

Determinants of Business Resilience in Small and Medium Enterprises in Pekalongan: Business Process Capability as a Mediating Variable

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ABSTRACT

The purpose of this article is to investigate the model of how business process skills, through system adoption, affect business resilience and performance. empirical research on small and medium-sized businesses that currently run their operations using ERP systems. The adoption of accounting information systems is shaped by the use of business intelligence, the deployment of dynamic accounting information systems, and human resource competences associated with the use of accounting information systems. Additionally, the adoption of accounting information systems and organizational resilience are moderated by business process capabilities. One way to get empirical data is through surveys. Path analysis was conducted using partial least squares. Information systems adoption as a foundation for enhancing organizational resilience, including the use of business intelligence, resource competences associated with accounting information system use, and dynamic accounting information system deployment. As a mediating variable, business process capability has the power to boost business resilience, which will enhance organizational performance. Creation of ideas that serve as a foundation for assessing organizational performance and resilience models through the use of accounting information systems in business processes.

Keywords: *Adoption of Accounting Information Systems; Capabilities of Business Processes; Organizational Resilience*

INTRODUCTION

In today's fast-paced business environment, having SIA capabilities that are highly valuable is crucial (Prasad & Green, 2015). This makes it necessary for organizations to place more emphasis on daily operational tasks related to productivity and innovation in digital business (Beck, 2016). In light of this, SIA and TI have evolved into metafora for several tools and techniques that may be used by organizations to mitigate environmental threats. Subsequently, many investments in information systems (SI) are made with the assumption that current technology, such as information assurance systems, would produce results that are crucial for the competitive advantage of organizations' operations (Elbashir et al., 2008).. The study's focus is on the potential for SIA that can be realized through flexible SIA collaboration, a powerful AI business system, and human SIA competency.

The majority of studies on SI have focused on investments in technology or technology capabilities, which are described as information technology and related services, products, and tactics. But SIA is

not just a component of IT; rather, it also involves internal processes, organizational structure, and human resources to effectively handle information. A crucial aspect of business is system utilization since it forms a value chain between information technology, information systems, and employee labor (Herzallah et al., 2019; Hesam, 2017)

The first and second most critical areas that support effective and sensitive use of SIAs with regard to business operations are the processes of developing business strategy and operational capacity. Because of this, in order to explore the strategic relationship between dynamic SIA capacity and business process capacity, this study examines the relationship between the two. In addition, numerous studies have demonstrated the positive effects of information system capability on organizational work (Al-Matari et al., 2022; Laub, 1999; Qasem et al., 2021). Based on a few studies that have already been conducted, our understanding of the business process's capacity through the aforementioned breakthroughs is still lacking since there has been too little emphasis on the business environment that is unstable.

According to this study, SIA dinamis was defined as a unique type of sumber daya, specifically for organizations that cannot be easily defined and that require careful consideration in order to minimize their impact on business process capability. The study also examines the impact of SIA's dynamic capacity on business operations by identifying the research team's experience in SIA's business operations and their influence on business operations that are mediated by the study team's influence on business process capacity. This study also examines how OR is affected by SIA's dynamic capacity by identifying the research team's strengths in the business and its impact on business processes' ability to support operations.

The usefulness of this research is to contribute to the theory of business resilience and dynamic information assurance systems. This study also makes a contribution to the business world, specifically for small businesses and encourages them to keep up with the rapid advancement of industry and technology.

In order to manage uncertainty, dynamic capabilities are crucial (D. Teece, 2016). The ability of an organization to integrate, develop, and reconfigure internal and external skills in order to react swiftly to rapidly changing conditions is known as organizational dynamic capability (D. J. Teece et al., 2009). The use of AIS in fundamental organizational tasks is the focus of this study. Dynamic AIS installation, complementing BI systems, and AIS-related human resource competencies can be used to monitor transaction processing, the display of accounting information for decision making, and environmental management control.

The use of accounting information systems has a number of noteworthy traits. Among these qualities is the usefulness of accounting data in relation to the implementation of Indonesian accounting standards. Integrity and dependability are two aspects of accounting information systems' quality. Security and secrecy are essential components of an effective accounting information system. When small and medium-sized enterprises use accounting information systems, some factors to take into mind are as follows:

Organizations must be able to make efficient use of large amounts of data from many sources in order to meet their operational and strategic objectives if they are to grow and survive (Madanchian et al., 2019; Qadir et al., 2016). Through the allocation of resources towards technological capabilities, the development of synergies between flexible AIS, BI systems, and AIS-related human resource competencies and organizational competencies, and the enhancement of accounting and non-financial reporting processes, they will augment their ability to make more informed decisions.

Adoption of AIS in companies is a valuable resource that fosters organizational competitiveness, according to the perspectives of resource-based theory, dynamic capacities, and upper echelon theory (Ravichandran, 2018). Small businesses, particularly small and medium-sized businesses, have embraced accounting information systems in the modern age. These systems include payroll systems, accounting software, transaction process systems, control systems, business intelligence, and management control software. Prior studies have indicated that adopting AIS as a means of accessing technology does not ensure organizational resilience (Ravichandran, 2018). Therefore, business process capabilities must be included in the organization's strategy by the organization's owner (Cimellaro, 2016; Ghasemi et al., 2011). This research on AIS adoption is shaped by the implementation of dynamic AIS, BI and

employee competencies related to AIS to generate sustainable performance benefits.

Based on the discussion above, this study makes a research model that is depicted in the Figure 1.

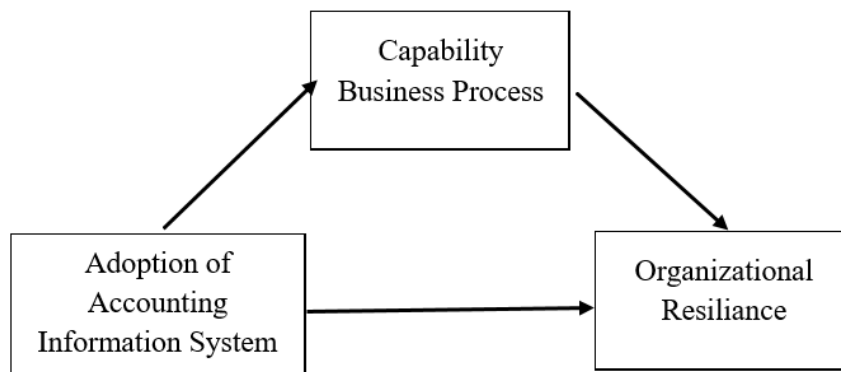


Figure 1. Research framework

Previous research supports the impact of AIS adoption on organizations. Hesam (2017) found that IT capacity has a greater impact on organizational resilience. Further, some (Prasad & Green, 2015) demonstrate the importance of AIS's ability to improve organizational performance or resilience. Strategies on business process capabilities also positively support the improvement of organizational competitiveness through maximizing organizational resources. Merut theory of organizational dynamic capabilities utilizes organizational resources in every condition in the organization to achieve goals. AIS adoptions should have the ability to receive and process information from new service delivery or sales channels. SME owners' expectations of standard accounting information must be adjusted to business process capabilities. All parts of the organization must adapt to changing and approach business needs by adapting and integrating IT infrastructure (Rai & Tang, 2010). Thus, infrastructure is an integral aspect of IS's ability to span every point and span organizational boundaries (Rai et al., 2006). The hypotheses developed in this study on AIS adoption are as follows:

H₁: AIS adoption positively impacts organizational resilience.

H₂: AIS adoption positively impacts business process capabilities.

Business Process Capability and Accounting Information System

Process capability refers to an organization's ability to create market value by utilizing resources in a unique way (Giudice, 2016). Experts have proposed a typology of three denominations for the classification of business process capabilities: inside-in, inside-out, and stretchability (S.Day, 1994). An organization's ability to anticipate market demand, filter competitors, build long-term strategic relationships with external stakeholders, and respond to rapid market changes is known as internal and external capabilities (Fahy & Hooley, 2002). Qu & Liang, (2010), states that inside-out capabilities are the organization's ability to focus and emphasize threats and opportunities in the external environment to further reinforce with internal processes. An organization's ability to pursue operational excellence and efficiency through internal processes is known as in-out capability (Banker et al., 2006). The incorporation of inside-out and outside-in organizational capabilities is referred to as spanning ability. An organization's ability to handle the flow of information across functional areas of the supply chain (purchasing, order processing, strategy development, and information dissemination) is referred to as range capability. Spanning capabilities rely on internal and external analysis to assist organizations in harnessing valuable strengths, capitalizing on market opportunities, avoiding potential weaknesses, and neutralizing external threats.

Business process capability, in this study, refers to an organization's ability to create market value by utilizing resources in a unique way. A typology of three denominations for the classification of business process capabilities: inside-out capability, inside-out capability, and stretchability (Dickinson, 2009). An organization's ability to anticipate markets, competitors, build long-term relationships with external stakeholders, and respond to rapid market changes is known as outside capabilities. Outside capabilities are the organization's ability to focus and threaten in the external environment to further reinforce with internal processes. An organization's ability to develop operational excellence and efficiency through internal processes is known as inside-out capability. The incorporation of inside-out and outside-in organizational capabilities is referred to as spanning ability. An organization's ability to handle the flow of information across functional areas of the supply chain referred to as range capability.

Dynamic capabilities theory and upper echelon theory have emphasized the need for dynamic capability development procedures in achieving organizational competitive advantage carried out by owners (D. Teece, 2016; D. J. Teece et al., 2009). Similarly, organizational performance can be affected by IS capabilities in all situations, including during times of crisis, through the mediating role of capabilities such as business process capabilities (Massachusetts & No, 2002). Resource based view theory emphasizes that organizational performance can be improved with IT-based systems, such as AIS capabilities, with organizational capabilities to optimize business processes and improve management (Peng et al., 2016). Although it is a valuable resource in improving organizational performance, AIS alone may not be able to help maintain that performance (Rai et al., 2006). This is consistent with the essence of RBT, which suggests that the impact of AIS as a valuable resource may still depend on intangible factors such as business process capabilities (Liang et al., 2010). However, better performance can be generated through the synergy of appropriate tangible and intangible resources (Karimi et al., 2007).

Organizational capabilities, such as business process capabilities, are the most well regarded mediators. To develop causal relationships between business process capabilities and business resilience, dynamic AIS systems enhance the critical interdependence between inputs, processes, and outcomes (Liang et al., 2010). Information technology-based systems such as AIS can improve organizational performance when equipped with good business processes (Sun et al., 2017). The hypotheses developed regarding business process capability and organizational resilience are as follows:

H₃: Business process capabilities positively impact organizational resilience

METHODS

This study used quantitative research methods. Quantitative research is used to test hypotheses in inference research. This study uses an explanatory research approach to determine the relationship between variables. This research was conducted in Pekalongan and surrounding areas. The reason researchers conduct research in this location is because there are SME businesses that have adopted AIS for operations. The population in this study is the entire community that owns SMEs. The sample in this study is SMEs selectors who use ERP to carry out their business operations. It uses snowball sampling techniques to determine the number of samples. In this study, there were 197 respondents who filled out questionnaires, and 6 respondents who were not filled in completely, which caused the data outlier so that it was not included in the sample. So that the number of respondents who became a sample amounted to 191 respondents.

The source of data used is primary data obtained by distributing questionnaires to respondents who are the subjects of research in this study derived from respondents. Questionnaires were distributed to respondents during the study period, namely January to February 2024. The data collection technique to collect quantitative data is by questionnaire which is used by survey. The questions used in the survey are arranged in the form of questionnaires filled out by the respondents themselves. The questionnaire file is given in the form of a form and distributed to respondents through google form. The operational definition of variables in this study adopts previous questions from various sources measured using interval data with measurements using a linked scale strongly disagree value 1 to value strongly agree value 5 which can be seen in the following Table 1.

Data analysis techniques with descriptive analysis, which is an activity that refers to a systematic study or assessment of a matter in order to determine the parts of the relationship between parts in the whole. Descriptive research is research based on data collection. Collection of primary data and secondary data based on documentation or research. Data assessment to select categorization of primary data or secondary data. Data interpretation is carried out to interpret a number of data encountered in the field. Conclusions are generated based on generalizations of statements about the problem. To describe the actual phenomenon of each variable, research was conducted on respondents who were observed during the study time.

In this study, data analysis was carried out using SEM-PLS with the help of Smart PLS software. The PLS approach is useful for predicting dependent variables by involving a large number of independent variables (Ghozali & Latan, 2015). PLS does not assume specific distributed data meaning the data can be nominal, interval, ordinal and ratio). PLS can analyze at the same time constructs formed with reflexive indicators and formative indicators. It is not possible to run in Covariance Based SEM (CBSEM) because there will be unidentified models.

The results of PLS R-Squares present the amount of variance of the construct described by the model. Furthermore, model evaluation is carried out by looking at the significance value to determine the influence

between variables through bootstrapping or Jeckknifing procedures. The bootstrap approach represents non-parametric precision of PLS estimation. The bootstrap procedure uses the entire original sample to perform resampling. Hypothesis testing is done with a statistical test t (t-test). If in this test obtained a p-value of < 0.05 ($\alpha 5\%$), it means significant testing, and vice versa if the p-value > 0.05 ($\alpha 5\%$), it means insignificant. Where the results of hypothesis testing on the outer model are significant, it indicates that the indicator is seen as usable as a latent variable measuring instrument. Meanwhile, if the test results are significant, it can be interpreted that there is a meaningful influence of one latent variable on another latent variable.

RESULTS AND DISCUSSION

Respondent's demographics

The study respondents were owners of small and medium-sized businesses that already use enterprise resource planning (ERP) located in the study area. The sample in this study was 191 respondents who filled out the questionnaire completely. The instrument used in this study was in the form of a questionnaire given to respondents who were the subjects of the study. The questionnaire will be distributed from January 1, 2024 to February 28, 2024.

Table 2. Characteristics of Respondents

	Total	Percentage
a. Gender		
Man	151	79.05%
Women	40	20.94%
b. Age		
26-30 years	15	7.85%
31-40 years	33	17.28%
40 years old and above	143	74.86%
c. Experience		
Less than 1 year	49	25.65 %
1 to 3 years	133	69.63%
More than 3 year	9	4.71%
d. Total employmen		
Less than 50	117	61.25%
More than 50	74	38.74%

Based on the gender classification in the data collection conducted, the results obtained were male respondents totaling 151 small and medium enterprises led by men, while female respondents amounted to 40 respondents by female respondents as small and medium business owners. Based on age classification, it can be seen in Table 2, the majority of respondents obtained and used by researchers have an average age of 40+ as much as 74.86% of all respondents, namely 191 respondents. Respondent data based on the length of use of less than 1 year as much as 25.65% of the entire sample. Based on the number of workers, it consists of businesses that have employees less than 50 employees as many as 117 and those with employees more than 50 employees as many as 74.

Characteristics of the respondent provide consistent data that can provide useful insights into the collected data. Data analysis employs a cuisioner technique that is silently sent to respondents during the study period and collected at a time that corresponds to the schedule so as to prevent response bias. To provide high-quality data, a closed-ended survey is administered to business owners, specifically UMKM in Pekalongan. There are no gaps in the data collection process, thus the responses used in this study are suitable for providing a thorough analysis of the data and can be used to challenge hypotheses.

The next stage is data analysis to determine the influence of each variable to answer the hypothesis proposed.

Confirmatory factor analysis

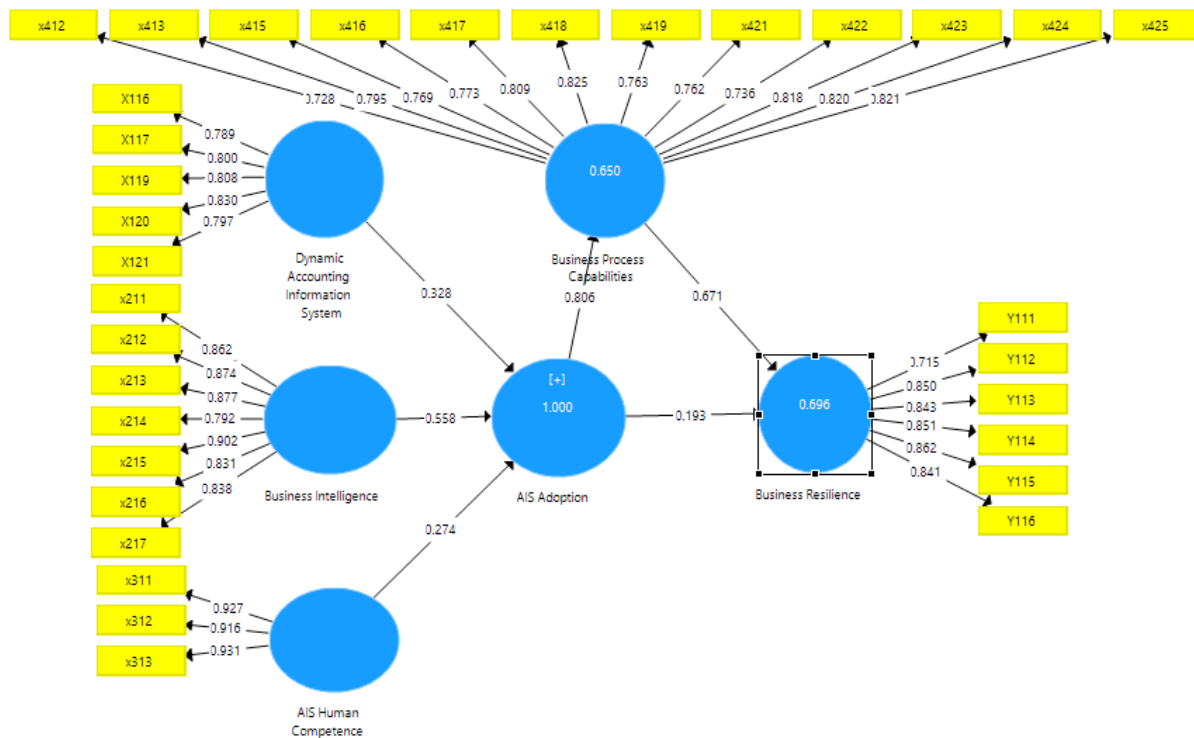


Figure 2. Result and loading of measures of the remaining constructs

Table 3. Construct reliability and validity

Construct	Cronbach's alpha	Composite reliability	AVE
AIS Adoption	0.937	0.946	0.544
Business intelligence	0.938	0.947	0.856
AIS Human competence	0.916	0.947	0.856
Business process capabilities	0.943	0.951	0.617
Organization Resilience	0.908	0.929	0.686
Dynamic Accounting Information System	0.864	0.902	0.648

Table 4. Discriminant validity coefficients

	AIS Adoption	Business Process Capabilities	Organization Resilience
AIS Adoption	-NA ^a		
Business process capabilities	0.806	0.786	
Organization resilience	0.733	0.726	0.828

^a formatif construction.

Results from hypothesis testing

Following the model's validity and reliability tests, the research model's hypothesis in Figure 3 was tested. Table 5 displays the path coefficient and p-value of the analysis results. Results indicating the hypothesis's support at the 1% and 5% significance levels can be derived from the analysis. The analysis's findings indicated that, at a significance level of 5%, there is a relationship between AIS Adoption and Organization Resilience, supporting hypothesis (H1) that says that organizational resilience will rise in direct proportion to AIS Adoption. The analysis results support hypothesis two (H2), which states that there is a 1% significance level influence of AIS adoption on business process capabilities and that the more AIS is adopted by an organization, the more probable it is that the organization's business process capability strategy will be enhanced. Additionally, the analysis demonstrates support at a significant level of 1% for the predicted relationship between business process capability and organizational resilience, indicating that the more strategies an organization implements to improve its business process capabilities, the more likely it is that organizational resilience will increase.

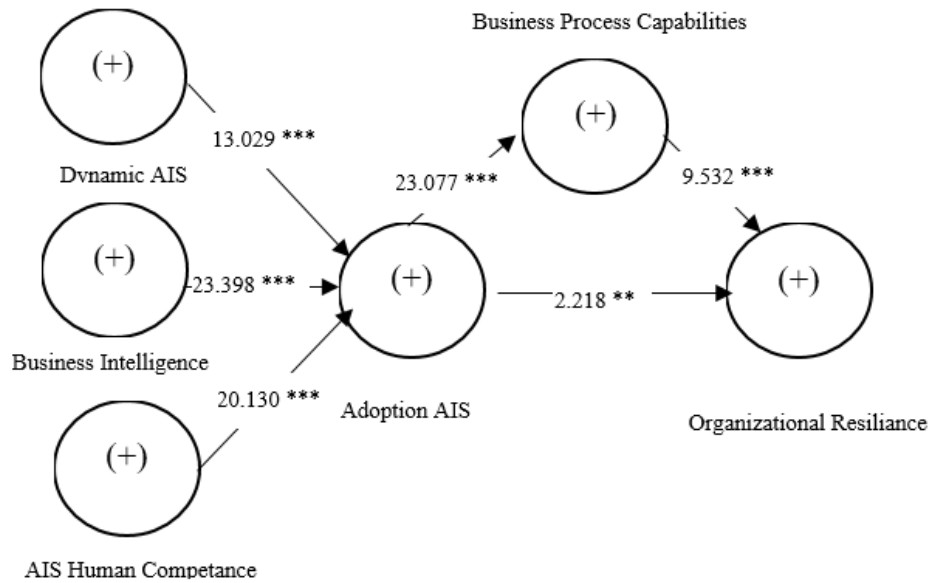


Figure 3. Results of hypothesis testing

Table 5. SmartPLS path model estimated and statistics

Variable	Expected sign	Path Coef	p-Value	Hypothesis
H1 Adoption AIS→Oraganization Resilience	+	0.193**	0.027	Supported
H2 Adoption AIS→Business Process Capabilities	+	0.806***	0.000	Supported
H3 Business Process Capabilities→Organization Resilience	+	0.671***	0.000	Supported

***Significant at the 0.01 level.

**Significant at the 0.05 level.

Additional testing

Sensitivity analysis or robustness further researchers perform testing to test the effects produced previously. Test robustness by adding control variability in the model, in this study the control variability used is experience, long time using AIS and turnover of small and medium enterprises. The results of the analysis showed that in the presence of control variables, the relationship between latent variables remained positive and insensitive to control variables. Thus our investigations in the analysis produce results that remain correct and appropriate. The results of robustness analysis by adding control variables in the test can be seen in Table 6.

Table 6. Robustness test

Variable	Original Model	p-Value	Control Variabel Model	p-Value
H1 Adoption AIS→Oraganization Resilience	0.191**	0.031	0.195**	0.025
H2 Adoption AIS→Business Process Capabilities	0.806***	0.000	0.811***	0.000
H3 Business Process Capabilities→Organization Resilience	0.672***	0.000	0.665***	0.000

***Significant at the 0.01 level.

**Significant at the 0.05 level.

With the support of the four hypotheses proposed, the researcher conducted a follow-up analysis to investigate the possibility of indirect effects on latent variables and business process capability variables. The test uses SmartPLS to test the significance of direct tidal effects by using bootstrapping with 500 iterations of data sampling to calculate the p-value of indirect effects of business process capabilities on business resilience and organizational performance. The results of the indirect influence analysis can be seen in Table 7. The effect of AIS Adoption on the performance of small and medium enterprises mediated by organizational resilience obtained significant results ($p = 0.034$), meaning that organizational resilience can mediate the relationship of AIS adoption

to the performance of small and medium enterprises. The effect of AIS Adoption on organizational resilience through business process capabilities obtained significant results ($p = 0.000$), meaning that business process capabilities are able to mediate the relationship between AIS Adoption and organizational resilience. Mediation testing of organizational resilience from business process capabilities to the performance of small and medium enterprises obtained significant results ($p = 0.000$), meaning that there is an effect of mediating organizational resilience from the relationship between business process capabilities and organizational performance. Analysis of indirect path coefficient and related p -values showed that the indirect tests all showed significant results, the business process capability variable being a moderation variation between AIS Adoption and organizational resilience. We observe that the business process capability relationship is variable mediation with category as complementary partial mediation.

Tabel 7. Analysis of mediation effects (specific indirect effects)

Variable	Original Sampel	Sample mean	SD	t-Statistic	p-Value
Adoption AIS→BPC→OR	0.541	0.543	0.064	8.418	0.000

With respect to theoretical predictions about the role of business process capability in AIS adoption in small and medium enterprises on organizational resilience and performance, the results of the analysis of H1 (ascertaining the extent to which the effect of AIS adoption on organizational resilience corroborates from previous studies) and determining the basis of H2, H3 that have not been empirically tested before and in this study support the overall hypothesis. The results of this analysis can contribute both theoretical and empirical to knowledge.

The empirical results of this study on the impact of AIS adoption on organizational resilience, business process capabilities are consistent with previous research, but this study also offers new findings on the relationship between AIS adoption shaped by dynamic AIS implementation, Business Intelligence and employee competence in using AIS to improve organizational resilience and organizational performance.

Consistent with the perspective of upper echelon theory, the theory of dynamic capabilities, these findings highlight the important role of AIS adoption in the dynamic organizational environment of operational pressures and organizational environments both internal and external in improving organizational resilience and organizational performance. The results of this study strongly support the claim that organizational capabilities are supported from organizational readiness in AIS adopting. The adoption of accounting information systems in small and medium enterprises includes, the implementation of AIS in a dynamic environment, the use of Business Intelligence and the competence of human resources related to the use of AIS. It can ultimately help organizations improve organizational resilience and its performance. These findings are in line with previous research suggesting that IT capabilities can help businesses improve organizational resilience (Fatorachian & Kazemi, 2021; Prasad & Green, 2015).

Additional testing of the data provides further support to the study's findings. The results of the test by including the control variable as a robustness test, the latent variable relationship maintains significance and presidksi arak i.e. the findings of the previous results are not sensitive to the influence of this control variable.

The findings of the mediation effect test show that partial mediation of business process capabilities is related between AIS Adoption and organizational resilience. These findings reinforce the idea of capability ranking, which suggests that capabilities at lower levels can help organizations develop capabilities at higher levels. Organizations can rely on dynamic capabilities to stay competitive when facing complex and uncertain business environments to stay competitive by being adaptive. Organizations with better business process capabilities can easily anticipate market demand, identify external competitors, establish long-term relationships with external stakeholders, and respond quickly to market changes. It also helps organizations maintain competitiveness and use their valuable strengths to identify threats and capitalize on market opportunities.

CONCLUSION

This study examines how the application of dynamic AIS, business intelligence (BI), and human resource competences concerning AIS may build AIS adoption capabilities. It does this by drawing on resource-based view theory, dynamic capability view theory, and upper echelon theory. In this study, we examine how business process skills impact organizational performance, organizational resilience, and adoption of AIS. Our proposed hypothesis is supported by all of the analysis's findings. The analysis's conclusions show that there is a positive relationship between organizational performance and resilience as well as a significant positive relationship between AIS adoption and business process capabilities, organizational resilience and business process capabilities, and organizational resilience and resilience to business processes. The connection between company resilience and the mediation of business process capabilities resulting from AIS adoption.

Lastly, there are restrictions on research participants. Because this study relies on a web-based survey, sampling bias may exist, making it inappropriate for general usage. The model may be tested in subsequent studies using other samples and techniques. In addition, although we have a good understanding of how businesses handle unforeseen circumstances, we know relatively little about the stages of resilience and how the dynamics of AIS as a knowledge source may affect such events. Ideas and conclusions from this study should be incorporated into future research, which should concentrate more on other areas of study. Lastly, there are restrictions on research participants. Because this study relies on a web-based survey, sampling bias may exist, making it inappropriate for general usage. Future studies might employ various samples and techniques to methods to test the model. In addition, although we have a good understanding of how businesses handle unforeseen circumstances, we know relatively little about the stages of resilience and how the dynamics of AIS as a knowledge source may affect such events. Ideas and conclusions from this study should be incorporated into future research, which should concentrate more on other areas of study.

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