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The importance of E-commerce adoption and entrepreneurship orientation for sustainable micro, small, and medium enterprises in Indonesia

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ABSTRACT

This study aims to examine the importance of e-commerce adoption and entrepreneurial orientation in Micro, Small, and Medium Enterprises (MSME)'s performance. A purposive sampling procedure was employed to recruit 150 MSME's entrepreneurs from three districts of Jambi province, Indonesia. The findings show that e-commerce adoption significantly affects the sustainability of MSME business performance, while entrepreneurship orientation moderates these two variables. The findings could be used to identify and map customers' preferences of e-commerce adoption and entrepreneurship orientation in order to improve MSME's performance. Furthermore, these findings could be a source of information for the government in formulating policy concerning the MSME.

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Sustainable MSME business performance; E-commerce adoption; entrepreneurship orientation

1. Introduction

There is a continuous rise in economic globalization which may cause an increase in competition among MSMEs both in the national and international level (Etemad 2004; Julien and Ramangalahy 2003; Lu and Beamish 2001; Matlay and Martin 2009). Therefore, in order to compensate its resources, to measure any possible losses, and to stay competitive, the enterprise must utilize special tools and strategies (Kleindl 2000; Raymond, Bergeron, and Blili 2005). The strategies include using e-commerce, utilizing fast-growing and effective devices for businesses, expanding its coverage, surpassing the competition, and minimizing operational costs (Beck, Wigand, and Ko 2001; Martin and Matlay 2003). Regarding the use of internet business (e-commerce), it is found that there are significant differences between MSMEs and large, well-established companies (Fomin et al. 2005).

Nowadays, internet access is continuously becoming cheaper and globally more available. In Indonesia, 17% increasing number of internet users was reported between January 2019 and January 2020 (We are social, 2020). The report shows a number of countries have used the internet for exploration, information, communication, entertainment, as well as a means of online business.

In the past, commercial activities were purely conventional. However, the internet's advent has brought

online growth for these enterprises as various business transactions previously conducted face-to-face, are now easily carried out without physical contact, due to electronic commerce (e-commerce).

Nearly 93% of internet users in Indonesia are searching for products online, 90% visiting online retail stores, and 88% of them making an online purchase (We are Social, 2020). These statistic data suggest the MSME to adopt e-commerce to reach more customers.

Jambi Small Business Agency (2020) reported that Jambi province has 86,039 micro, small or medium enterprises. They are categorized based on the amount of capital and assets they have (Micro size-0–50 million Rupiah, Small size-50–500 million Rupiah, and Medium size –0.5–10 billion rupiah). Preliminary research has showed that only 40 out of 86,039 businesses in Jambi actively uses online commercial transactions.

2. Literature review

2.1. E-commerce adoption

According to Kalakota and Whinston 1997 from the B2C (Business to Consumer) perspective, e-commerce constitutes buying, selling, or advertising information, products, and services through computer networks. Currently, most available literature related to this technology's adoption in MSMEs focuses on factors affecting acceptance (Fomin et al. 2005; Riemenschneider,

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Harrison, and Mykytyn 2003). Numerous studies on e-commerce implementation have also reported several significant both internal and external influential circumstances (Grandon 2004; Saffu, Walker, and Hinson 2008; Sutanonpaiboon and Pearson 2008). These include the willingness to accept external pressures and perceived usage simplicity (Grandon 2004). Meanwhile, Raymond, Bergeron, and Blili (2005), stated that e-commerce acts as information dissemination, business intelligence, as well as transactional and collaborative functions.

E-commerce acceptance in MSMEs increases efficiency in internal business processes and product supply chain (Johnston and Wright 2004; Kim, Ow, and Jun 2008). However, two major challenges these enterprises face are the size and lack of resources, compared to larger counterparts. Therefore, internet business could help to identify and develop a broader customer base as well as to surpass global competition (Etemad 2004; Loane 2005) by increasing global visibility, attracting new clients from different geographical locations (Kamlesh and Shah 2001; Martin and Matlay 2003), serving current ones more efficiently as interaction is now possible at any time or place (Beck, Wigand, and Ko 2001; Johnston and Wright 2004). Also, present and prospective customers' needs are better understood and met by internet business (Auger 2005).

In addition, e-commerce critical success factors cover value addition, niche focus, expansion, flexible maintenance as well as geographical segmentation, high-quality service, connectivity creation, and internet culture knowledge (Purcell, Toland, and Huff 2004). Furthermore, Rodríguez Del Bosque and Herrero Crespo (2008), studied internal and external organizational factors with possible impact on SME wireless networking and identified methods to enable self-efficiency through technologies related to marketing and perceived competition. According to Dholakia and Kshetri (2004), internet business is accepted due to its usefulness to customers as well as entrepreneurs. These benefits include price advantage, variety and value of the product, customer's convenience as well as access to information.

The technology's adoption improves performance in these enterprises by providing enhanced streamlined management. A number of studies disclosed e-commerce significantly reduces transaction costs (Chan and Lee 2003; Lohrke, Franklin, and Frownfelter-Lohrke 2006; Santarelli and D'Altri 2003; Turner 2000).

2.2. Entrepreneurship orientation

Entrepreneurship orientation was coined by Miller in 1983, revised by Zahra and Covin (1995), and now

refers to innovation, proactivity and taking risks in business management (Zahra and Covin 1995), as well as identifying and exploiting new opportunities in the macro entrepreneurship environment (Scott and Venkataraman 2000). According to Miles and Arnold (1991), the term of entrepreneurship orientation may be similar to market orientation but they are different in some ways. Entrepreneurial orientation is largely driven by markets that have not taken advantage of opportunities, while the other is emphasized on customers and competitor intelligence.

Entrepreneurial innovation refers to creativity and experimentation while presenting new products, services, and carrying out research (Lumpkin and Dess 2001; Lumpkin and Dess 1996). Risk-taking in entrepreneurship is generally related to the willingness to take calculated business chances (Brockhaus 1980; Kreiser, Marino, and Weaver 2002).

A proactive entrepreneur actively searches for new opportunities, techniques, products, or services to outdo competition and anticipates future changes in the business environment (Lumpkin and Dess 2001). This description is validated by several cross-sectional, longitudinal, and cross-country studies across the globe (Kreiser, Marino, and Weaver 2002).

According to (Khandwalla 1977), entrepreneurial corporate business owners proactively seek new opportunities, and therefore, tend to take more risks than the less-innovative counterparts and have a higher emphasis on new product innovation (Friesen and Miller 1982). Previous research reported entrepreneur orientation strongly influences SME performance (Lumpkin and Dess 2001; Wiklund and Shepherd 2005; Zahra and Covin 1995).

Based on the previous research, entrepreneurship orientation varies directly with e-commerce adoption and business performance. In addition, MSMEs owners tend to investigate new processes and technology while creating and distributing products, services, or information (Avlonitis and Salavou 2007; Lumpkin and Dess 1996). Meanwhile, less innovative establishments are advised to utilize this technology to achieve higher operational efficiency and marketing capability (Matlay and Addis 2003).

2.3. Business performance

Business performance is the output of entrepreneurial activities as stated by Wheelen and Hunger (2014), this entity is estimated by trades, market stocks, and financial gain. Also, it refers to the output derived from the implementation of all operations concerning business activities, and the indicators are advancements in sales and productivity (Best 2009). Hubbard and

Beamish (2011) revealed these markers were visible from the marketing aspects, as well as through the company's financial accomplishments. The estimation of business performance through promotion outcomes was quantifiable by trades, commercial expansion, and shares. Also, economic achievements were determined by several methods including return on investment (ROI), revenue mix, asset utilization (measured by asset turnover), and significant cost depletion.

The assessment of organizational units and the achievement of company goals influence the techniques employed in performance evaluation. Several procedures including ROI, Return on Equity (ROE), Earning per Share (EPS), along with Economic Value Added (EVA), are suitable in the appraisal of a company or division's capability to accomplish profitability targets.

However, the estimation of other objectives including corporate social responsibilities and employee development are a few areas where these techniques exhibit inadequacies. In summary, the evaluation of financial, personnel, business, and organizational operations are useful in the measurement of the efficiency and efficacy of business performance.

This study used a balance scorecard approach to analyze MSME organizational productivity, as the initiation and promotion of corporate strategy throughout the establishment are inclusive in this technique. The estimation of sectional success was appraised from four angles (Kaplan and Norton 1996) comprising the economic, consumer, core procedures, along with the educative and developmental perspectives. Appropriate results were produced by this method and further influenced by the distinctive resource capability similar to the research findings acquired by Yacob et al. (2020).

Based on previous research, an empirical study needs to be carried out to measure e-commerce adoption and entrepreneurial orientation's influence on MSMEs in the Indonesian context to understand factors affecting the sustainable MSME and its benefits.

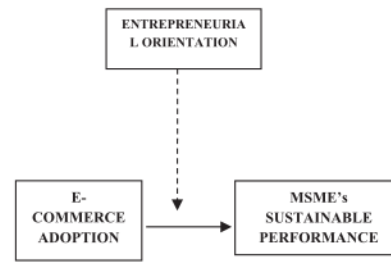
2.4. Conceptual framework

The procedures of this study was begun with an analysis of the E-commerce adoption variable and the entrepreneurial orientation's effects on MSME's Sustainable performance context. It explains the factors (significantly and moderately) affecting MSME performance.

The procedure was presented in Figure 1.

2.5. Research hypothesis

The hypothesis was formulated with regard to the narrative appraisal and current study prototypes as follows:



Research Model

Figure 1. Research model. Remarks: —→: direct effect; - - - - -→: Moderating effect.

H0: E-Commerce Adoption will not impact on MSME's Sustainable Performance.

H1: E-Commerce Adoption will impact on MSME's Sustainable Performance.

H0: Entrepreneurial Orientation will not have a moderating impact on MSME's Sustainable Performance.

H2: Entrepreneurial Orientation will have a moderating effect on MSME'S Sustainable Performance.

3. Research method

In this section, data collection and analysis techniques were presented in detail.

3.1. Research setting

This study was conducted in three districts; X, Y, and Z in Jambi Province, Indonesia. The owners of MSMEs' participated in the study were from different representative areas; urban, sub-urban, and remote areas.

3.2. Research design

The study employed a survey through a questionnaire with purposive sampling procedure to recruit the MSME respondents of the study for quantitative data. Meanwhile, the qualitative data were collected by interviewing a number of stakeholders including MSME owners, Local government officers, suppliers, as well as, the customers.

3.3. Population

The population was depicted as all individuals of the considered community, as well as any well-defined category of individuals, occasions, or things that are apportioned and generalized. The population target

for this study comprised of MSMEs' owners in different locations in Jambi Province including 500 MSME listed in the Jambi Chapter Association of MSMEs.

3.4. Sample and sampling techniques

In choosing the research sample, the researchers nominated three districts in Jambi Province where 50 entrepreneur respondents were chosen for each district. The study focused primarily on certain statistics characteristics of investigated population such as gender; Age; Level of Education; Business Field; Transaction per month; Business Experience; and E-Commerce Stage in its business operation. Table 1 describes details for the research sample chosen.

Table 1. Demographic profile.

Profile	Attributes	n	Percentage (%)
Gender	Male	86	57%
	Female	64	43%
	Total	150	100
Age	17–20 Years	6	4%
	21–30 Years	47	31%
	31–40 Years	55	37%
	>40 Years	42	28%
	Total	150	100
Education	Elementary School	0	0%
	Junior Secondary School	0	0%
	Senior High School	48	32%
	Diploma's Degree	34	23%
	Bachelor's Degree	61	41%
	Master's Degree	7	5%
	Total	150	100
Business field	Trade, Hotel and Restaurant	71	47%
	Private Services	11	7%
	Financial Service, Rent, and Company Service	8	5%
	Transportation and Communication	25	17%
	Building	5	3%
	Agriculture, Veterinarian, Forest, and Fisheries	24	16%
	Mining and Exploring	0	0%
	Manufacturing Industry	4	3%
	Electricity, Gas, and pure water	2	1%
	Total	150	100
Transaction per month	<10.000.000	15	10%
	11.000.000–20.000.000	11	7%
	21.000.000–30.000.000	21	14%
	31.000.000–40.000.000	37	25%
	41.000.000–50.000.000	35	23%
	>50.000.000	31	21%
Business experience	Total	150	100
	1–3 Years	45	30%
	4–6 Years	54	36%
	7–10 Years	39	26%
	More than 10 Years	12	8%
	Total	150	100
E-Commerce platform in its business operation	Own website	18	12%
	Facebook	54	36%
	Instagram	41	27%
	Line	9	6%
	Twitter	22	15%
	Others	6	4%
	Total	150	100

3.5. The research variable

The variables in this study were e-commerce adoption, entrepreneurial orientation, and sustainable MSME business performance. It was at first conceived that the only dependent variable in the study was sustainable MSME business performance and the independent variable was e-commerce adoption, and entrepreneur orientation was a moderating variable.

A four-section questionnaire was used for the collection of data in this study. Section A consists of questions on the demographic characteristics of the respondents, section B covers questions for e-commerce adoption, section C includes questions for entrepreneur orientation, and section D are the questions for sustainable MSME business performance. The items in the B, C, and D sections were based on previous authentic research related to the current area of interest. A 5-point Likert-type scale, ranging from strongly disagree (1) to strongly agree (5), was used for measurement of the data.

3.6. Method of data collection

A validated survey was utilized to gather information from the respondents. The survey was used because it can reach a big number of respondents in a time. The submission of the questionnaire was the source of the individual data (MSME owners), while the information from Interview groups was obtained from the interview with selected participants.

Quantitative data analysis was done by executing path analysis with the application of the Smart PLS version 3.0 where the varying parameters were the sustainable MSME Business Performance (Z), while the e-commerce adoption (X), and the moderating variable entrepreneurial orientation (Y) was the objective factors. While for qualitative data analysis, the researchers utilized thematic analysis to generate related themes from the interview.

3.7. Pilot project

A pilot project involving 30 respondents was carried out. The respondents of the pilot project were not included in the real survey. The researchers conducted the pilot project to make sure that all items in the survey instrument are valid and reliable. A Smart PLS, specifically Cronbach's Alpha and AVE values were used to properly code the data yielded from the questionnaires and to calculate a reliability and validity score for each of the constructs. Following is a detailed summary of the reliability coefficients (*r*) for each of the sections:

E-commerce adoption, $r = 0.815$; Entrepreneurial orientation, $r = 0.914$ and Sustainable MSME business performance, $r = 0.905$. All of the variables had confirmed reliable. Meanwhile, the value of AVE for three variables had above 0.5, mean that all of the variables confirmed valid.

The weaknesses from the results of the pilot project were carefully examined and further steps were taken to improve the survey instrument before using it to collect the data.

4. Results

4.1. Respondent overview

There were 150 respondents in this research categorized by gender, age, education background, business field, transaction per month, business experience, and e-commerce platform in running the business operation. Table 1 presents the demographic characteristics of the respondents in detail. Out of 150 respondents, 57% are male, 37% are in the age range of 31–40 years, and 32% of respondents graduated from senior high school. Furthermore, a large number of respondents were employed in trade, hotel, and restaurant businesses. Less than two-thirds of the respondents did business transactions within the range of 31–40 million Rupiah (37%). They had business experiences (36%). Finally, approximately two-thirds of the respondents used E-Commerce platforms through Facebook (36%).

4.2. Validity and reliability test

The validity and reliability scores of an instrument's items in this study are fundamental in measuring the efficacy and functionality of the instrument. Validity implies that all the individual scores from an instrument are justifiable, meaningful, and successful in allowing the analyst to come up with valuable, comprehensive conclusions. According to Creswell and Creswell (2017), reliability refers to the coherence of the scores, which is also fundamental for validity. Both validity and reliability are interrelated; scores that are not coherent cannot be meaningful, and vice versa.

The reflective and formative constructs were examined before the researchers test the hypotheses. The E-Commerce Adoption aspect had construct reliability of 0.904, while Entrepreneurial Orientation had a value of 0.704, these scores indicate internal consistency. Furthermore, the four proposed attributes comprising the Financial, Client, Core Industrial Practices, and the

Table 2. Cronbach's alpha, composite reliability and AVE.

Construct variables	Cronbach's alpha	Rho_A	Composite reliability	(AVE)
E-commerce adoption	0.904	0.913	0.917	0.553
Entrepreneurial orientation	0.704	0.796	0.774	0.631
Moderating effect 1	1.000	1.000	1.000	1.000
MSME's sustainable business performance	0.710	0.768	0.784	0.682

Cronbach's alpha results with Cronbach's alpha > 0.70 as shown on the table were concluded as reliable.

Composite reliability values with composite reliability > 0.70 displayed on the table were deduced as consistent.

Average variance extracted (AVE) outcomes with AVE > 0.50 were fulfilling the required criteria.

Educative and Developmental Prospects have a significant relationship to business performance.

In this study, Entrepreneurial Orientation was revealed to be the controlling factor concerning the Internet Trade Acceptance and the Sustainable Business Performance, and the first and second tests indicated values of 0.605 and 0.748 respectively. Furthermore, the Business Performance was mostly affected by the E-Commerce Adoption and was therefore moderated by entrepreneurial orientation (Tables 2 and 3).

R-Square Results from structural models were declared as moderate when the *R-Square* figures > 0.3. The values in the table below were therefore acknowledged as consistent.

The importance and strong positive impact of E-commerce Adoption and Entrepreneur Orientation on the business operation were described by the Goodness of Fit (*GoF*) experiment. These test results showed a value of R^2 0.73 in the structural model, therefore 73.14% of the constructed variable was calculated from the above parameters.

These hypothesis testing results reported the value of *t*-statistics > 1.96 was significant. Therefore, the research variables are confirmed important (Table 4).

5. Discussion

The moderating result through Entrepreneur Orientation in Jambi Province, Indonesia and the direct impact of E-Commerce Adoption on MSME's Sustainable Business Performance was investigated in this study. These results show e-commerce adoptions affect indirectly these variables and support previous research (Yoon and Uysal 2005). The entrepreneur orientation has a contribution in the correlation between e-commerce

Table 3. *R-square*.

	<i>R square</i>	<i>R square adjusted</i>
MSME's sustainable business performance	0.731	0.723

Table 4. Research finding.

Path	(O)	(M)	(STDEV)	T statistics (O/STDEV)	P values
E-commerce adoption -> SME's sustainable business performance	0.208	0.223	0.102	3.685	0.000
Entrepreneurial orientation -> SME's sustainable business performance	0.493	0.487	0.099	4.865	0.000
Moderating effect 1 -> SME's sustainable business performance	0.485	0.473	0.119	4.251	0.012

These above analytical results showed the impact of the variables, where E-commerce adoption and entrepreneurial orientation affect the SME's Sustainable Business Performance at P Values of <0.05. The Entrepreneurial Orientation variable is reported to strengthen and moderate the influence of E-Commerce Adoption on SME's Sustainable Business Performance, therefore, the impact of moderating effect was positive. The full model was presented in Figure 2.

adoption and MSME's Sustainable Business Performance. Furthermore, business persons with positive e-commerce adoption had a greater possibility to experience and exhibit a sustainable business performance.

E-commerce is usually an effective tool of trade, especially for marketing and sales of global diversified products and services, which can benefit companies greatly by improving efficiency, reducing inventory, increasing sales, and enhancing customers. New market penetration rates and final financial returns, and more and more companies are beginning to implement e-commerce.

The importance of e-commerce adoption is investigated in this study along with the correlation between entrepreneur orientation and sustainable business performance. The findings are in accordance with Grandon (2004). The study reported that MSME owners were reluctant to accept e-commerce and used commercial and technological resources for their business trading. This study also discovered price is not seen as an issue to use and adopt e-commerce considering the benefits the business owners might have including increased sales and reduced working hours.

The continued growth and development of global e-commerce is directly proportional to the adoption of online shopping by Asian consumers. Comparing to Western countries, the average adoption rate in Asian countries is lower. The e-commerce adoption situation based on the current study could affect consumers' participation in e-commerce from three aspects such as security, privacy issues in online transactions, and trust in the reliability of online suppliers (Wei et al. 2010).

As countries began to close their borders and shutter industries in March 2020 in an effort to curb the spread of Covid-19, Indonesian policymakers and business leaders had to contend with multifaceted challenges.

Due to international travel suspended, supply chains severely disrupted and global demand plummeting, public and private finance came under pressure. Although the economic, social and health consequences were undoubtedly negative, the disruption also created opportunities for agile and innovative business capable of responding quickly to fluctuations in demand and the widespread adoption of digital solution.

Kim (2020) reported how COVID-19 has affected Consumers' behavior, and it has received relatively limited attention. Managers usually take a wait-and-see reaction to respond to the impact of COVID-19 on sales. It is because they do not know exactly how many customers will return after the pandemic. The business owners must view the pandemic as an accelerator for structural change of digital transformation in consumption and market sectors. Managers may adapt Digital transformation in order to restore and even further increase their trading.

The pandemic has been a stress test of financial strength, governance practices and a company's degree of agility. While good governance cannot mitigate all of the associated risks, it does play a key role. Everything could come to a grinding halt in the absence of delegated authorities, checks and balances on those authorities, and a matrix structure. Companies that are hierarchical cannot respond quickly enough: they usually have one commanding CEO or a family member who drives all major decisions; management and staff tend to wait for instruction, rather than take action.

Given that situation, it requires coordination and collaboration among our human resources, corporate social responsibility, production and purchasing departments. This situation happened without high-level guidance, and it worked flawlessly throughout the organization. The authorities are in place. The corporation has also re-adjusted the skills of employees who cannot perform tasks remotely so that they can continue to contribute to the team. Meanwhile, Dirgantari et al. (2020) reported E-commerce company recommendations is to maintain system and information quality because they become important factors to keep customer satisfaction.

The successful corporate leaders of the future will ultimately be those aligned with these values, which should help Indonesia to step forward to be a greener and more sustainable country in the economy sector. The persistence of social distancing will require an upscaling of physical mass transport assets so finding a way to balance this with more telecommuting practices may be an urgent need for the service sector to thrive. It was optimistic that challenges will be met with innovative solutions (Mowilex 2020).

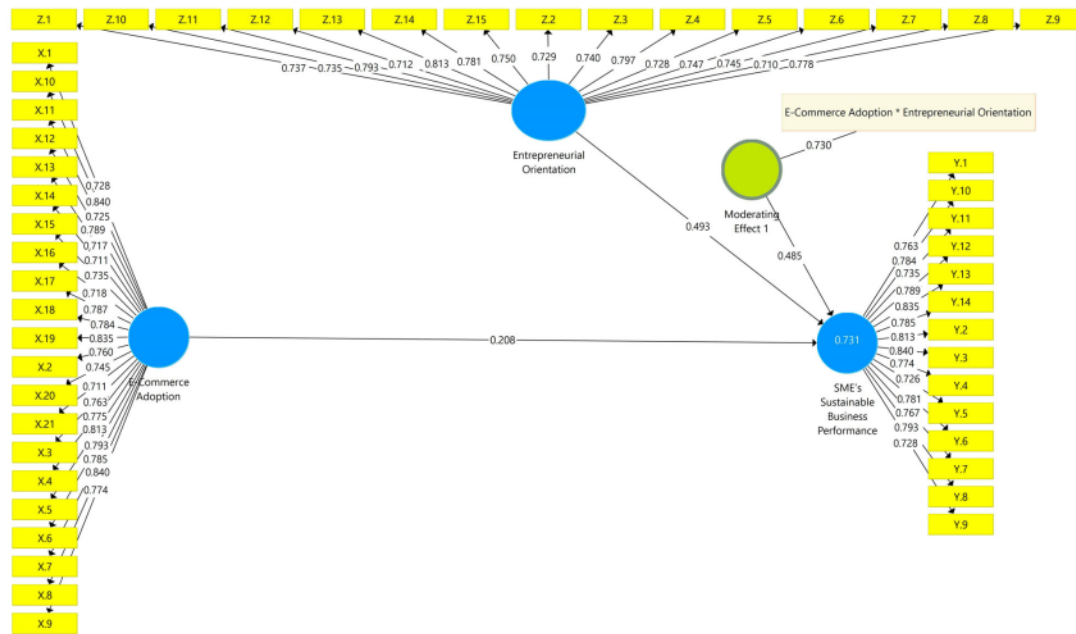


Figure 2. Full model.

The current study showed that entrepreneur orientation moderately affects MSME's sustainable business performance with positive e-commerce adoption. These results are in contrast with the reports by Shah and Ahmad (2019) where this parameter significantly affects the SMEs performance in a positive manner. Furthermore, differentiation tactics partly interceded the correlation between entrepreneurship orientation and performance of SMEs. Therefore, a couple of entrepreneurship orientation dimensions, proactiveness, and risk-taking propensity greatly enhanced firm performance while innovativeness, competitive aggressiveness, autonomy, and competitive energy produced no major shift. The findings showed that the effect of sustainable MSMEs business execution is reported to be moderated by entrepreneurial orientation where the owners toughly manage new product innovation.

This is in accordance with Abebe (2014)'s reports pointing out that e-commerce adoption positively affects the SMEs' yearly turnover progress rate with a greater impact when the firm's manager possesses an enhanced degree of entrepreneurial orientation. The MSME's owners are more proactive, risk-taking, and innovative in these instances. These administrators are able to use several e-commerce technologies to acquire greater risks, search for fresh business opportunities, develop modern goods or services, and react to the constantly varying economic climate nowadays.

6. Limitation

The current study involved three out of twelve main districts, including X, Y, and Z in Jambi Province, Indonesia therefore the study results are not the overall description of MSME in Indonesia. This study has limitations in terms of number of the respondents, so it is recommended for future research to conduct a similar study in different countries/regions before attempting to more general results.

7. Conclusion

The influence of e-commerce adoption on sustainable MSME performance was identified in this study. Meanwhile, the Entrepreneurship Orientation has potentials to moderate the correlation between these parameters. Our current study has been effective in recognizing the significance of e-commerce adoption and entrepreneur orientation in order to improve sustainable MSME business performance and has cleared the way for any future study that wish to further investigate the basic part of e-commerce adoption and entrepreneur orientation. The researchers argued that the Government's role is a significant component to enhance the sustainable MSME business performance in the context of policymaking. Particularly, in the progress of these businesses by enhancing the impact of E-commerce

adoption. Second, the MSME business owners are able to identify and map clients well by adopting e-commerce and entrepreneurship orientation to further develop their business performance. Third, this research findings can be used by academics and practitioners to improve marketing strategy management especially in the field of MSME.

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Disclosure statement

No potential conflict of interest was reported by the authors

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