

# Antecedent and Consequence of Implementation Information Technology Adoption at Small Medium Enterprise (SMEs)

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## ABSTRACT

This study has examined the importance of information technology adoption for small and medium enterprises (SMEs), by determining the influence of factor perceived simplicity, compatibility, and performance expectancy. Furthermore, the impact of IT adoption will be assessed on sustainable competitive advantage. There are three hypotheses tested; H1: The higher the level of IT adoption, the higher the Sustainable Competitive Advantage (SCA), H2: The higher the level of simplicity in using new technology, the higher the rate of adoption of information technology, H3: The greater the suitability of a technology, the greater the interest in IT adoption. Performance Expectancy to IT Adoption and H4: The higher the level of expected performance of someone in the organization, the higher the intention to adopt technology. This research has been conducted by testing SEM (Structural Equation Modeling) using SmartPLS statistical software. The data were collected using survey questionnaires to 250 managers who handled IT adoption in Indonesian companies. Results obtained using structural equation modeling (SEM) reveal a positive relationship of IT adoption on sustainable competitive advantage. The other result show that there was relationship among perceived simplicity, compatibility, and performance expectancy on IT adoption. IT adoption practices are very urgent implemented by SMEs to ensure sustainable competitive advantage. Implementation focus on technology simplicity and impact of IT on creating sustainable competitive advantage.

**Keywords:** perceived simplicity, compatibility, performance expectancy, IT adoption, sustainable competitive advantages (SCA).

## INTRODUCTION

The digital age is an exciting era for business and technology. In this era, all business sectors underwent changes that required digitalization in their operations, with the exception of Micro, Small and Medium Enterprises (SMEs) also being demanded to adjust to changes to be able to survive and have sustainable competitive advantages. The biggest challenge being faced by SMEs is how to increase the accessibility of SMEs to go digital and increase the capabilities of SMEs so as to produce products that can compete with foreign products that have flooded Indonesia's e-commerce. In this digital economy era, SMEs can easily market their products, not only in the domestic market but also in the international market or at least crossing into the ASEAN regional market or cross border. With the efforts to digitize these SMEs, it is hoped that SMEs will have a sustainable competitive advantage and not necessarily be stopped because of changes in business trends that continue to develop.

Sustainable Competitive Advantage (SCA) has become one of the important goals of SMEs throughout the world (Papula & Volná, 2013). Jonsdottir, Sparf, & Hanssen (2005), chose the importance of considering the

sustainability of SMEs strategies from three behavioral patterns: reactive patterns, which determine how companies consider elements or stimuli from the external environment; anticipatory patterns that represent the company in achieving competitive advantage; and finally create a company-oriented pattern that can adapt to innovation to achieve market excellence. The reactive and anticipatory sustainability strategy of SMEs is proven to be the best strategy that produces responses to external environmental stimuli. In general, concepts that are thought to be important for SMEs to compete domestically and also improve their performance (Moraes et al., 2014). In essence, all of these businesses including adoption of Information Technology can provide support for SMEs to overcome basic challenges, thereby increasing their excellence in competitive markets (Onwumere & Ozioma- Eleodinmuo, 2015).

The perceived ease and simplicity of use is the level of ease associated with the use of the Legris et al (2003) system. Extensive research has also provided support for the effect of perceived ease of use on intentions to use technology (Legris et al., 2003). ). The perceived ease of use and the benefits felt together have been shown to have a significant impact on people's intention to adopt technology (Chen, 2008). In addition to the ease and simplicity that is felt in using technology, it is also important to know that a new technology that is used is in accordance with what is needed or commonly referred to as compatible.

Innovative products offer functions that did not previously exist or enhance original products to meet market needs and consumer preferences, making compatibility with previous related products an important factor in product development and improvement. It is from this compatibility that then emerges performance expectations for the adoption of the technology used, whether it can improve performance or not. Performance expectation itself is defined as the extent to which using technology will benefit consumers in carrying out certain activities (Moraes et al., 2014). Individual perceptions are important to know that using technology-based transactions such as mobile payment transactions will help achieve benefits in performing tasks so that they can influence behavioral intentions to adopt new technologies (Oliveira, Thomas, Baptista, & Campos, 2016). Technology, organizational and environmental factors have a significant relationship to technology adoption (Awa, Ukoha, & Igwe, 2017). The intensity of adoption of information technology practices is extended to organizations by applying information technology to sustainable development strategies (Y. H. Lin & Chen, 2017). Awa et al., (2017) in their study found a negative and significant relationship between perceived compatibility and technology adoption. This finding contrasts with the findings of Wang, Cho, & Denton (2017) ) which show a positive relationship between perceived compatibility and technology adoption. Conversely, the finding contrasts yet other studies (Deng, Ji, & Wang, 2020) that found compatibility non-critical in EDI and ERP adoption. In other variables, it also shows the differences in research results. In the context of online banking, Wang, Cho, & Denton (2017) found a positive relationship between the compatibility felt by customers with online banking and the initial trust in online banking. This finding contradicts Aljaafreh (2016), which rejects the effect of perception of compatibility on the initial trust of internet-only banks. Grover (1993), also found a negative relationship between perceived simplicity and information technology adoption.

The various research gaps that have been described show that studies of perceived simplicity, compatibility, and performance expectancy are important variables that need to be reviewed in relation to information technology adoption and sustainable competitive advantage. So based on the background description, this study will examine the importance of the adoption of information technology for small and medium industries (SMEs), by determining the influence of factors perceived simplicity, compatibility, and performance expectancy. Furthermore, it will also examine the impact of IT adoption on sustainable competitive advantage. This study develops previous research conducted by Awa that tests the theory of T-E-O towards the adoption of information technology. This research was developed by incorporating the impact of technology adoption on sustainable competitive advantage.

This study contributed to the previous literature in several ways. First, this study explores the relationship between perceived simplicity, compatibility, and performance expectancy for information technology adoption and sustainable competitive advantage. Meanwhile, previous research emphasizes the profitability of companies as dependent variables (Maury, 2018), green competitive advantage (Y. H. Lin & Chen, 2017),

business competitiveness (Huang, 2015; Ainin, Naqshbandi, & Dezdar, 2016). Second, the majority of research uses variable antecedence, but in this study several variables were developed, such as perceived simplicity (Liu, 2014), compatibility (Martins, Oliveira, & Popovic, 2014), dan performance expectation (Rahi, Ghani, & Ngah, 2018). These variables are expected to be able as predictor variables for small and medium businesses in adopting information technology, which can further enhance their competitive advantage in a sustainable manner.

## LITERATURE REVIEW

### Sustainable Competitive Advantage (SCA)

Competitive advantage can be assessed by analyzing sources of excellence, such as the company's market position (Iles, 2008) and company resources (Barney, 1991), or measuring the results of competitive businesses through company performance (eg profitability) or market share stability. When competition tends to corporate profitability, high profits can become sustainable if the company has a sustainable competitive advantage. In practice, the sustainability of a company's competitive advantage is a measure of long-term corporate performance (Iles, 2008). Sources of competitive advantage are based on the level of durability, for example: market-based advantages and supply advantages (Greenwald, 2005)

Sustainable competitive advantage refers to value creation where a company pursues high innovation by encouraging market competition (Kuncoro & Suriani, 2018; Pratono, Darmasetiawan, Yudianto, & Jeong, 2019). Inter-organizational learning may fail from marketing orientation due to lack of competitive differentiation, satisfaction with the status quo and customer asymmetric information (Jogarathnam, 2017). Companies may believe the role of market orientation, but in practice, they may experience a lack of ability to achieve targeted performance through market orientation (Ho et al., 2017). Business competitiveness can be enhanced through the recognition of high quality products and services, which means that entrepreneurs need to increase their competitive advantage, which does not have to be linked to profit alone, but rather by focusing on providing better value to customers (Ratten, 2016). A company is said to have a competitive advantage when implementing a value creation strategy that is not carried out simultaneously by current or potential competitors, where other competitors cannot duplicate the benefits of this strategy (Zainol & Al Mamun, 2018).

Futhermore, Zainol & Al Mamun (2018) also stated that ownership of unique business practices caused some companies to outperform others, thus, this was the main source of sustainable competitive advantage. So SCA is a value creation strategy in which a company pursues high innovation by encouraging potential market competition, where other competitors cannot duplicate the benefits of this strategy.

The core of the strategy and development of sustainable competitive advantage is the identification, development and application of key resources, and ultimately, the resources most likely to lead to sustainable competitive advantage are opportunity recognition competency; Relationship competency; Conceptual competency; Organizing competency; Strategic competency; and Commitment competency (Zainol & Al Mamun, 2018). Other researchers say that SCA can be measured using strategic advantages; market share; and ROI (return on investment) (Pratono et al., 2019). Studies have found evidence that marketing innovation remains one of the important strategies for achieving SCA (Camisón & Villar-López, 2011; Ren et al., 2015; Quaye & Mensah, 2018). This shift in focus from only competitive advantage to SCA reinforces the research of Weerawardena & O'Cass (2004) who noted that SCA must involve providing superior customer value, achieving relatively lower costs for long periods of time and creating superior performance. The study conducted by Ren et al. (2015) recommends that SMEs must improve their marketing capabilities to achieve sustainable excellence with innovation and gain deeper insights about the needs, wants, and trends of consumers.

### Information Technology (IT) Adoption

Introduction Technology adoption information is critical and makes for informed investment decision in

competitive environment. For this, technology adoption is well-studied (Huang, 2015; Awa & Igwe, 2017) this informs the conceptualization of theoretical frameworks to provide information on the strengths and the interaction of specific. Information is a tool to achieve competitive advantage; companies that want technology applications that are easy, save costs and time for stakeholders (Awa et al., 2017). Therefore, technology adoption is based on information and voluntary consent of individuals and / or organizations to receive and / or operations needed to obtain information to solve problems (Khasawneh, 2008; Musawan & Wahab, 2012).

Furthermore Awa et al., (2017) defines companies to adopt IT when companies use hardware and software applications to support operational, intra-firm and inter-firm activities, and inter-firm interaction, management and decision-making processes. IT adoption is also understood as a variety of software and hardware that is used to carry out joint work with various functions of making information, storing, processing, preserving, and sending information in various ways (Nord et al., 2017). According to Eze, Chinedu-Eze, & Bello (2019), IT adoption is a decision that must be taken from time to time because it is sustainable, adoption of IT is related to its emphasis on studying both the complex and changing technical and social world, its complexity inhibits the widespread spread of adoption in small businesses. In addition, technology adoption covers the use of computers, the internet and cellular technology, especially the use of applications that can be used to support the daily lives of household members and their relationships with Information System stakeholders, for example companies, public administration and other households (Ziemba, 2018). So, IT adoption is a decision made by a company to use hardware and software applications to support operational activities, inter-firm interaction, management and decision-making processes to support daily operations.

According to Awa et al. (2017) IT adoption can be measured to determine the certainty of companies in using / adopting IT with dimensions (1) customer service and inventory management, (2) cost reduction and book-keeping, (3) e-trading, e-messaging, and inter -firm alignment, (4) e-mails, FAX, e-catalog, and e-news, (5) e-payroll and e-forms, (6) ordering and managing stocks, and (7) processing of loan credits and banking details. According to Eze et al. (2019) IT adoption has dimensions including: Awareness of multiple context; Openness to change; Shared support; Safety and security; Integration; Ease of use; Expandability; Managerial time; Service quality; Customer focus; Differentiation; Return on investment; Competition; Adoption cost. Meanwhile according to Ziemba (2018)) IT adoption can be measured by the dimensions of ICT outlay, information culture, ICT management and ICT.

Previous studies have been conducted to examine the effect of IT adoption on Sustainable Competitive Advantage (SCA). According to Ziemba (2018) based on the results of his research stated that IT adoption has a significant effect on SCA (Awa et al., 2017; Eze et al., 2019; Ziemba, 2018).). So the hypothesis can be formulated as follows:

**H1:** The higher the level of IT adoption, the higher the Sustainable Competitive Advantage (SCA)

### **Perceived Simplicity to IT Adoption**

The perception of simplicity of use is a key independent variable that influences the intention to use a system by knowing the extent to which a person believes that using the system will facilitate effort (Liu, 2014). Perceived ease of use is generally used to assess whether a system is accepted by users. Kucukusta, Law, Besbes, & Legoharel (2015) used the perception of ease / simplicity of use, perceived usefulness, positive mood, and behavioral intentions to assess the acceptance of decision support systems. The perception of simplicity of use usually refers to the overall perception of users relating to the ease and convenience of using a new system (Amin, Rezaei, & Abolghasemi, 2014; Rouibah, Lowry, & Hwang, 2016). So it can be concluded that the perception of the simplicity of using technology is the extent to which someone believes that using the system will facilitate the effort and convenience of using a new system

According to a study conducted by Kucukusta, Law, Besbes, & Legoharel (2015) states that indicators to measure perceived simplicity are easy to learn, less requirements of skill and training effort, being simple,

and easy to follow instructions. Amin et al. (2014) uses dimensions of easy to learn, professional in using is easy, and easy to use. Meanwhile, according to Liu (2014) using the dimensions of perceived simplicity, among others, clear and understandable, does not require a lot of mental effort, easy to use, and flexible.

Based on the results of previous studies, there are several studies examining the effect of perceived simplicity on IT adoption. Amin et al. (2014) Amin et al. (2014) in his research shows that there is a positive relationship between perceived simplicity and adoption of technology which ultimately affects the satisfaction of technology users (Kucukusta et al., 2015; Liu, 2014; Nasser Al-Suqri, 2014; Rouibah et al., 2016). Based on these results so that the hypothesis can be concluded as follows:

**H2:** The higher the level of simplicity in using new technology, the higher the rate of adoption of information technology.

### **Compatibility to IT Adoption**

Compatibility is defined as the extent to which innovation is considered consistent with existing sociocultural values and beliefs, past experience and adopter needs (Kaabachi, Mrad, & O'Leary, 2019). Compatibility has been shown as a direct predictor of behavioral intentions to adopt new technology, and as an antecedent of performance expectations and business expectations (Kuo & Yen, 2009). Customers can consider transactions using technology to be more compatible if they see the benefit of using their transactions to carry out certain activities Therefore compatibility reinforces performance expectations, business expectations, and intentions to adopt the use of technology. It also involves the extent to which new innovations are consistent with existing consumer influences, cognition and behavior (Ruyter, Wetzels, & Kleijnen, 2001). So, it can be concluded that compatibility is the extent to which innovation has consistency in accordance with the values and needs of adopters.

The dimensions of measurement in organizations are in accordance with studies conducted by Kaabachi et al. (2019) is a match with all aspects of the job, according to the needs of the organizational culture, suitable for work style, suitable for managing finances. Mansumittrchai & Chiu (2012) identified dimensions of compatibility including novelty, enabling easier transactions, compatible with lifestyle, providing convenience. While other dimensions are compatible with tasks related to a little effort, consistent with company values (Wang et al., 2017) consistent with lifestyle and compatible with current needs (Lai & Chang, 2011).

In the context of online banking, Wang, Cho, & Denton (2017) show a positive relationship between the compatibility felt by customers to online banking and the initial trust in online banking. This finding contradicts the study of Aljaafreh (2016)), who rejected the influence of perception of compatibility on the initial trust of internet-only banks. In addition, compatibility was found to be a significant factor that reduced the level of risk perception and increased customer confidence in 3G mobile banking services (Lee, Kozar, & Larsen, 2003). Lin, Lu, Wang, & Wei (2011) show the impact of perceived compatibility on initial trust in mobile brokerage services as well as the intention to adopt them. Perceived compatibility has been found to be positively related to the attitude and adoption of internet banking technology (Al-ajam & Nor, 2013; Mansumittrchai & Chiu, 2012). So based on the previous studies the following hypotheses can be formulated:

**H3:** The greater the suitability of a technology, the greater the interest in IT adoption. Performance Expectancy to IT Adoption

Rahi & Ghani (2019) defines performance expectations as the level at which an individual believes that using the system will help him to gain an advantage in job performance. Performance expectations in the context of internet banking usage is defined as the level at which a person believes that the use of internet banking will help him to benefit in carrying out banking tasks (Rahi et al., 2018). In addition, performance expectations are defined as an individual's understanding of the benefits of using technological innovations that produce better results (Ratten, 2015). Performance expectations refer to individual perceptions that IS

facilitates task completion (Morosan & Defranco, 2016). Strictly speaking, in a variety of task environments, performance expectations are found to influence the intention to use the IS system (Oliveira et al., 2016). So it can be concluded that performance expectations are the level where an individual believes that using a new system will help him to gain benefits in job performance, make it easier to carry out tasks and ultimately be able to provide better results.

Among the dimensions that can be used to measure performance expectations include useful to carry out the tasks, enable to conduct tasks more quickly, increase productivity, and improve performance to reach new consumers (Rahi & Ghani, 2019). Ratten (2015) revealed indicators of performance expectations including: enhance personal life and job efficiency; bring convenience to life, both on the job and outside the job; improve personal life and job performance. Other indicators to measure performance expectations include enhancing the effectiveness (purchasing products / services, making reservations); increase the efficiency; improve the quality of customer relationship; allow to access products / reservations faster; reduce operational costs; allow to make more accurate purchases / reservations; have better control; more secure (Morosan & Defranco, 2016).

Morosan & Defranco (2016) revealed that performance expectations have a significant influence on behavioral intentions to adopt online banking. Rahi & Ghani (2019) also revealed that performance expectations have a direct influence on users' intentions to adopt internet banking. Several other researchers have provided evidence of the significant influence of performance expectations on behavioral intentions to adopt internet banking (Foon & Fah, 2011; Martins et al., 2014; Oliveira et al., 2016). Therefore, the following hypothesis can be derived:

**H4:** The higher the level of expected performance of someone in the organization, the higher the intention to adopt technology.

## METHODOLOGY

### Participants and Procedures

Participants in this study are company leaders in small and medium industries (SMEs), which number 250 companies operating in Indonesia. The data search in this study used a questionnaire that described all the research variables that were arranged as well as possible to ensure respondents participated in the study. The sampling technique uses a non-random sampling technique with a purposive sampling method that is by selecting a group of subjects that are adjusted to certain criteria and based on the research objectives. As for the other criteria that become the reference for sampling in this study, SMEs who are respondents have a minimum of 10 employees, and use Information technology in their supply chain activities, for example in the procurement of raw materials, production processes, and delivery of products to consumers.

### Measurement

The indicator used to measure perceived simplicity consists of four indicators; flexibility, less requirements of skill and training effort, easy to learn, clear and understandable. Another related dimension is to find out how far the role of compatibility in technology adoption in this study uses four indicators, novelty, compatible with new systems and working procedures, according to the needs of the organization culture, and consistent with company values (Kaabachi et al., 2019; Lai & Chang, 2011; Mansumittrchai & Chiu, 2012; Wang et al., 2017). Referring to the results of the previous studies, there are five dimensions to measure how much influence the performance expectations have on the adoption of information technology, namely reducing operational costs; increase the efficiency; enhance the effectiveness; improve the quality of customer relationship; and improve performance to reach new consumers (Morosan & Defranco, 2016; Rahi & Ghani, 2019; Ratten, 2015). Whereas to measure Information Technology (IT) Adoption consists of five indicators, customer service; information culture; cost reduction; safety and security; and ease of use (Awa & Igwe, 2017; Ziemba, 2018; Eze et al., 2019). Sustainable Competitive Advantage (SCA) as the dependent variable consists of four indicators, relationship competency; strategic advantages; market share;

and cost minimization (Pratono et al., 2019; Zainol & Al Mamun, 2018). Participants were asked to rank all items with a 5-point Likert-type scale, ranking from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was divided into four sections with 22 questions: (a) descriptive company data, (b) perceived simplicity, (c) compatibility, (d) information technology adoption, (e) performance expectancy, and (f) sustainability competitive advantage

### Statistics Analysis

This study uses analytical methods in managing data and to test hypotheses with The Structural Equational Modeling (SEM) which is operated through the Partial Least Squares (PLS) program. Data analysis technique using SEM is done to explain thoroughly the relationship between variables in the study. Therefore, the main requirement to use SEM is to build a hypothesis model consisting of structural models and measurement models in the form of path charts based on theoretical justification. The empirical model design in accordance with the hypotheses that have been formulated in the literature review are as follows:

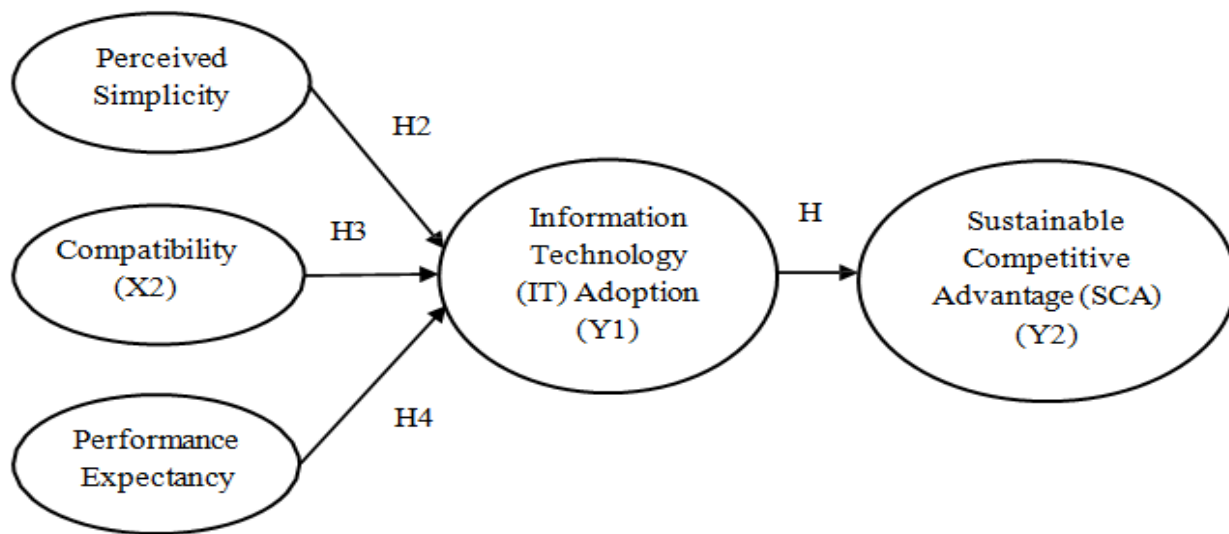


Figure 1. Research Model

Descriptive statistical analysis is used to provide an overview or describe the data used. The participants in this study included small and medium businesses engaged in food and beverage 39.6%), handicraft (31.2%), fashion (16.0%), retailers (6.0%), and service (7.2%).

Table 1. Sample Description

No	SMEs	Number of sample	%
1	Food and beverage	99	39.6
2	Handicraft	78	31.2
3	Fashion	40	16.0
4	Retailer	15	6.0
5	Services	18	7.2
Total		250	

### Convergence Validity

After the research data collected, the next is testing the measurement model. All indicators used to measure all latent variables in this study are reflective so to test the measurement model must meet the test of convergent validity and discriminant validity as well as the composite reliability test. The data processing tool for this test uses WarpPLS 5.0. Convergent validity test on the reflective indicator is done by looking at

the loading factor value for each construct indicator in the Combined loadings and cross-loadings output, then to test the Averaged Variance Extracted (AVE) can be seen in the latent variable coefficient output. Based on the rule of thumb, convergent validity is assessed by seeing the loading factor value must be greater than 0.7, but the value 0.4-0.7 is still acceptable. In addition, it is also seen from the value of Average Variance Extracted (AVE). The recommended AVE value must be greater than 0.5 which means that 50% or more variance of the indicator can be explained (Nunnally, C J., 1979). The loading factor values for all indicators used in the study are shown in table 2.

Table 2. Convergence Validity Test

Variabel	Items	Factor Loading	Composite reliability	Average variance extracted
Perceived Simplicity	PS1	0.710	0.889	0.668
	PS 2	0.835		
	PS 3	0.905		
	PS 4	0.809		
Compatibility	C1	0.895	0.938	0.790
	C2	0.900		
	C3	0.888		
	C4	0.871		
Performance Expectancy	PE1	0.803	0.935	0.744
	PE2	0.895		
	PE3	0.919		
	PE4	0.874		
	PE5	0.816		
Information Technology Adoption	TI1	0.783	0.860	0.560
	TI2	0.804		
	TI3	0.853		
	TI4	0.461		
	TI5	0.775		
Sustainable Competitive Advantage	SCA1	0.830	0.879	0.646
	SCA2	0.856		
	SCA3	0.729		
	SCA4	0.795		

Based on table 2 it can be seen that the value of the outer model or the correlation between constructs and variables has fulfilled convergent validity because all indicators have a loading factor value above 0.4. Therefore, it can be concluded that the indicators used in this study have met the convergent validity and can be used for further data processing. In addition, the overall convergent validity used on each construct variable can also be seen from the value of AVE. The required AVE value must be > 0.5. From the test results the AVE value can be concluded that all variables have met the requirements of convergent validity with a value of AVE > 0.50. (See Table 2)



### Discriminant Validity

Discriminant validity testing is done by looking at the value of the square root Average Variance Extracted (AVE) in the output correlation among latent variables. If the AVE square root value is higher than the correlation value between constructs, then it is stated that it meets the discriminant validity criteria (Nunnally, 1979). The results of AVE square root values on output correlations among latent variables are presented in Table 3:

Table 3. Descriptive statistics and correlations analysis

Construcs	Means	SD	(A)	(B)	(C)	(D)	(E)
(A) Perceived Simplicity	4.025	0.641	0.818**				
(B) Compatibility	3.914	0.796	0.673**	0.889**			
(C) Performance Expectancy	4.098	0.859	0.599**	0.603**	0.862**		
(D) IT adoption	3.671	0.867	0.565**	0.677**	0.639**	0.748**	
(E) Sustainable Competitive Advantage	4.040	0.656	0.623**	0.657**	0.564**	0.452**	0.804**

\*\*p < 0.01

From table 3, the diagonal value is the square root value AVE. In accordance with table 3, it appears that the AVE square value of all variables is higher than the correlation value with other variables. This shows that the model is valid and meets discriminant validity.

### Scale Reliability

Reliability test is done by looking at the value of Cronbach's alpha and composite reliability. Cronbach's alpha value or composite reliability must be > 0.7 said to have a good reliability value, but the value 0.6-0.7 is still acceptable for research that is explanatory (Nunnally, 1979). The results of testing the value of composite reliability are presented in table 2. From the results of testing the value of composite reliability shows that the composite reliability value of all constructs has a value > 0.6 so that it can be concluded that the model in this study has met the reliability requirements.

### Inner Model Test

Inner model testing is done to see the relationship between variables, significance values, and R-Squares or Adjusted R2 of the research model. The structural model is evaluated using R- Squares for endogenous variables. This study uses the value of Adjusted R2 and Q2 predictive relevance. R-Squares, Adjusted R2, and Q2 values of predictive relevance of endogenous variables in this research model are presented in table 4.

Tabel 4. Inner model test

Variabel Endogen	R-Squared	Adjusted R-Squared	Q-Squared
Information Technology Adoption (IT)	0.549	0.543	0.549
Sustainable Competitive Advantage (SCA)	0.216	0.213	0.220

### Hypotheses Testing

Testing the hypothesis regarding the relationship developed in this model, the magnitude of the p-value on the index range becomes the basis of the significance of the relationship between the exogenous and endogenous latent variables. This study uses a significance level of 5% because the type of data processed is primary data and is considered not to have high accuracy. The p-value is used to accept and reject the hypothesis, the significance level of p-value > 0.05, the hypothesis is not supported, while the p-value < 0.05, the hypothesis is supported at alpha 5%. The test results can be seen in Figure 2

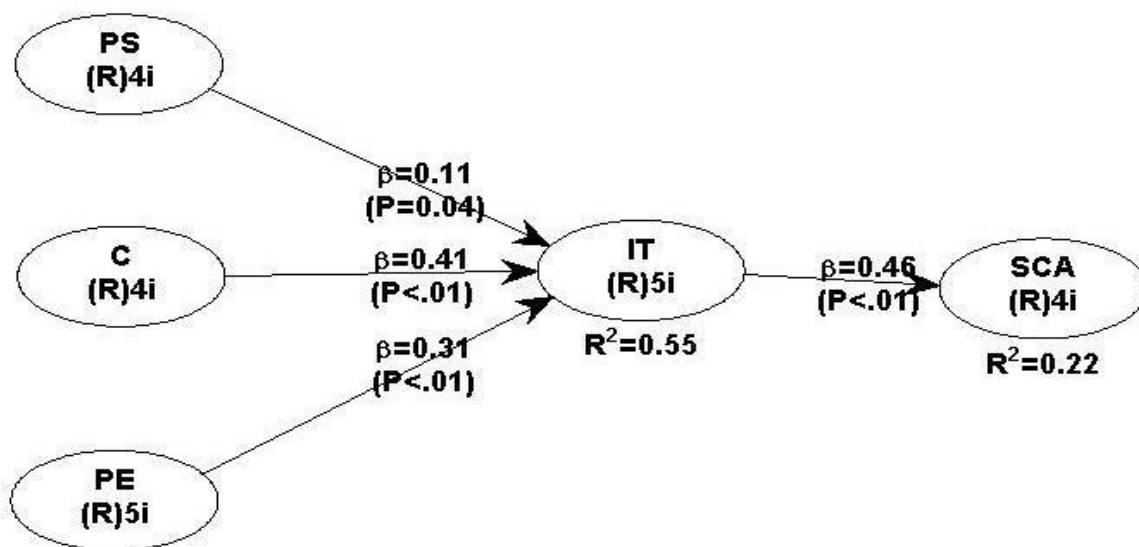


Figure 2. Empirical result of the structural model

The Path coefficients and P-values for hypotheses 1 through 4 of this study are seen in the WarpPLS 5.0 output Path coefficients and P-values in table 5.

Table 5. Summary of fundings

Hypothesis	Path coefficients	Results
H1: The higher the level of IT adoption, the higher the Sustainable Competitive Advantage (SCA)	0.465**	H <sub>1</sub> is supported
H2 : The higher the level of simplicity in using new technology, the higher the rate of adoption of information technology.	0,110*	H <sub>2</sub> is supported
H3 : The greater the suitability of a technology, the greater the interest in IT adoption.	0.410**	H <sub>3</sub> is supported
H4: The higher the level of performance expectations of a person in an organization, the higher the intention to adopt technology.	0.314**	H <sub>4</sub> is supported

\*\*p < 0.01, \*p < 0.05

The results of the Information Technology Adoption (IT) variable test against Sustainable Competitive Advantage (SCA) have a coefficient value of 0.465 and a p-value of 0.01 (p-value < 0.05). The results of the analysis are in accordance with the predictions that have been made, so it can be concluded that the first hypothesis (H1) is supported. The results of the Perceived Simplicity (PS) variable on Information Technology Adoption (IT) have a coefficient value of 0.110 and a p-value of 0.036 (p-value < 0.05). The results of the analysis are in accordance with the predictions that have been made, so it can be concluded that the second hypothesis (H2) is supported. The test results of the Compatibility (C) variable on Information Technology Adoption (IT) have a coefficient of 0.410 and a p-value of 0.01 (p-value < 0.05). The results of the analysis are in accordance with the predictions that have been made, so it can be concluded that the third hypothesis (H3) is supported. The results of the Performance Expectancy (PE) variable on Information Technology Adoption (IT) have a coefficient value of 0.314 and a p-value of < 0.01 (p-value < 0.05). The results of the analysis are in accordance with the predictions that have been made, so it can be concluded that the fourth hypothesis (H4) is supported.

## DISCUSSION

SMEs require faster digital transformation. This is because of the industrial revolution that requires SMEs to always adapt to the needs of the digital age. To meet the needs of the speed of this digital transformation, certain leader characteristics are needed. In this last year, the company has emerged to develop the concept

of sustainable development and green business growth, so the protection of the sustainability of competitive advantage is a subject for global concern. The concept of sustainability of competitive advantage associated with information technology began in 2003 when the European Union was rumored to care about the environment (Chen, 2008). Sustainable development is a contentious issue throughout the world and increasing pressure on companies to adopt sustainable competitive advantage practices. Among the most well-known are the adoption of information technology practices, because most companies use some form of information technology to carry out daily transactions. This phenomenon is supported by the findings of Ainin et al., (2016) which states a positive relationship between practices and organizational performance

The findings of this study support the proposed hypothesis (Hypothesis 1) there is a positive relationship between information technology adoption and sustainable competitive advantage. This finding is consistent with the results of previous studies (Ziemba, 2018; Awa et al., 2017; Eze et al., 2019). The data implies that IT adoption has a positive influence on Sustainable Competitive Advantage (SCA). This means that the more companies adopt information technology practices at each stage of the company's operational activities, it will be able to increase sustainable competitive advantage. Adoption of information technology is focused on services to consumers, the formation of information culture, efforts to reduce production costs, security for company activities and also the ease of use of various equipment in the company. Meanwhile sustainable competitive advantage generated in the form of company competence in dealing with suppliers and consumers, can increase market share, and of course reduce production costs. In detail, this finding is very reasonable because the adoption of information technology is an obligatory condition for companies to win competition, especially sustainable competition.

The results also support Hypothesis 2 proposed, there is a positive relationship between perceived simplicity and adoption of information technology. The results of this study support previous research (Kucukusta et al., 2015; Rouibah et al., 2016). This finding is consistent with previous findings (Robert, 1997; Daw, et al, 2011). However, this finding contradicts the results of the study (Grover, 1993), which found a negative relationship between perceived simplicity and IT adoption. The perception of the simplicity of using technology is the extent to which a person believes that using a system will facilitate the effort and convenience of using a new system. The technology applied in small and medium industries in particular must have flexibility in its application. Flexibility is closely related to determining production volume, product design flexibility, and product delivery flexibility. Simplicity in the use of information technology must also be supported by minimal skills and training needs.

The results support Hypothesis 3, which states a positive relationship between compatibility with the adoption of information technology. Compatibility shows the extent to which innovation is considered consistent with existing socio-cultural values and beliefs, past experiences and the needs of adopters (Kaabachi et al., 2019). Compatibility in its application requires newness in technology by adjusting to the needs of the company. In addition, information technology must adapt to new systems and work procedures implemented in the company. The application of information technology is highly dependent on the company culture and organizational culture needs, and is consistent with the values adopted by the company.

The results also support Hypothesis 4, which states that there is a positive relationship between performance expectancy and information technology adoption. The results of this study support the results of previous studies (Foon & Fah, 2011; Martins et al., 2014; Morosan & Defranco, 2016; Oliveira et al., 2016; Rahi & Ghani 2019(Foon & Fah, 2011; Martins et al., 2014; Oliveira et al., 2016). Expectations of performance are the level at which an individual or organization believes that using a new system will help it to gain benefits at work, make it easier to carry out tasks and ultimately be able to provide better results The results show that the level of adoption of information technology can be developed through the existence of an expectation to be able to reduce operational costs, hopes to increase efficiency, hopes to achieve effectiveness, hopes to improve the quality of relationships with consumers, and improve performance to get new customers.

## CONCLUSION AND IMPLICATION

Competitive advantage has recently attracted more attention among researchers and business practitioners. Beyond focusing on sustainable competitive advantage from business activities, enterprises also need to adopt information technology. Furthermore, this study also examines factors related to the adoption of information technology, including: perceived simplicity, compatibility, and performance expectancy. The use of technology can significantly help businesses in improving services to consumers, the formation of information culture, efforts to reduce production costs, security for company activities and also the ease of use of various equipment within the company. This study developed a framework for evaluating the factors that influence sustainable competitive advantage through the adoption of information technology, and testing the model in the context of SMEs in Indonesia. The model is presented to test the relationship between perceived simplicity, compatibility, and performance expectancy on adoption of information technology. In addition, this study examines the relationship between adoption of information technology and sustainable competitive advantage. Adoption of information technology in SMEs requires various requirements to be able to create sustainable competitive advantage. The application of information technology should refer to efforts to further improve services to consumers. The use of information technology must also be able to support the reduction in production costs. Information technology opinion considers the level of security for the company and the importance of ease of use. Previous researchers found that the size of the enterprise is of importance in IT adoption, since the accumulation rate and the strength of IT capital vary, along with concerning environmental issues, which altogether makes IT adoption even more complicated (Molla, Abareshi, & Cooper, 2014).

### Theoretical Implication

Our findings confirm that the adoption rate of information technology has a significant positive impact on sustainable competitive advantage. Other results show that perceived simplicity, compatibility and performance expectancy have a significant influence on the adoption of information technology. This finding indicates that as SMEs increasingly increase adoption of information technology, this will contribute to an increasingly higher contribution to sustainable competitive advantage. Meanwhile, the level of adoption of information technology is determined by several factors, including perceived simplicity, compatibility, and performance expectancy. In addition, the findings of this study demonstrate that SMEs in Indonesia can improve the level of sustainable competitive advantage through the adoption of information technology in managing its operational activities. Therefore, the findings encourage the achievement of sustainable competitive advantage in business planning, they need a commitment to implement the adoption of information technology. In the meantime, the company will embed the concept of sustainable competitive advantage into the culture of the organization by aligning the use of information technology in every operational activity of the company.

### Practical Implications

The manufacturing industry especially on small medium enterprises (SMEs) in Indonesia plays an important role in the process of sustainable competitive advantage and makes an enormous contribution to economic growth. With the emerging issues of sustainable competitive advantage, information technology adoption has been regarded as a sustainable competitive advantage strategy, hence an enterprise has to place an emphasis on how to gain sustainable competitive advantage benefits in various challenges. According to our research findings, SMEs which attach more importance to the degree of adoption of information technology will attain a greater sustainable competitive advantage. Achievement of adoption of information technology must be developed through perceived simplicity, compatibility, and performance expectancy. In implementing the adoption of information technology it is necessary to pay more attention to three variables (perceived simplicity, compatibility, and performance expectancy). Meanwhile, the adoption of appropriate information technology will ultimately be able to increase sustainable competitive advantage. This means that SMEs in Indonesia place the importance of adopting information technology as an important stage. Adoption of information technology can be done through the application of technology that can reduce

operational costs; increase the efficiency; enhance the effectiveness; improve the quality of customer relationship; and improve performance to reach new consumers. According to him, in addition to increasing sustainable competitive advantage, SMEs in Indonesia need to apply the principle of flexibility in its application. The flexibility of the application of information technology is done by taking into account the condition of SMEs on the side of corporate culture, the need for appropriate technology, the simplicity of the technology used, and the impact of technology for increasing sustainable competitive advantage.

## LIMITATION AND FUTURE RESEARCH

A number of limitations of this research open avenues for future studies. First, given the fact that this study has been carried out in Indonesia, caution must be exercised when generalizing the findings to other social, economic and cultural contexts. Future studies in other countries would investigate whether the model utilized in this study was applicable in other environments. Second, given the cross-sectional nature of research design, this study focuses on the simultaneous effects of the independent variables on the dependent variable. Future studies could take a longitudinal approach to reveal the interactive operation of the independent variables over time. Third, this study measured sustainable competitive advantage and adoption of information technology using subjective measures. This was due to the difficulty of obtaining the relevant, accurate data from the companies. It is recommended that the potential impact of perceived simplicity, compatibility, and performance expectancy on adoption of IT practices and adoption of IT practices on sustainable competitive advantage researchers should use some quantifiable measures and compare their findings with the outcomes of this research. The study is limited by its scope of data collection and phases; therefore, extended data are needed to apply the findings to other sectors / industries / countries. Lastly, this study was conducted by investigating a large number of IT practices adoption at SMEs. Future research could focus on medium industries.

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