

The Effect of National Institute Perspective on E-Commerce Adoption by SMEs in Indonesia

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Abstract

Indonesia is a country with huge E-Commerce market potential. Using E-Commerce in business activities can increase productivity, but its adoption tends to be slow in developing countries. This research aims to analyze how the National Institute Perspective influences the adoption of E-Commerce in fashion SMEs in West Java. The variables in this study include exogenous variables consisting of Perceived Organizational Readiness, Perceived Industry Readiness, Perceived National Readiness, External Environment, and E-Commerce adoption as endogenous variables. This study used 356 respondents. Respondent selection uses a non probability sampling approach with a convenience sampling method. Data processing techniques using Smart PLS software version 3.0. The findings demonstrated that the factors of perceived national and organizational preparedness have an impact on E-Commerce adoption.

Keywords: Adoption; E-Commerce; SME

1. Introduction

1.1 Background of the study

In the modern digital economy, Indonesia is a nation with a lot of promise. In order to promote the growth and enhancement of community economic activities across Indonesia in an effective and globally connected manner, the government released a Presidential Regulation on the E-Commerce Roadmap. The younger generation is also encouraged to create, innovate, and invent new economic activities by this e-commerce plan. The Roadmap for the Electronic-Based National Trade System, or SPNBE, was the subject of Presidential Regulation No. 74 of 2017. Small and Medium Enterprises (SMEs) offer a significant contribution to the national economy especially in developing countries (Kotelnikov, 2007). However, the problem often faced by developing countries is that the national geography is not able to facilitate all citizens to provide services 24 hours a day and 7 days a week.

The growth of the internet around the world is growing very rapidly today. Active internet users in the world reached 5.03 billion in July 2022. While in Indonesia, internet users reached 212 million in 2022, or 77% of the total population. The biggest growth in Indonesia occurred in 2014 when the increase in internet users reached 34.9% compared to the previous year. This amount of growth makes Indonesia rank in the top five in the world after China, India, America, and Brazil (Newman et al., 2022.). The use of the Internet to fulfill daily needs has now become commonplace. The main reason why the world community chooses the internet as life support is because of the time and cost efficiency offered. The business sector is one that greatly utilizes the rapid development of the Internet, where E-Commerce and online shopping have dominated. According to Hootsuite's Global State of Digital 2022 report, 57.5% of all people in the world between the ages of 16 and 64 shop for products and services online every week.

The process of purchasing, selling, or trading goods, services, and information via computer networks—including the Internet—is known as e-commerce. Since the Internet initially made its way into Indonesia in the early 1990s, e-commerce has grown in tandem with it. E-commerce activities in Indonesia have been used by companies in various business scales, ranging from the micro industry sector to large industries. The development of e-commerce activities on a small scale is currently supported by the many media that can be utilized by the community. Social media such as Facebook, Twitter, or Instagram, initially only as a medium for friendship and information exchange between friends or relatives, is now widely used as a marketing medium by a company or online shops, especially from the micro, small, and medium enterprise (MSME) sector.

Indonesia is the country with the largest number of internet users with the activity of buying a product online as much as 86% of the total population of internet users (Social-H2-2018-Report). Based on data from Euromonitor, the value of online trade in Indonesia in 2015 amounted to US\$ 1.1 billion. This amount is the largest in the ASEAN region, exceeding Singapore and Thailand. According to data from the research institute ICD, Indonesia's e-commerce market expanded by 42% between 2012 and 2015. Compared to other nations like Malaysia (14%), Thailand (22%), and the Philippines (28%), this number is higher. E-commerce in Indonesia, with its remarkable growth, now plays a pivotal role in various business scales, from micro industries to large enterprises. Despite its economic significance, factors influencing e-commerce adoption, especially among Micro, Small, and Medium Enterprises (MSMEs), remain underexplored. Existing studies focus heavily on technological advancements but often neglect the nuanced role of organizational readiness in driving adoption in specific contexts like Indonesia's burgeoning MSME sector.

The production operations of small and medium-sized businesses are labor-intensive, technologically simple, and capable of absorbing large amounts of workers. This promotes parity in the allocation of income and business possibilities. In addition, Hanifah (Hanifah, 2011) explained that Micro, Small and Medium Enterprises (MSMEs) play an important role in strengthening the macroeconomic structure. In 2021 the micro, small and medium business sectors contributed 60.5% to GDP. Micro, Small and Medium Enterprises also provide increased labor absorption, from 96.99 percent to 97.22 percent in 2021 (kemenperin.go.id). Understanding the drivers of e-commerce adoption in this sector is critical for economic growth and digital transformation. As global competition intensifies and digital tools become indispensable, ensuring that MSMEs are well-equipped to leverage e-commerce is more urgent than ever.

Unlike previous studies that assess e-commerce adoption broadly and focus on technology acceptance, this research focuses on the interaction on the National Institute Perspective (NIP) in the context of MSMEs, using the Diffusion of Innovation (DOI) theory as a conceptual framework. This nuanced approach provides new insights into how MSMEs perceive and overcome the challenges of adopting e-commerce technology.

Many factors influence the adoption of E-Commerce technology. Based on several previous studies, it was found that organizational readiness has a significant influence on the application of E-Commerce in MSMEs in the Depok area, West Java (Syah et al., 2017), and in Malaysian Furniture Industry MSMEs (Shaharudin, 2012). The perceived advantages and resources of the organization are used to determine organizational preparedness. SME owners and managers must be persuaded that the advantages of e-commerce adoption are pertinent to the contemporary business climate and that they can exceed the risks and expenses involved in order for them to contemplate adopting it (Kim & Pae, 2007). One distinctive feature of this DOI theory research is the concept of perceived advantages (Rogers et al., 2014). In the context of SMEs, it has been repeatedly linked to the adoption of e-commerce. Owners and managers must also be certain that their company has the resources, including the necessary skills to implement, oversee, and use e-commerce. These two elements, which include numerous additional organizational elements documented in the literature, are perhaps the most essential at the organizational level.

By incorporating organizational resources and perceived benefits as crucial elements of e-commerce

adoption inside MSMEs, this study adds to the body of literature. Practically, the findings will provide actionable recommendations for policymakers and business owners to develop targeted strategies that support MSMEs' digital transformation. This research aligns with ongoing discussions in leading journals, which emphasize the role of organizational readiness and perceived benefits in driving technological adoption, thereby enhancing business resilience and economic growth.

1.2 Review of Related Literature

1.2.1 Perceived Organization Readiness

The Organizational Readiness level is the first level taken into account in the suggested framework. Organizational preparedness is the primary driver of adoption when it comes to e-commerce adoption innovation (Ghobakhloo et al., 2011). Organizational culture factors (Kim & Pae, 2007), management support (Zhu & Thatcher, 2010), firm size, compatibility between E-Commerce and organizational norms, values, and culture (Ghobakhloo et al., 2011), perceived benefits of E-Commerce (Jeon et al., 2006a), and employee IT knowledge (Scupola, 2003) are some of the factors that are related to organizational readiness, while other studies consider organizational readiness in terms of the availability of financial and technological resources in SMEs.

According to Chong et al. (Chong & Bai, 2014), organizational readiness is a metric that assesses if a company has enough qualities to implement e-commerce. They contend that the most crucial element in assessing a company's readiness to embrace e-commerce is the backing of upper management. Organizational preparedness, according to Liu (Liu et al., 2015), is the degree of online proficiency among non-IT staff members. They contend that non-IT managers ought to be familiar with the Internet and that firms ought to be more prepared. Additionally, having a sufficient computer system architecture within the business to enable trouble-free Internet access and browsing is another aspect of organizational readiness. To successfully implement e-commerce in this situation, the business needs to be prepared with the appropriate technology and software. Web acceptance and usage are increased with sufficient infrastructure, negating the need for more computer system expenditure. The consequent cost benefit to the business has been highlighted as the primary motivator. However, SMEs cited worries over ongoing service availability as a significant obstacle that prevented the technology from being widely adopted (Doherty et al., 2015).

1.2.2 Perceived Industry Readiness

Industry structure and industry standards are two linked notions that make up the idea of perceived industry structure and standards. First, the degree to which management believes that the industry structure facilitates the adoption of e-commerce technology is known as perceived industry structure. The adoption of e-commerce technology may be hindered by the unfavorable industry structure of certain sectors. For instance, Ali and Kurnia (Ali & Kurnia, 2011) found that the grocery industry in Bahrain is characterized by fierce competition among its organizations because of overlapping functions and the existence of a small number of powerful and influential individuals. Therefore, when dealing with local players, firms choose to keep things the same even when they have the capacity to implement EC and trade electronically with trading partners abroad.

Second, management's assessment of the existence of coordinating organizations and standards that support the use of e-commerce technology is referred to as perceived industry standards. Because successful E-Commerce adoption necessitates that many industry sectors and segments work methodically through coordinating bodies to tackle their challenges and their projects, it is also crucial for industry-level readiness (Crowston & Myers, 2004). The presence of coordinating bodies offers a forum for cooperative problem-

solving and discussion (Gregor & Johnston, 2000). The creation of the databases and portals required to enable standardized procedures for trading partners to exchange business papers can also be supported by industry organizations. Thus, both of the PISaS concept's components are crucial elements of industry preparedness that affect SMEs' adoption of EC technology.

1.2.3 Perceived National Readiness

National Readiness is the third level (NR). Studies on the uptake of e-commerce that take the NR level into account are comparatively few. This suggests that NR is a significant barrier to the adoption of e-commerce (Dholakia & Kshetri, 2004). Many developing nations lack the necessary technological, social, cultural, legal, logistical, and financial infrastructure to successfully adopt and execute e-commerce innovations, which lends credence to this claim (Advisors, 2011). According to this perspective, the primary factor influencing EC adoption organizations is the national environmental conditions. Numerous factors related to NR have been examined in a number of earlier research on SMEs' adoption of EC. Regulatory environment and support, technology vendor support (Al-Qirim, 2007; Doolin et al., 2003; Chu & Thatcher, 2010), government support (Jeon et al., 2006b), and national infrastructure support (Huy & Filiatrault, 2006) are a few examples.

The term "perceived supporting service" (PSS) describes how management views the nation's service offerings that facilitate the uptake of EC technology. Relevant factors influencing SMEs' adoption of EC technologies include the availability of suitable technology infrastructure, qualified human resources to create and maintain EC applications, software/hardware vendors, regulatory environment and support, and IT and logistics infrastructure (Doolin et al., 2003); (Srinivasan et al., 2002). By offering dependable products, promoting knowledge within the ICT community, and enhancing them with technical competence, the presence of large international IT corporations can help encourage the uptake of EC. Additionally, ICT-trained human resources serve as a catalyst for EC initiatives. Access to competent people will be simple and inexpensive, which will encourage EC use, particularly among SMEs. Lastly, the adoption trend is anticipated to be influenced by the level of maturity of the legal and regulatory framework governing EC activities.

1.2.4 External Environment

According to Gorla (Gorla et al., 2017), the external environment is the demand from current internet users, particularly clients, suppliers, and staff who want the business to utilize the internet and interact electronically. Due to their fundamental reliance on customers for survival, small enterprises are more vulnerable to customer pressure, according to Grandon & Pearson (Grandon, 2004). According to their research, businesses can save operating expenses and boost their competitiveness in the market by establishing electronic connections with suppliers.

1.3 Research Framework

1.3.1 Conceptual Framework

The adoption process of new technology in the field of E-Commerce in developing countries tends to be slow (Esselaar, 2001). Nevertheless, the E-Commerce market in Indonesia has great potential (Newman et al., 2022) and is experiencing rapid growth. Therefore, a comprehensive study on the adoption process of E-Commerce in Indonesia is necessary. Based on a literature review, E-Commerce adoption is influenced by dimensions of the national institutional perspective (Kurnia et al., 2015). Organizational culture also

plays a role in the E-Commerce adoption process (Sila, 2013). Companies that have adopted E-Commerce will experience an improvement in their performance (Behera et al., 2015).

The adoption of e-commerce technology may be hindered by the unfavorable industry structure of certain sectors. For example, Ali and Kurnia (Kurnia et al., 2015) found that the grocery industry in Bahrain is characterized by fierce competition among its organizations because of overlapping functions and the existence of a small number of powerful and influential players. As a result, firms choose to keep things the same while interacting with local players, even though they have the capacity to embrace e-commerce and conduct electronic trade with partners abroad.

One of the studies discussing the development of E-Commerce for SMEs was conducted by Doolin (Doolin et al., 2003), which categorizes E-Commerce adoption into five levels.

- **Level 1:** There are two reasons why companies engage in E-Commerce activities. First, the firm supports its operations by using the internet as a tool for information searches. Second, the business communicates with suppliers and consumers via email.
- **Level 2:** At this stage, companies have a website to display their product catalog and further develop email usage for communication, document exchange, and ordering with customers or suppliers.
- **Level 3:** Companies use a website with search menu features and essential company information. The website also provides an option for ordering displayed products. Additionally, at this level, manual payment methods such as bank deposits, bank checks, or Internet Banking are available. The market potential is still limited to the domestic level.
- **Level 4:** Companies further develop their E-Commerce activities by enabling fully automated online ordering, including order confirmation and automatic invoice generation. Additionally, companies can accept online payments via credit and debit cards, electronic cash, electronic fund transfers, or EDI (Electronic Data Interchange) services. Businesses can also take online payments through EDI (Electronic Data Interchange) services, electronic currency, credit and debit cards, and electronic financial transfers. At this level, companies expand their market potential to international markets.
- **Level 5 (E-Business):** At this final stage of E-Commerce adoption, all business activities and internal processes are integrated through ICT (Integrated Computer Technology).

1.3.2 Hypotheses

This study will test four hypotheses, namely how the dimensions of the national institutional perspective influence the adoption of e-commerce in SMEs in Indonesia.

H1: Perceived Organization Readiness affects the adoption of E-Commerce by SMEs in Indonesia.

H2: Perceived Industry Readiness affects the adoption of E-Commerce by SMEs in Indonesia.

H3: Perceived National Readiness affects the adoption of E-Commerce by SMEs in Indonesia.

H4: External Pressure affects the adoption of E-Commerce by SMEs in Indonesia.

2. Methods

The research object in this study is MSMEs in Indonesia engaged in fashion in West Java. This field was chosen because of the need for large promotional media to introduce new products or promo offers to consumers. E-commerce is a medium that can be used to do this because of its ability to reach consumers quickly and widely. The sample in this study were MSME actors, both business owners and employees engaged in fashion. In this study, the following Slovin sample formula was used: The number of samples used in this

study amounted to 356 business units consisting of ultra-micro scale, micro scale, small scale, and medium scale businesses.

The independent variables studied in this research are perceived organizational readiness and perceived national readiness. Based on the literature study that has been conducted, it is found that the indicators of perceived organizational readiness are: (1) Perceived Relative Advantage, (2) Perceived compatibility, (3) Cost, (4) Information Intensity, (5) CEO Knowledge (6) CEO Innovativeness, (7) Perceived Organization Resources and Governance. Furthermore, the indicators obtained from the national readiness variable are (1) Government regulations and policies, (2) Availability of technology vendors at the multinational level, and (3) National technology infrastructure. In this study, the independent variable is the level of E-Commerce adoption. The indicator of the use of E-commerce is the level of development which consists of five (5) levels, namely: (1) Messaging, (2) Online Marketing, (3) Online Ordering, (4) Online Transaction, (5) E-business. Meanwhile, the moderating variable is the characteristics of the company by looking at the organizational culture that exists in the company.

The second-generation multivariate analysis method called structural equation modeling, or SEM, is used in structural equation modeling. Research that satisfies worldwide requirements for superior statistical analysis can be tested using this technique. SEM enables researchers to model the link between multiple independent and dependent factors at the same time in a methodical, comprehensive, and single manner. Partial least squares SEM (PLS-SEM, also called PLS path modeling) and covariance-based SEM (CB-SEM) are the two primary methods used in this work to analyze the interactions of structural equation models.

PLS-SEM is a useful option because it works well with small samples and sophisticated models (Hair et al., 2019). Because the application is done using non-parametric techniques, PLS-SEM is used because it has the benefit of enabling data that is not normally distributed in structural equation modeling. Unlike covariance-based SEM, PLS-SEM does not employ global model fit criteria (Suhendra et al., 2019).

3. Result and Discussion

Three steps were used to test the study's data analysis: hypothesis testing, measurement model analysis (outer model), and structural model analysis (inner model). In order to ascertain whether the moderating variable will improve or worsen the link between the independent and dependent variables, this study employed moderation analysis using SmartPLS as its data analysis approach. The measurement model (outer model) is assessed using the indicators' composite reliability, discriminant validity, and convergent validity using SmartPLS 3.0 software. The figure below displays the Smartpls output results.

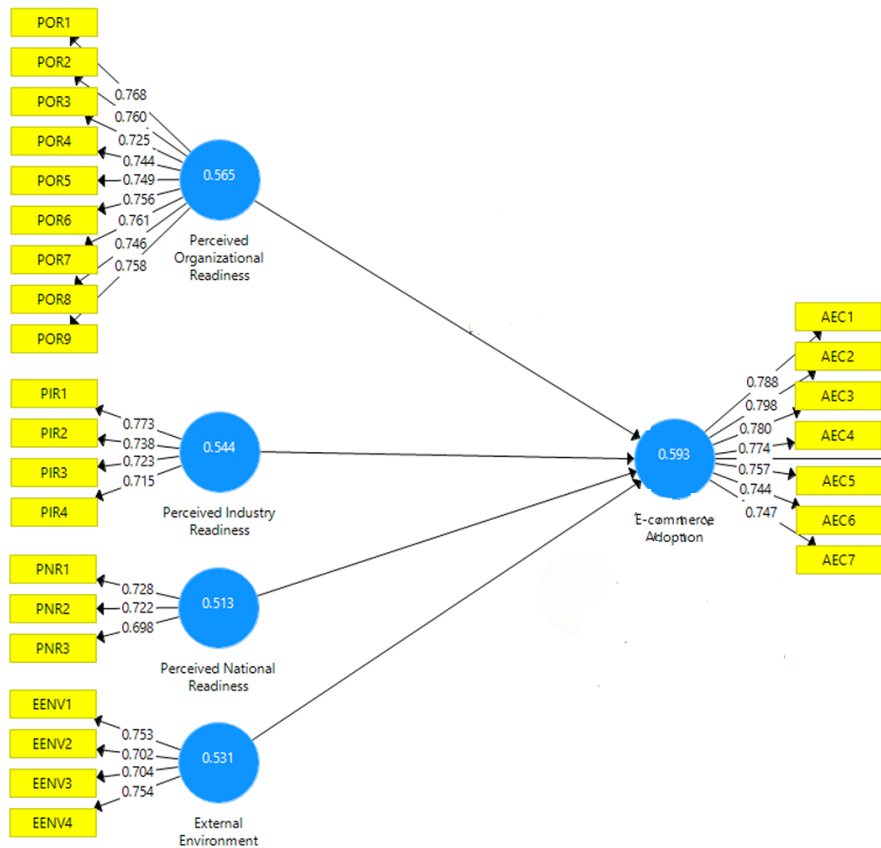


Figure 1. PLS Algorithm

Convergent validity, discriminant validity, and composite reliability for block indicators are used to assess the data processing output from the outer model diagram with reflexive indicators, as shown in Figure 1 above.

The study's hypothesized relationship between latent constructs is assessed using a structural model test, also known as an inner model. R-square can be used to evaluate the structural model test. The independent variable's impact on the dependent variable and path coefficients is measured using R-square. The degree to which various independent latent factors impact the dependent latent variable can be determined by examining changes in the R-square value. A value of 0.214 is provided by the National Institute Perspective influence model on e-commerce adoption. These findings demonstrate that the variability of the E-commerce Adoption construct can be explained by the variability of the perceived organizational readiness and perceived national readiness constructs to the extent of 21.4%, with other variables not included in this study accounting for the remaining 78.6%.

The significant value between variables, t-statistics, and p-values all show whether a hypothesis is accepted or rejected. The bootstrapping results demonstrate this value. The study's general guidelines include a positive beta coefficient, a p-value significance level of 0.05 (5%) and t-statistics > 1.96. Figure 2 below provides an illustration of this research model's findings.

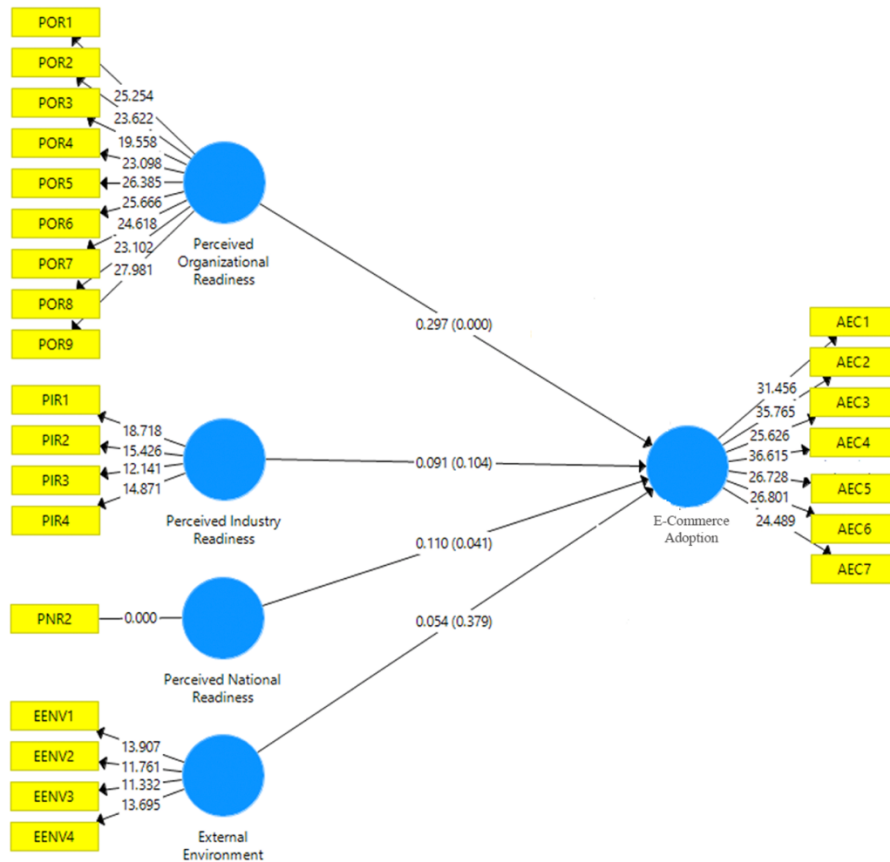


Figure 2. Bootstrapping Structural Model Testing

There are four hypotheses proposed in this study. Of the four latent variables in the National Institute Perspective, there are two hypotheses supported in this study, namely Perceived Organizational Readiness, and Perceived National Readiness for E-Commerce Adoption. While the hypotheses of Perceived Industry Readiness and External Environment on E-Commerce Adoption are rejected. This means that the internal readiness of the company from business actors is important before adoption is carried out. Business actors must ensure that from the internal side at all levels have the same readiness. However, it must start from the top management level. This is evidenced by the CEO Knowledge Indicator which makes the largest contribution to the Perceived Organizational Readiness variable. The company leaders are expected to be able to lead and prepare human resources to support the adoption process. This supports research from Donny (Syah et al., 2017) which examines the creative industry in Jabodetabek, where it is found that Organizational Readiness contributes significantly to E-Commerce Adoption. Other research from Kurnia (Kurnia et al., 2015) which examines SMEs in the field of grocery retail found that Perceived Organization Resources and Governance which are indicators of Perceived Organizational Readiness also have a significant effect on E-Commerce adoption.

The Perceived Industry Readiness variable does not have a significant effect on E-Commerce Adoption. This is related to the standards and structures that exist in the industrial world. This shows that the presence of

E-Commerce is indeed an option to improve the business being run, this is shown in the descriptive statistical test that has been carried out. However, business actors consider that the readiness of the industrial world to face E-Commerce does not contribute to the adoption decision made. This means that what is happening in the industrial world does not affect the decision to adopt E-Commerce. Similar things are also found in several other studies. Sherah Kurnia (Kurnia et al., 2015) who examined SMEs in the grocery retail sector in Malaysia found that industry structure and standards did not contribute to the adoption of E-Commerce. Furthermore, Bang Nam (Jeon et al., 2006a) who studied SMEs in Korea also found that the pressure of industrial competition had no significant effect on the adoption of E-Commerce.

The same thing happens to the External Environment variable which has no significant effect on E-Commerce adoption. This External Environment consists of the industrial world, trading partners, and customers. Business actors do feel external pressure to adopt, this is based on descriptive statistical tests that have been carried out. However, this does not contribute to the adoption decision that has been made. Thus it can be concluded that from the latent variables in the National Institute Perspective, business people will adopt E-Commerce when there is readiness from within the company, and there is legal certainty provided by the government. This is also in line with some previous research. Abbad (Abbad et al., 2022) who examined manufacturing SMEs in Jordan also found that Competitive pressure and Environmental pressure did not significantly affect the adoption of E-Commerce. Furthermore, Rubby Roy (Dholakia & Kshetri, 2004) who studied SMEs in the USA also found that the environmental variable had no effect on the adoption of E-Commerce. However, it is slightly different from the study of the B2B sector studied by Sila (Sila, 2013) in North America which found that Pressure from trading partners and Pressure from competition contribute to the adoption of E-Commerce.

The Perceived National Readiness variable has a significant influence on E-Commerce Adoption. This is mainly related to support for legal protection guarantees related to electronic transactions carried out, as well as the security of consumer privacy from cybercrime. This means that the government needs to provide complete laws related to E-Commerce activities so that business people are more confident and feel safe in using E-Commerce in their business. This is supported by research from Abbad (Abbad et al., 2022) which examines manufacturing SMEs in Jordan where it was found that Government Support has a significant effect on E-Commerce adoption. Ling Zhu (Zhu & Thatcher, 2010), Government Policy and Legal Environment support adoption. In line with this, Bang Nam (Jeon et al., 2006b) who examined SMEs in Korea also found that government support has a significant effect on E-Commerce adoption. Furthermore, Le Van Huy (Huy & Filiatrault, 2006) who studied SMEs in Vietnam also found that the level of government support and national infrastructure contributed significantly to the adoption of E-Commerce.

4. Conclusion and Recommendation

This study found that Perceived Organizational Readiness and Perceived National Readiness have a significant influence on e-commerce adoption by small and medium enterprises (SMEs) in Indonesia. These results suggest that internal firm readiness, including management support and resources, is critical in driving the adoption of e-commerce technology. In addition, government support and legal guarantees related to electronic transactions and privacy protection are also important factors in increasing business confidence to adopt e-commerce.

It is important for companies, especially SMEs, to ensure internal readiness before adopting e-commerce. Companies should focus on improving their technology infrastructure and human resource capabilities related to information technology. The government needs to improve regulations and infrastructure that support e-commerce adoption, such as providing stronger support for consumer protection and electronic transaction security. Further research can expand the focus on other industries outside SMEs and other geographical areas in Indonesia so that the results can be more representative.

5. Limitations of the Study

This study is limited to SMEs in the fashion sector in the West Java region. In addition, the use of a non-probability sampling method may limit the generalizability of the results. The research model also only explains about 21.4% of the variability of e-commerce adoption, which means that other factors outside this study are also influential but have not been identified in this study.

- Abbad, M., Magboul, I. H. M., & AlQeisi, K. (2022). Determinants and outcomes of e-business adoption among manufacturing SMEs: Insights from a developing country. *Journal of Science and Technology Policy Management*, 13(2), 456–484. <https://doi.org/10.1108/JSTPM-03-2021-0049>
- Advisors, D. G. D. (2011). *Report on Support to SMEs in Developing Countries Through Financial Intermediaries*. Dalberg. <https://books.google.co.id/books?id=8WFvAQAAAJ>
- Ali, M., & Kurnia, S. (2011). Inter-organizational systems (IOS) adoption in the Arabian Gulf region: the case of the Bahraini grocery industry. *Information Technology for Development*, 17(4), 253–267. <https://doi.org/10.1080/02681102.2011.561278>
- Al-Qirim, N. (2007). The adoption of eCommerce communications and applications technologies in small businesses in New Zealand. *Electronic Commerce Research and Applications*, 6(4), 462–473. <https://doi.org/10.1016/j.elerap.2007.02.012>
- Behera, A., Nayak, N., & Das, H. (2015). Performance measurement due to IT adoption. *Business Process Management Journal*, 21(4), 888–907. <https://doi.org/10.1108/BPMJ-07-2014-0068>
- Chong, A. Y. L., & Bai, R. (2014). Predicting open IOS adoption in SMEs: An integrated SEM-neural network approach. *Expert Systems with Applications*, 41(1), 221–229. <https://doi.org/10.1016/j.eswa.2013.07.023>
- Crowston, K., & Myers, M. D. (2004). Information technology and the transformation of industries: three research perspectives. *The Journal of Strategic Information Systems*, 13(1), 5–28. <https://doi.org/10.1016/j.jsis.2004.02.001>
- Dholakia, R. R., & Kshetri, N. (2004). *Factors Impacting the Adoption of the Internet among SMEs* (Vol. 23). Kluwer Academic Publishers.
- Doherty, E., Carcary, M., & Conway, G. (2015). Migrating to the cloud examining the drivers and barriers to adoption of cloud computing by smes in ireland: An exploratory study. *Journal of Small Business and Enterprise Development*, 22(3), 512–527. <https://doi.org/10.1108/JSBED-05-2013-0069>
- Doolin, B., McLeod, L., McQueen, B., & Watton, M. (2003). Internet Strategies for Established Retailers: Four New Zealand Case Studies. *Journal of Information Technology Case and Application Research*, 5(4), 3–20. <https://doi.org/10.1080/15228053.2003.10856030>
- Esselaar, P. & M. J. (2001). Towards electronic commerce in Africa : a perspective from three country studies. *The Southern African Journal of Information and Communication*, 2001(2), 1–19. https://doi.org/10.10520/AJA20777213_6
- Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011). Adoption of e-commerce applications in SMEs. *Industrial Management and Data Systems*, 111(8), 1238–1269. <https://doi.org/10.1108/02635571111170785>
- Gorla, N., Chiravuri, A., & Chinta, R. (2017). Business-to-business e-commerce adoption: An empirical

- investigation of business factors. *Information Systems Frontiers*, 19(3), 645–667.
<https://doi.org/10.1007/s10796-015-9616-8>
- Grandon, E. (2004). E-Commerce Adoption: Perceptions of Managers/Owners of Small and Medium Sized Firms in Chile. *Communications of the Association for Information Systems*, 13.
<https://doi.org/10.17705/1CAIS.01308>
- Gregor, S., & Johnston, R. (2000). Developing an Understanding of Interorganizational Systems: Arguments for Multi-Level Analysis and Structuration Theory. In *Proceedings of 8th European Conference on Information Systems*.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hanifah. (2011). *The Effect of Entrepreneurial Orientation, Organizational Culture and Business Strategy to The Corporate Performance*. <http://eprints.unisbank.ac.id/531/2/ARTIKEL-58.pdf>
- Huy, L. Van, & Filiatrault, P. (2006). *The Adoption of E-commerce in SMEs in Vietnam: A Study of Users and Prospects*. PACIS.
- Jeon, B. N., Han, K. S., & Lee, M. J. (2006a). Determining factors for the adoption of e-business: the case of SMEs in Korea. *Applied Economics*, 38(16), 1905–1916. <https://doi.org/10.1080/00036840500427262>
- Jeon, B. N., Han, K. S., & Lee, M. J. (2006b). Determining factors for the adoption of e-business: The case of SMEs in Korea. *Applied Economics*, 38(16), 1905–1916. <https://doi.org/10.1080/00036840500427262>
- Kim, N., & Pae, J. H. (2007). Utilization of new technologies: organizational adaptation to business environments. *Journal of the Academy of Marketing Science*, 35(2), 259–269.
<https://doi.org/10.1007/s11747-007-0032-6>
- Kotelnikov, V. (2007). *Small and Medium Enterprises and ICT Asia-Pacific Development Information Programme*.
- Kurnia, S., Choudrie, J., Mahbubur, R. M., & Alzougool, B. (2015). E-commerce technology adoption: A Malaysian grocery SME retail sector study. *Journal of Business Research*, 68(9), 1906–1918.
<https://doi.org/10.1016/j.jbusres.2014.12.010>
- Liu, Y., Li, H., Peng, G., Lv, B., & Zhang, C. (2015). Online purchaser segmentation and promotion strategy selection: evidence from Chinese E-commerce market. *Annals of Operations Research*, 233(1), 263–279. <https://doi.org/10.1007/s10479-013-1443-z>
- Mohd Rizaimy Shaharudin. (2012). Determinants of electronic commerce adoption in Malaysian SMEs' furniture industry. *African Journal of Business Management*, 6(10).
<https://doi.org/10.5897/AJBM11.2477>
- Newman, N., Fletcher, R., Robertson, C. T., Eddy, K., & Kleis Nielsen, R. (n.d.). *Reuters Institute Digital News Report 2022*. <https://doi.org/10.60625/risj-x1gn-m549>
- Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432–448). Routledge.
- Scupola, A. (2003). The Adoption of Internet Commerce by SMEs in the South of Italy: An Environmental, Technological and Organizational Perspective. *Journal of Global Information Technology Management*, 6(1), 52–71. <https://doi.org/10.1080/1097198X.2003.10856343>
- Sila, I. (2013). Factors affecting the adoption of B2B e-commerce technologies. *Electronic Commerce*

Research, 13(2), 199–236. <https://doi.org/10.1007/s10660-013-9110-7>

Srinivasan, R., Lilien, G. L., & Rangaswamy, A. (2002). Technological Opportunism and Radical Technology Adoption: An Application to E-Business. *Journal of Marketing*, 66(3), 47–60. <https://doi.org/10.1509/jmkg.66.3.47.18508>

Suhendra, E. S., Filandari, M., Indrayani, E., & Maulana. (2019). The direct and indirect effect of enterprise resource planning system implementation on firm performance through the organizational capabilities as a mediator. *International Journal of Engineering and Advanced Technology*, 8(5), 588–597. <https://doi.org/10.35940/ijeat.E1084.0585C19>

Syah, D. O., Lupiyoadi, R., & Tjiptadi, A. P. (2017). Factors affecting the use of e-commerce in creative industries: Empirical evidences from SMES in Jabodetabek-Indonesia. *Jurnal Siasat Bisnis*, 20(2), 143–160. <https://doi.org/10.20885/jsb.vol20.iss2.art4>

Zhu, L., & Thatcher, S. M. B. (2010). NATIONAL INFORMATION ECOLOGY: A NEW INSTITUTIONAL ECONOMICS PERSPECTIVE ON GLOBAL E-COMMERCE ADOPTION. In *Journal of Electronic Commerce Research* (Vol. 11).