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Determinants of the influence for information technology on SMEs in Medan city

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ABSTRACT

Small and medium enterprises (hereinafter shortened to SMEs) encourage economic development by creating jobs. Based on data from the Bureau of Statistics (BPS), medium-scale businesses (0.14% of total businesses) with a capital value of between 1 billion and IDR 50 billion are only able to absorb 10.83% of the workforce. Medium-sized businesses are under great pressure to achieve competitive advantage and improve operational and logistics performance. At the same time, SMEs are required to submit to demand uncertainty and market volatility so as to survive in this market. Information technology support allows management to make business decisions quickly and accurately. The main problem for SMEs in the technology adoption process is that IT adoption by medium-sized businesses in Indonesia is still very low. SMEs have not adopted much IT because the need for IT in their business processes has not yet emerged and they lack financial support for this. In Indonesia, some SMEs run their businesses using traditional methods. Even though currently companies compete through sophisticated technology and IT to be able to win the competition.

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1. INTRODUCTION

Small and medium enterprises (hereinafter shortened to SMEs) encourage economic development by creating jobs. Based on data from the Bureau of Statistics (BPS), medium-scale businesses (0.14 % of total businesses) with a capital value of between 1 billion and IDR 50 billion are only able to absorb 10.83% of the workforce. Medium-sized businesses are under great pressure to achieve competitive advantage and improve operational and logistics performance. At the same time, SMEs are required to submit to demand uncertainty and market volatility so as to survive in this market. To overcome the problem of demand uncertainty and market volatility, companies need to adopt information technology (IT) to support organizational performance functions and increase efficiency by carrying out closer cooperation in relations with all operational management (Toman Sony Tambunan, 2021c).

Information technology support allows management to make business decisions quickly and precisely (Toman Sony Tambunan, 2021c). Advances in information and communication technology, including electronic data interchange (EDI), and the internet have become important tools in handling complex relationships between suppliers and buyers (Jogiyanto, 2007). The complexity of supply chain management forces companies to use online communication systems. Given the important role of information in supporting supply chain performance, managers must understand how information is collected and analyzed (Jan et al., 2012), (Jayasree et al., 2015), (Toman Sony Tambunan, 2023), (Jan et al., 2012)

The main problem for SMEs in the technology adoption process is that IT adoption by medium-sized businesses in Indonesia is still very low. SMEs have not adopted much IT because the need for IT in their business processes has not yet emerged and they lack financial support for this (Toman Sony Tambunan, 2021a). In Indonesia, some SMEs run their businesses using traditional methods (Toman Sony Tambunan, 2021b). Even though currently companies compete through sophisticated technology and IT to be able to win the competition (Foote & Halawi, 2018), (Khristianto, 2012), (Khubiyati & Arifin, 2016). Because IT also plays an important role in making quality economic decisions (Al-Shboul, 2018), (Bank Indonesia & LPPI, 2015), (Chairoel & Riski, 2018). The inability of SMEs to use technology is interesting to research. Several studies have discussed the acceptance of information technology in SMEs and companies both abroad and domestically. The results of previous research show consistent variables, including Perceived Benefits from research by (Kurnia et al., 2015), (Awa, Ojiabo, et al., 2015),and (Hardum, 2018), (Barnes & Matthew Hinton, 2012), (Bharati, 2010). Perceived Ease from research by (Awa, Awara, et al., 2015) and (Awa et al., 2017). Financial capacity from research by (Awa, Awara, et al., 2015), (Chatzoglou & Chatzoudes, 2016). HR capacity from research by (Adebambo & Toyin, 2011), (Al-Shboul, 2018) and (Awa, Awara, et al., 2015), (Darono et al., 2013). Company Size from research by (Awa, Awara, et al., 2015),(Al Sharji et al., 2017) and Individual context from research by (Awa et al., 2017), (Al-Shboul, 2018), (Awa, Ojiabo, et al., 2015) prove Social influence and hedonistic impulses have a significant effect on technology adoption**.**

2. RESEARCH METHOD

This research uses a quantitative approach. The research design used is population and sample, with the data collection technique for this research being primary data where the data is obtained directly from the research object and is directly related to the problem being studied. The way to collect data uses a questionnaire by distributing questionnaires to respondents where the questions are first provided by the researcher. The research location was carried out in the Medan area with the target respondents being food and beverage MSMEs. With descriptive data analysis techniques which use statistical methods, using Partial Least Square (PLS) analysis, and operational hypotheses (Ghozali & Latan, 2012).

3. RESULTS AND DISCUSSIONS

Result

Validity test on variables with validity test using convergent validity. Deep convergent validity testing study This use mark AVE. Mark AVE (Average Variance Extraed) it must be greater than 0.50 to be said to be sufficient (Ghozali and Latan, 2012).

Table 1. Average variance extraed

Variable	Indicator	Factor Loading	AVE
Attitude	SKP1	0.788	0.584
	SKP2	0.771	
	SKP3	0.713	
	SKP4	0.691	
	SKP5	0.824	
	SKP6	0.768	
	SKP7	0.784	
Subjective norms	NS1	0.718	0.627
	NS2	0.865	
	NS3	0.785	
Perceived hehavioral control	PK1	0.879	0.668
	PK2	0.705	
	PK3	0.857	
Mimetic pressure	MIM1	0.895	0.682
	MIM2	0.844	
	MIM3	0.757	
	MIM4	0.801	
Normative pressure	NOR1	0.909	0.7
	NOR2	0.847	
	NOR3	0.763	
	NOR4	0.821	
Coercive pressure	KOER1	0.866	0.683
	KOER2	0.903	
	KOER3	0.892	
	KOER4	0.827	
	KOER5	0.607	
Intention	NP1	0.937	0.891
	NP2	0.951	
Use information technology	PTI1	0.911	0.866
	PTI2	0.946	
	PTI3	0.936	

Based on the results of the AVE loading value, it can be concluded that convergent validity is met. This means that the existence of correlations between different instruments are all quite valid.

Reliability is a measurement showing the extent to which the measurement is without bias and guarantees consistent measurement across time and across various items in the instrument (Sekaran, 2006). Reliability testing is carried out to determine the level of stability of a measuring instrument. In this research, reliability testing was carried out with use approach *composite reliability* with using the output produced by PLS. The accepted limit value for the composite reliability level (ρc) is ≥ 0.7.

Table 2. Composite Reliability and Cronbach Alpha

	Composite Reliability	Cronbach's Alpha
Coercive	0.914	0.878
Mimetic	0.895	0.860
Intended Use	0.942	0.878
Subjective Norms	0.834	0.699
Normative	0.903	0.859
Use of technology information	0.951	0.923
Perception of control	0.857	0.762
Attitude	0.907	0.883

Based on the table above, Composite Reability shows a satisfactory value, namely the value of each variable is above the minimum value, namely 0.70.

Based on this value, it shows that the consistency and stability of the instrument used is very high. In other words, it can be concluded that the reliability of the instrument is met.

Inner model testing was carried out to see the relationship between the constructs and their significance values as well as the *R-square value*. The *R-square* value is used to assess the influence of the independent variable on the dependent variable whether it has a substantive influence.

Table 3. R-Square Test Results

Construct	*R* Square (R^2)
Use of technology	0.598
Intent of use	0.298

The model provides an *R-square value* of 0.598 for the technology use variable information Which means that variable use technology information can be explained by the intention to use variable of 0.598. The *r-square* value of the usage intention variable is 0.298, which means that the usage intention variable can be explained by the variables attitude, subjective norms, perceived behavioral control, mimetic pressure, coerciveness and normative.

Table 4. Significance of Relationships Between Variables

	Original Sample (O)	Samples Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
Attitude -> Intention to use	0.190	0.188	0.088	0.088	2,152
Subjective norms -> Intention to use	0.177	0.163	0.086	0.086	2,054
Perceived control -> Use intention	0.165	0.159	0.072	0.072	2,305
Coercive -> Intention to use	0.324	0.317	0.102	0.102	3,164
Normative -> Intention of use	0.217	0.202	0.088	0.088	2,476
Mimetic -> Intention to use	-0.204	-0.169	0.099	0.099	2,061
Intention to use -> Use of information technology	0.546	0.532	0.120	0.120	4,558

Discussion

Attitude has a positive influence on behavioral intentions to use technology.

From the table above, the parameter of the relationship between attitude and behavioral intention to use technology is 0.190 and the T-statistic value as big as 2,152. On level significance 5% connection between *attitude* to intention use significant Because mark T-Statistics > t-table (2,152 > 1 .98), So it can be interpreted that attitude has a significant positive influence on behavioral intentions to use technology, so that is the first hypothesis of this research supported (Kurnia et al., 2015), (Jayasree et al., 2015).

Subjective norms have a positive influence on behavioral intentions to use technology.

From the table above, the parameter of the relationship between subjective norms and behavioral intention to use technology is 0.177 and the T-statistic value is 2.054. At a significance level of 5%, the relationship between subjective norms and intention to use is significant because the T-Statistic value > t-table (2.054 > 1.98), so it can be interpreted that subjective norms have a significant positive effect on behavioral intentions to use technology so that the second hypothesis of this research is supported (Jayasree et al., 2015), (Chatzoglou & Chatzoudes, 2016).

Perceived behavioral control has a positive influence on behavioral intentions to use technology.

From the table above, the parameter of the relationship between perceived behavioral control and behavioral intention to use technology is 0.165 and the T-statistic value is 2.305. At a significance level of 5%, the relationship between perceived behavioral control and intention to use is significant because the T-Statistic value > t-table (2.305 > 1.98), so it can be interpreted that perceived behavioral control has a significant positive effect on behavioral intention to use technology so that the third hypothesis of this research is supported (Barnes & Matthew Hinton, 2012), (Bank Indonesia & LPPI, 2015), (Darono et al., 2013).

Coercive pressure has a positive effect on behavioral intentions to use technology.

From the table above, the parameter of the relationship between planned coercive pressure and the behavioral intention to use technology is 0.324 and the T-statistic value is 3.165. At a significance level of 5%, the relationship between coercive pressure and intention to use is significant because the T-Statistic value > t-table (3.165 > 1.98), so it can be interpreted that coercive pressure has a significant positive effect on the behavioral intention to use technology so that the fourth hypothesis of this research is supported (Barnes & Matthew Hinton, 2012), (Al-Shboul, 2018), (Al Sharji et al., 2017).

Planned normative pressure has a positive influence on behavioral intentions to use technology.

From the table above, the parameter of the relationship between normative pressure and behavioral intention to use technology is 0.217 and the T-statistic value is 2.476. At a significance level of 5%, the relationship between normative pressure and intention to use is significant because the T-statistic value > t-table (2.476 > 1.98), so it can be interpreted that normative pressure has a significant positive effect on behavioral intentions to use technology so that the fifth hypothesis of this research is supported (Chatzoglou & Chatzoudes, 2016), (Chairoel & Riski, 2018), (Bharati, 2010).

Mimetic pressure negatively influences behavioral intentions to use technology.

From the table above, the parameter of the relationship between mimetic pressure and the behavioral intention to use technology is -0.204 and the T-statistic value is 2.061. At a significance level of 5%, the relationship between normative pressure and intention to use is significant because the T-Statistic value > t-table (2.061 > 1.98), so it can be interpreted that mimetic pressure has a significant negative effect on the behavioral intention to use technology so that the sixth hypothesis of this study is not supported.

Behavioral intentions to use technology have a positive influence on technology use.

From the table above, the parameter of the relationship between behavioral intention to use technology and technology use is 0.564 and the T-statistic value is 4.558. At a significance level of 5%, the relationship between behavioral intentions to use technology and usage is significant because the T-Statistic t-table value is (4.558 > 1.98), so it can be interpreted that behavioral intentions to use technology have a significant negative effect on technology use so that the seventh hypothesis of this research is supported (Jayasree et al., 2015), (Foote & Halawi, 2018) .

4. CONCLUSION

Based on the inner model testing carried out to see the relationship between the construct and its significance value, as well as the R-square value, it can be concluded that first, attitude has a positive influence on behavioral intentions to use technology. Second, subjective norms have a positive influence on behavioral intentions to use technology.

Third, perceived behavioral control has a positive influence on behavioral intentions to use technology. Fourth, coercive pressure has a positive effect on behavioral intentions to use technology. Fifth, planned normative pressure has a positive effect on behavioral intentions to use technology. Sixth, mimetic pressure negatively influences behavioral intentions to use technology. Seventh, behavioral intentions to use technology have a positive effect on technology use. For further research, it is necessary to examine other variables that can influence technology use behavior, thereby adding strong support regarding the use of technology for MSMEs in supporting the implementation of activities and business development.

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