operational effectiveness.

4.4.3 Regression Coefficients

Table 6. Regression Coefficients

Variable	B	Std. Error	Beta	t	Sig
Constant	0.842	0.285		2.955	0.004
Digital Capabilities	0.312	0.072	0.351	4.333	0.000
Business Process Automation	0.267	0.068	0.298	3.926	0.000
Agile Mindset	0.295	0.074	0.329	3.989	0.000

The regression results presented in Table 6 indicate that digital capabilities, business process automation, and agile mindset have positive and significant effects on operational effectiveness in technology startups. The regression coefficient for digital capabilities is 0.312 with a t-value of 4.333 and a significance level of 0.000, indicating that improvements in an organization's ability to utilize digital technologies significantly enhance operational effectiveness. Similarly, business process automation shows a positive coefficient of 0.267 with a t-value of 3.926 and a significance value of 0.000, suggesting that the implementation of automated systems contributes significantly to improving operational efficiency and productivity within startups. Meanwhile, agile mindset also demonstrates a significant positive influence with a coefficient of 0.295, a t-value of 3.989, and a significance level of 0.000, indicating that organizational cultures emphasizing adaptability, collaboration, and continuous improvement play an important role in strengthening operational performance. Among the independent variables, digital capabilities exhibit the strongest standardized effect (Beta = 0.351), suggesting that technological competence is the most influential factor in enhancing operational effectiveness in the context of technology startups. Overall, these results confirm that the integration of digital capabilities, automation technologies, and agile organizational practices significantly contributes to improving the operational effectiveness of technology startups.

Discussion

The results of the regression analysis demonstrate that digital capabilities have a positive and significant influence on operational effectiveness in technology startups. The regression coefficient of 0.312 with a significance value of 0.000 indicates that startups with stronger digital capabilities tend to achieve higher levels of operational effectiveness. This finding suggests that the ability to utilize digital technologies—such as cloud computing systems, data analytics platforms, and digital collaboration tools—enables organizations to improve operational efficiency and support faster, data-driven decision-making processes. In the context of technology startups, digital capabilities are particularly important because many operational activities rely heavily on digital infrastructure and integrated information systems. Startups that develop strong digital infrastructures are therefore better positioned to optimize workflows, improve internal coordination, and deliver services more efficiently to customers [24], [25]. These results are consistent with the digital transformation literature, which emphasizes that the strategic utilization of digital technologies can enhance operational performance and create organizational value through improved efficiency and innovation.

The analysis also reveals that business process automation has a positive and significant effect on operational effectiveness, as indicated by a regression coefficient of 0.267 and a significance value of 0.000. This finding indicates that automation technologies contribute substantially to improved operational performance by reducing manual processes and increasing operational efficiency. Through automation systems such as workflow automation, integrated digital platforms, and robotic process automation (RPA), organizations are able to streamline operational workflows,

reduce human error, and accelerate the execution of routine tasks. For technology startups that often operate with limited financial and human resources, automation plays a critical role in improving productivity and supporting organizational scalability [26], [27]. By automating repetitive operational processes, employees can focus more on strategic activities such as innovation, product development, and customer engagement. Consequently, automation not only improves operational speed and accuracy but also supports more efficient resource utilization within startup organizations.

Furthermore, the findings indicate that agile mindset significantly influences operational effectiveness, with a regression coefficient of 0.295 and a significance value of 0.000. This result demonstrates that organizations that adopt agile principles are better able to respond to rapid technological changes and evolving market conditions. The agile mindset promotes flexibility, collaboration, and continuous improvement, which are crucial for startups operating in highly dynamic and uncertain environments. Agile teams typically adopt iterative development processes and open communication practices that enable faster decision-making and more effective problem-solving. In technology startups, where innovation cycles are often rapid and customer feedback plays a vital role in product development, the adoption of an agile mindset allows organizations to adapt their operational processes quickly and maintain high levels of performance. As a result, agile organizational cultures contribute significantly to improving operational responsiveness and efficiency.

In addition to the individual effects of each variable, the simultaneous testing results confirm that digital capabilities, business process automation, and agile mindset collectively influence operational effectiveness. The high F-statistic value of 65.987 indicates that these variables together provide a strong explanatory contribution to operational performance in technology startups. This finding highlights that operational effectiveness cannot be explained solely by technological factors or organizational culture independently; rather, it requires the integration of both technological capabilities and adaptive managerial practices. The interaction between digital infrastructure, automated operational processes, and agile organizational culture creates a synergistic environment that enables startups to operate more efficiently while maintaining flexibility and innovation capacity.

Overall, the results of this study emphasize that operational effectiveness in technology startups is shaped by a combination of technological resources and organizational mindset. Startups that invest in developing strong digital capabilities, implement automation technologies to streamline operational processes, and cultivate agile organizational cultures are more likely to achieve higher operational efficiency and sustainable competitive advantages. These findings contribute to the growing body of literature on digital transformation and startup management by demonstrating that the integration of digital capability development, process automation, and agile management practices is essential for improving operational performance in technology-driven organizations. In addition, the results provide practical insights for startup founders, managers, and policymakers in designing strategies that strengthen digital readiness, encourage automation adoption, and promote agile organizational cultures within the startup ecosystem.

CONCLUSION

This study examined the influence of digital capabilities, business process automation, and agile mindset on the operational effectiveness of technology startups in South Jakarta. The results indicate that each independent variable has a positive and significant effect on operational effectiveness. Digital capabilities enable startups to leverage digital technologies and data to improve efficiency and decision-making processes. Business process automation enhances operational performance by streamlining workflows, reducing manual errors, and increasing productivity. Meanwhile, the adoption of an agile mindset supports organizational flexibility, collaboration, and continuous improvement, which are essential for startups operating in dynamic environments.

Furthermore, the simultaneous analysis confirms that the combination of digital capabilities, automation technologies, and agile organizational culture significantly contributes to improving operational effectiveness in technology startups. These findings highlight the importance of integrating technological infrastructure with adaptive management practices to achieve sustainable operational performance. Therefore, startup managers are encouraged to invest in digital capability development, implement automation systems, and cultivate agile working cultures in order to strengthen operational efficiency and maintain competitiveness in the digital economy.

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