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Do Digital Technologies Support Entrepreneurship Growth? Evidence from Indonesian Muslim Women in Depok City

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Abstract

The main objective of this paper is to assess the impact of digital technologies on the entrepreneurial output of Muslim women in Indonesia. Using a questionnaire, we collected data from Muslim women entrepreneurs involved in digital entrepreneurship in Depok city. We applied multiple linear regression to analyze the data. We found that the use of e-commerce platforms and internet services affects positively the entrepreneurship growth of Muslim women in Indonesia. However, online payments have been found non-significant because of awareness of risk and security towards online payment system. One of the limitations of this research is the size of the sample. Obtaining data from Muslim women entrepreneurs was very difficult. Again, the case under study is limited to one country. Therefore, it is recommended for future research to use a large sample size and include more countries. Indonesian government should implement tax reduction policies in order to improve the growing sector of Muslim women entrepreneurs, which can help them to become empowered in society.

Keywords: Digital technologies, Ecommerce, Entrepreneurship, Muslim Women

Abstrak

Tujuan utama dari makalah ini adalah untuk menilai dampak teknologi digital terhadap hasil kewirausahaan perempuan Muslim di Indonesia. Menggunakan kuesioner, kami mengumpulkan data dari pengusaha wanita Muslim yang terlibat dalam kewirausahaan digital di kota Depok. Kami menerapkan regresi linier berganda untuk menganalisis data. Kami menemukan bahwa penggunaan platform e-commerce dan layanan internet berdampak positif terhadap ketenagakerjaan perempuan Muslim di Indonesia. Namun, pembayaran online ditemukan tidak signifikan karena kesadaran risiko dan keamanan terhadap sistem pembayaran online. Salah satu keterbatasan penelitian ini adalah ukuran sampel. Mendapatkan data dari pengusaha perempuan muslim sangat sulit. Sekali lagi, kasus yang diteliti terbatas pada satu negara. Oleh karena itu, disarankan untuk penelitian selanjutnya menggunakan ukuran sampel yang besar dan mencakup lebih banyak negara. Pemerintah Indonesia harus menerapkan kebijakan pengurangan pajak untuk meningkatkan pertumbuhan sektor pengusaha wanita Muslim, yang dapat membantu mereka menjadi berdaya di masyarakat.

Kata kunci: *Teknologi digital, Ecommerce, Kewirausahaan, Wanita Muslim*

INTRODUCTION

In addition to making up half of the world's population, women are more susceptible than men and so bear more loads. Since they are the mothers of the nation and society, they are disproportionately impacted by poverty. This might be a result of prejudice in the types of occupations available or in the salaries, which are frequently substantially lower than those of men. According to a UN report, self-employment and home-based work, trends characterised by a lack of security, a lack of benefits, and low income, have actually improved opportunities for women to participate in the labour market in recent years. This demonstrates that launching a business may be a viable strategy for women to avoid unemployment and, in some nations, a means of escaping poverty. The

fact that there are more than 137 million women in Indonesia demonstrates the fact that women need to be self-sufficient in order to support themselves and their family. It is possible that there are universal traits that differ between the sexes that may explain why men and women behave differently when it comes to entrepreneurship, given the persistent and considerable discrepancy in male and female entrepreneurship rates. Women play a crucial role in the advancement of economies and societies in industrialised nations (Ali & Salisu, 2019). GEM. (2017) reported that 163 million women launched or managed new enterprises in 74 economies worldwide in 2016. This demonstrates how eager women are to achieve financial independence. Due to digital developments in the form of new technologies and applications, which are expanding the options accessible to start-ups and potential entrepreneurs, the entrepreneurial landscape is changing (Dholakia & Kshetri, 2004;Khajeheian, 2013).

In addition, as it requires less cash to establish a business, digital technology has benefited start-ups. The realm of digital business is so easily accessible to domesticated women. because they can operate their enterprises from home while still having time for their families and other household members, this promotes domestically inclined women to become company owners. Women are more likely than males to combine their personal and professional lives, whereas men prefer to keep them apart. Again, helping women increase their value, this also increases their ability to earn money.

The majority of studies on women's entrepreneurship have been in the area of fundamental entrepreneurship, with a primary focus on access to capital or the difficulties that entrepreneurs encounter. Women have more difficulty acquiring bank loans, and more specifically, the recent changes in banking have a major negative influence on women's entrepreneurship, as stated by Malmström and Wincent (2018) in their study. As seen, female entrepreneurs exhibit a larger need than do men to engage in informal economic activities. Although there have been some investigations into digital technology, few have focused on entrepreneurship.

In addition, very few research on Muslim women business owners in Muslim settings have been done. SDG5 also emphasises women's empowerment, particularly as it relates to technology, which makes starting a business possible. To succeed in business, one needs to have access to information and funding. The digital aspect of business is currently an emerging area, particularly in entrepreneurship. A company becomes more profitable as it becomes increasingly digitalized. As a result, adopting digital technology in today's society has turned into a crucial instrument for the growth of business.

This paper will therefore deepen our understanding of Muslim women entrepreneurs in the country with the highest Muslim population and how digital technology has affected them as entrepreneurs in order to fill the gap related to the lack of studies regarding the benefits of digital technologies on women's entrepreneurship. Additionally, the current article will evaluate the effect of employing internet, e-commerce, and online payment on the expansion of sales for Muslim female entrepreneurs. The breakdown of the paper's structure is as follows: In the second section, a background of the study and a review of the literature will be provided. We will explain the procedures in part three; the results and discussion will be covered in section four. Section 5 will display the conclusion.

LITERATURE REVIEW

In this section, we will review literature related to Women entrepreneurship and the role of digital technology on entrepreneurship after digging into the literature on digital technologies and women entrepreneurship

Women Entrepreneurship

One of the risky things that entrepreneur must take on is turning ideas into reality. To accomplish the pre-established objectives, one must also be inventive and tenacious. With lower prices and higher values for sustainable growth, entrepreneurs have enhanced the opportunities for invention, innovation, production, and processing (Balachandran & Sakthivelan, 2013). The studies pertaining to the position of women entrepreneurs and the difficulties they experience as business owners will be discussed in the paragraphs that follow.

In their study, Alam et al. (2011) examined entrepreneurial traits. The results of this study suggest that while locus of control has no consequence on employees' accountability at work, creativity, an entrepreneurial attribute, has an impact on a company's everyday operations. Being the sole owner of the company is one of the main advantages for female entrepreneurs. They are free to choose when and where to labour. Women can now work from home or convert their houses into businesses thanks to this flexibility. Contrarily, a research by Tambunan (2007) found that the majority of women who manage SMEs belong to the category of "forced" entrepreneurs who are trying to improve the quality of life for their family.

This illustrates how the participation of women in SMEs may decline when employment opportunities for women increase and they are paid more. Furthermore, it was noted that Indonesian SMEs were extremely significant because they accounted for, on average, more than 95% of all enterprises across all Asian industries. For a number of reasons, including low educational attainment, a lack of capital, and cultural or religious prohibitions, there were still fewer women entrepreneurs than there ought to be. In support of this, a study on the difficulties faced by female entrepreneurs in Malaysia was done by Sarif et al. (2013). Four states provided samples for this study. They discovered that social companies can significantly contribute to the creation and upkeep of civil society, which helps the entire neighbourhood. Therefore, it is the responsibility of society as a whole to protect the participation of female entrepreneurs in this area.

According to Roomi and Parrott (2008) women entrepreneurs in Pakistan do not have equal access to opportunities due to a number of deeply rooted, discriminatory socio-cultural attitudes and practises. The structures in place to assist these emerging business women show these limits. It means that the absence of capital, land, business spaces, information technology, training, and agency support prevents female entrepreneurs from reaching their full economic potential. Difficult issues arise from a patriarchal society's underlying views that men are superior to women and that women are better suited to be homemakers. The lack of assistance provided by certain male family members also restricts women's mobility and depletes their social capital. Additionally, it shows that multiagency cooperation is required to promote development.

Expanding women's access to local, regional, and national networks as well as business development services may be possible with the help of the media, educational policymakers, and governmental organisations. This would make it easier for women to start businesses and contribute to the economy as a whole. Ndziba-Whitehead (1993) once more proposed stepping up capacity-building activities for NGOs, community organisations, government agencies, and development organisations in order to empower women for democratic change. This illustrates the reality that women cannot engage in entrepreneurship on their own. All parties engaged in making it successful are required to use an integrated system.

We cannot ignore the part that women play in society. Women have traditionally preferred to stay at home and care for their families, but more recently, we have noticed an increase in the number of working women. They are now more independent and have increased their contribution to the economy as a result. In less developed nations with high female unemployment rates, entrepreneurship may be a realistic choice for certain women who must work from home to produce income, reduce their unemployment rate, and lessen poverty (Sarfaraz et al., 2018). The gender gap cannot be totally closed, but it is getting smaller. Reducing inequality strengthens society, enhances economies, and enables everyone to realise their full potential. Up until recently, when there has been a minor increase in female participation, the entrepreneurial sector has long been dominated by men. There is no link between female entrepreneurship and gender equality (Sarfaraz et al., 2014). We can, however, state that the field of entrepreneurship is promising for women. There has been an upsurge in the number of female entrepreneurs globally, which has recently attracted the attention of scholars and policymakers.

Digital technology and women entrepreneurship

Empirical studies related to the importance of digital technologies in business entrepreneurship will be reviewed in this section. Bharadwaj et al. (2013) asserted that the rapid development of digitalization has a substantial impact on the structure of economic activity and the key factors driving economic growth. This leads to the conclusion that, in order to get the greatest rewards from digitization, digital skills are also necessary. The variations in the degree of digitalization in certain regions have an impact on the potential forms of innovative entrepreneurial activity in those regions. For a variety of reasons, low-digitalization areas struggle to implement innovative digital solutions. Legislative limitations, a lack of digital expertise or vision, and poor technological infrastructure all prevent the implementation of digital technology from reaching its full potential. In addition, Caviggioli and Ughetto (2019) investigated how female entrepreneurs overcome challenges by utilising new digital technologies in the creation and management of new firms. They discovered that women are excellent candidates for leveraging digital technologies for the growth of their businesses. Technologies make it easier and more flexible for them to run their businesses. Therefore, digital technology may act as a catalyst for the growth of women-owned businesses.

Jalan and Gupta (2019) recently examined how technology is evolving, how company operations are becoming more reliable, and how women are successfully using digital tools to further their efforts. The basis for the study technique was

exploratory and descriptive research. A range of tools are used to gather secondary data, including journal articles, the internet, libraries, and individuals who assist digital women entrepreneurs. The results of this study show that digitalisation has a big impact on the rise of female entrepreneurs in Bhilwara, India. This indicates that thanks to developments in e-commerce, women can now explore a variety of entrepreneurial professions and work in those that interest them. It promotes more adaptability and cheaper expenditures for particular activities like marketing, public relations, and business growth. Therefore, it's critical to spread awareness of the advantages of digitization, which will enhance the environment for female entrepreneurs and lead to a sizable increase of the economy.

Entrepreneurs must progressively link with the digital infrastructure and a successful digital business and financial sector, according to a report by (Caviggioli & Ughetto, 2019). It is anticipated that women who have previously been excluded from male-dominated entrepreneurial contexts will gain from the Internet's wealth of knowledge and the lowering of entry barriers in the corporate world. This study shows that, despite the fact that digital technology has made doing business simple, launching a digital business still presents certain difficulties.

It was a good point made by Paoloni et al. (2019) that there are now opportunities to go over constraints. ICT, social media, mobile, sensors, the internet of things, big data, 3D printing, etc. are just a few of the many digital innovations that have enabled women to get beyond a variety of barriers on the path to entrepreneurship. In contrast to the conventional notion of entrepreneurship, this is important to keep in mind since starting a business doesn't just call for start-up money and physical assets. According to Salam (2018), as a result of the rapidly growing technology sector, many business owners are adopting digital technology to support their established enterprises, boost productivity, take more risks, and enhance their capabilities.

The study focused on the perspectives and reactions of female company owners in south India to technological innovation. When utilising technology to operate their businesses, new entrepreneurial firm models often demonstrate ingenuity and a willingness to take risks. It implies that female business owners are focused on achieving their goals when it comes to updating the technology at their organisation. However, very little research has been done regarding the advantages of digital technologies for Muslim women entrepreneurs.

Subramaniam and Islam (2014) examined how Muslim female entrepreneurs in Singapore had adapted cutting-edge organisational cultures and used technology to grow their businesses. The study looked at twelve female small- and medium-sized enterprise (SMEs) owners and managers who used technology and innovation in their operations. They employed a qualitative methodology based on in-depth interviews, which were performed, as well as a questionnaire with semi-structured open-ended questions. The female company owners were chosen based on a number of criteria, including corporate ownership and demography. The interviewees were highly creative and open to expanding and improving their firms by utilising new ideas and technologies.

It was discovered that women who own their own businesses are conscious of the importance of technology in the very competitive market of today. Female business owners constantly update both themselves and their personnel because they understand

that human capital is the key to their companies' growth. They think that the success of their businesses depends on constant innovation and the development of their human resources. Their management and leadership skills, which are crucial for driving innovation, were primarily accountable for the growth and success of their companies. Therefore, a key factor in the success of female entrepreneurs is digital technology. Similar to this, Mivehchi (2019).started a study on how Iranian Muslim women entrepreneurs are affected by information technology. Data was collected from 40 female business owners who sell their goods and services online. The Likert scale was used to analyse how information technology has affected female entrepreneurs. The findings showed that IT is crucial to a company and plays a significant role in facilitating job access as well as enhancing the marketing and sales of the products under consideration. Thus, ICTs help female business owners manage their enterprises profitably by increasing the marketing of their products.

McAdam et al. (2020) examined whether digital advances provide women in economically privileged environments and a Muslim community with restrictive social and cultural norms a meritocratic and safe space. They further investigate the emancipatory potential of digital entrepreneurship for women in Saudi Arabia with an emphasis on entrepreneurship emancipation and a focus on cyberfeminist research. The research demonstrates how Saudi Arabian women are transforming their embodied identities and lived realities through digital entrepreneurship. For the case of Indonesia, which has the biggest percentage of Muslims but is not as developed economically or technologically as Saudi Arabia, calls for a deeper comprehension of how digital technology has impacted Muslim women entrepreneurs. Additionally, this shows that religion is not a barrier to becoming an entrepreneur.

According to the literature mentioned above, the field of research on female entrepreneurship is expanding, and the majority of it emphasises the challenges that women face when beginning and running a business, with a focus on access to information, funding, and networks. Surprisingly little is known about the ways in which digital technologies have altered the environment for women's business. Despite academic studies starting to look at the role that digital technologies play in entrepreneurial ecosystems; the gender perspective is still largely neglected. To close this gap, we will look at Indonesia, the largest Muslim nation in the world, to see how digital technologies have affected Muslim women's entrepreneurship. From this goal, we formulate the following theory:

H1: the use of e-commerce platforms impacts positively the growth of sales of muslim women entrepreneurship in Indonesia.

H2 using online payment services for Muslim women entrepreneurs in Indonesia impact significantly the growth of their entrepreneurship.

H3: using internet services for muslim women entrepreneurs in Indonesia impact significantly the growth of their entrepreneurship.

METHODS

Research design

We used Descriptive research design with quantitative survey approach. It is quantitative in nature as it attempts to collect information and statistically analyze it. To characterise a phenomenon and its traits is the aim of descriptive study. This study

is more interested in what occurred than in how or why it occurred. As a result, tools for observation and surveying are frequently utilised to collect data (Nassaji, 2015). The predict, the role of digital technologies on Muslim women entrepreneurship growth, the study used linear regression analysis. It is a potent predictive modelling method that permits the statistical study of continuous variables. It is the most often used method for figuring out how inputs and outputs relate to one another.

Data and Selected Variables

Data is collected through using structured questionnaire distributed to the Muslim female entrepreneurs running their businesses in Indonesia. The sample for the study consists of twenty-six respondents from around Depok city who are actively involved in digital entrepreneurship. We obtained respondents via an online collection method using social media to circulate the questionnaire.

We selected four variables: growth of sales (Gsales), use of an ecommerce platform (Ecom), use of online payment (Onpay), and use of the internet (UseInt). Growth of sales (Gsales) is a measure of how much money Muslim women company owners have made using digital technologies. It is quantified by a metric called sales growth and demonstrates your sales' capacity to raise revenue over a specified period of time. Without revenue growth, businesses face the risk of being overtaken by competitors and stagnating. It frequently fosters innovation, helping you to distinguish yourself from the competitors and stand out in the market. Growth can also increase stability and revenue, provide you more options for suppliers, and strengthen your company's brand. Mivehchi (2019) asserts that the employment of digital technology and the increase of sales for business women in Iran are positively correlated. It means that Digital technology assist in growing their firm and bringing in more money. As a result, we selected these factors to indicate the development of entrepreneurship. Analysing how digitization has affected Muslim women's entrepreneurship may be useful.

Three factors use of an e-commerce platform (Ecom), use of an online payment system (Onpay), and usage of the internet (Use Int) were employed as stand-ins for digital technologies. These variables will demonstrate how these technologies are used and how they affect Muslim women's entrepreneurship's growth in sales. Digital technologies, according to Ojokoh et al. (2013) and Ajjan et al. (2014) improve access to knowledge about markets, customers, production plans, and business strategies. This implies that utilising digital technologies can promote business growth and inspire businesses to be inventive. Given the importance of utilising digital technologies, we decided to examine the effects of these tools on Muslim women's entrepreneurship using the internet, online payment systems, and e-commerce platforms.

The proposed econometric model is as follows:

$$Gsales_i = \alpha + \beta_1 Ecom_i + \beta_2 Onpay_i + \beta_3 UseInt_i + \varepsilon_t$$

Where:

<p>Gsales: Growth of sales Ecom: use of e-commerce platforms OnPay: Online payment UseInt: use of internet</p>
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Tools for analyzing the research

We proceed our analyzing of the collected data within three steps: First, we will use descriptive approach to interpret the data obtained from the questionnaire. This approach will help to understand the level of experience of business women towards being entrepreneurs, their level of education and also the possibility of business creation with the use of digital technologies.

Second, we will use multiple linear regress to assess the impact of digital technologies on the entrepreneurship of Muslim women in Indonesia. In this step, we will use statistical analysis to confirm or deny the significant impact of the use of digital technologies for the prosperous business of Muslim women.

Thirdly, we finalize our analysis by using inferential statistics tools to test our hypothesis. In this section we will use statistics test such as test of student. This test aims to test the significance of the coefficients of the variables and make a decision on acceptance or rejection of our hypothesis.

RESULTS AND DISCUSSION

Descriptive Approach

In this section, we describe the level of education and experience of Muslim women entrepreneurs, as well as the possibility of being entrepreneurs while using digital technologies.

From figure 1, we observe that 53.8% of Muslim entrepreneurs in Indonesia have a bachelor's degree level before being entrepreneurs. So, this percentage shows that women are well educated in Indonesia, and being educated will help them grow their business easily. Moreover, the level of master's degree is quite lower, at almost 23.1%, similar to the secondary school level. whereas it demonstrates the high literacy level of Muslim female entrepreneurs in Indonesia. Oggero et al. (2020) studied the intricate relationship between financial literacy and digital abilities among female entrepreneurs. They found women are in finance to level the playing field when it comes to business attitudes; the digital channel strengthens the influence of financial education on selecting entrepreneurship as a career. That means it has an influence on the career of entrepreneurship. Therefore, the more women are educated, the more they can easily create their own business and become prosperous in societ.

Figure 1
Level of education

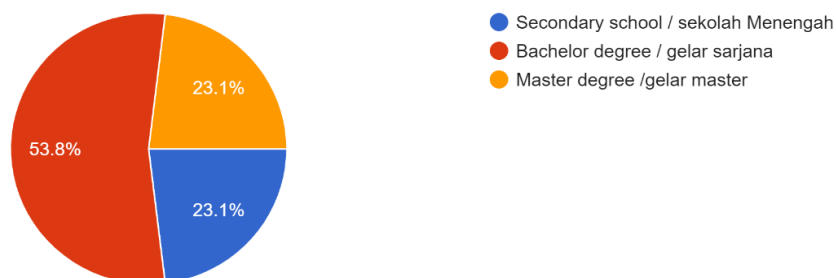


Figure 2 shows the level of experience of Muslim women entrepreneurs in Indonesia. It demonstrates the percentage of prior experience in entrepreneurship. We observe that 76.9% of Muslim women have prior experience in entrepreneurship. Politis and Gabrielsson (2009) argued that having prior experience in entrepreneurship has a positive influence on a business. It helps to create more value and easy implementation of the business.

Figure 2
Level of experience

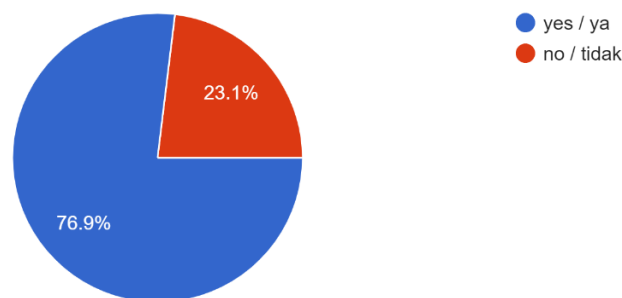
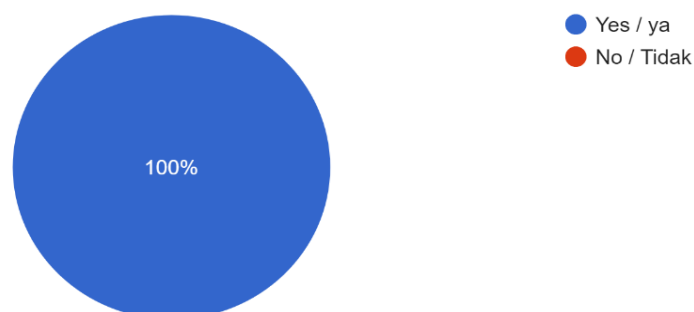


Figure 3 below shows the effect of using internet services for business creation. We observe that the use of internet services helps Muslim women entrepreneurs to create their business. It shows that internet services help them at 100%. This implies the high concentration of internet usage in Indonesia. It shows the great potential advantages of internet services towards the empowerment of Muslim women. Therefore, it can be said that internet service is a big component in the creation of business entrepreneurship in general and particularly women's entrepreneurship.

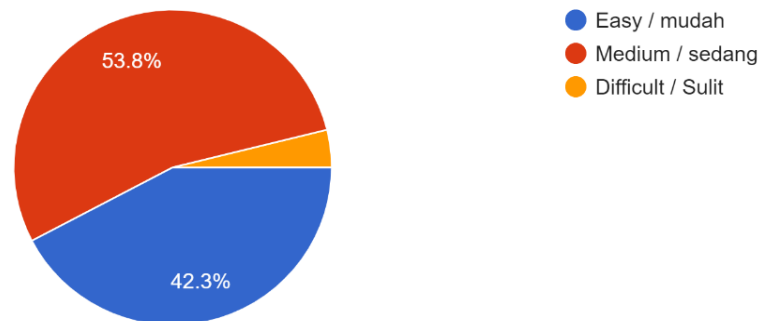
Figure 3
Internet affecting business creation



In Figure 4 below, we observe the possibility of creating a business with the emergence of e-commerce platforms to create a business. 53.8% of Muslim female entrepreneurs find medium help from e-commerce to create their business. 42.3% of them find easy help through e-commerce to create their business. Whereas a small percentage find it difficult to create a business using ecommerce platforms. In general, it can be said that e-commerce platforms serve as mediators between businesses and

customers. E-commerce platforms help women entrepreneurs offer their products to customers. Meanwhile, it is a tool for selling digital goods and services.

Figure 4
E-commerce platforms to create business.



Regression outcome and hypothesis testing

Multiple linear regression is used to assess the impact of digital technologies on the entrepreneurship of Muslim women in Indonesia. After estimating the proposed econometric model, we find the following output.

$$Gsales_i = 0,567 + 0,263Ecom_i + 0,026Onpay_i + 0,36UseInt_i$$

Table 1
Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754 ^a	.568	.509	.39998

a. Predictors: (Constant), UseInt, Ecom, Onpay

From this output, we observe that all of the coefficients of the variables are positive. Moreover, from table 1 below, the value of R^2 is $0,56$. This means that the model is statistically significant because the independent variables explained 56% of the variations in sales related to the entrepreneurship of Muslim women in Indonesia. Therefore, digital technologies have a positive impact on Muslim women's entrepreneurship. Before discussion of these results, we will test our hypothesis in the following section.

We had set three hypotheses related to the impact of digital technologies on Muslim women's entrepreneurship. First, Null hypothesis: the use of e-commerce services does not affect the growth of Muslim women's entrepreneurship in Indonesia. Alternative hypothesis: the use of e-commerce platforms impacts positively the growth of sales of Muslim women's entrepreneurship in Indonesia.

Second, Null hypothesis: using online payment services for Muslim women entrepreneurs in Indonesia has no effect on the growth of their entrepreneurship. Alternative hypothesis: using online payment services for Muslim women entrepreneurs in Indonesia impacts significantly the growth of their businesses.

Third, Null hypothesis: using internet services for Muslim women entrepreneurs in Indonesia has no effect on the growth of their entrepreneurship. Alternative hypothesis: using internet services for Muslim women entrepreneurs in Indonesia impacts significantly the growth of their businesses.

Table 2
Output of the coefficients

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.567	.236		2.400	.025
	Ecom	.263	.124	.363	2.118	.046
	Onpay	.026	.174	.026	.149	.883
	UseInt	.367	.131	.489	2.812	.010

a. Dependent Variable: Gsales

From table 2 above, for the first hypothesis, the t stat of the e-commerce variable is greater than 1,965 at 5% level of significance, so we reject the null hypothesis. Consequently, e-commerce (Ecom) is statistically significant. So, the use of e-commerce platforms impacts positively the growth of sales of Muslim women's entrepreneurship in Indonesia.

For the second hypothesis, the value t stat of the variable online payment (Onpay) is less than 1,96, so we accept the null hypothesis. Consequently, the variable of online payment is not statistically significant. We conclude that using online payment services for Muslim women entrepreneurs in Indonesia has no effect on the growth of their businesses.

Finally, for the third hypothesis, the t stat of the internet variable (UseInt) is greater than 1,96, so the null hypothesis is rejected. This variable is statistically significant. Consequently, using internet services for Muslim women entrepreneurs in Indonesia impacts significantly the growth of their businesses.

Discussion

Our findings reveal that the use of e-commerce platforms has a positive impact on women's entrepreneurship in Indonesia. This means that e-commerce platforms play an important role in the development and growth of Muslim women's business entrepreneurship. Soureya and Amadu (2022) found similar results. In the case of Cameroonian SMEs, they argued that the use of e-commerce platforms has a positive impact related to the growth of SMEs. It means that e-commerce platforms increase the dematerialization of information flows and rapid communication between staff members and/or clients. This aids in lowering manufacturing costs, permits scaling up, and facilitates the addition of value through innovations in communication, production, and marketing processes. Once more, using e-commerce by business women will help to lower costs, get affordable marketing services, collect customer data insight, and

scale up. Therefore, using e-commerce platforms has an important opportunity in the growth of a business. It plays a crucial role in promoting entrepreneurship.

Moreover, the results showed that the use of internet services has a positive impact on women's entrepreneurship. That implies the role of the internet in promoting digital entrepreneurship. Meanwhile, the growing sales of Muslim women's entrepreneurship are highly affected by the internet services. It serves as an engine to reduce the cost of running the business, attract new customers, save time, and realize more profits. Internet services facilitate the access of information and customer data by companies in order to extract and realize more profit. Indeed, the growing opportunities for interaction and cooperation between many actors with various origins, experiences, knowledge, and other attributes will enhance women's capacity for their entrepreneurship and have an impact on the results of their activities (UNCTAD, 2014). Again, opportunities for reciprocal communication, collaboration, and contact with partners, customers, potential customers, etc. have increased, especially with the emergence of social media, which is widely accessible and used by many individuals (Solomon & Van Klyton, 2020). In addition, according to Alsop and Heinsohn (2005), more access to information via social media can enhance a female entrepreneur's ability to consider various possibilities in order to make meaningful decisions. Therefore, this suggests the important role played by internet services used by female entrepreneurs for growing their businesses.

Whereas these results showed a non-significant impact of the online payment system on the growth of Muslim women's entrepreneurship. That means that the use of online payment does not significantly impact their business. It can be seen that most of their customers prefer using cash payment instead of online payment. This can be due to the insecurity of certain online payment services like OVO, Shopee, and others. Customers are looking for security and low transaction costs. But certain online platforms are deficient in security and charge high transaction costs. Therefore, this can be an obstacle for customers using online payment. Consequently, this can affect the growth of sales of women's entrepreneurship. In similar findings, Nguyen and Nguyen (2020) argued that online payment has a negative impact on businesses because of the awareness of risk, which has the strongest negative impact on online payment method decision behavior.

As the world advances in technology rapidly and influences almost all activities in our lives, the necessary changes need to be made from all aspects to adjust accordingly. Digital technology's quickening pace is altering businesses and society everywhere (Nambisan, 2017). This includes the way we transact with one another. Technology has brought products and services a step closer to us. This entails the need for us to have access to the right information in order to make better-informed decisions. Better access to information, expertise, and resources concerning markets, customers, production techniques, technology, marketing, and business models is one of the first benefits of digital technologies (Ojokoh et al. 2013; Ajjan et al., 2014). In today's age, where women play an important role in society, digital technology has brought about an impact on their wellbeing. Times have changed for them and they have slowly been drifting away from being employment seekers to being self-employed. SDG5, which calls for gender equality and the empowerment of all women and girls, aims to increase the use of enabling technology, particularly information and communications

technology, to promote women's empowerment. One of the ways to empower women is by them being financially independent, and this can be done through being entrepreneurs. Ultimately, as digital technology has assisted women in becoming entrepreneurs, we cannot ignore the fact that it is the main source of innovation in modern-day entrepreneurship.

Globally, digital technology has advanced and been embraced by the population at a drastic rate since the emergence of the COVID-19 pandemic. The situation of social distancing and the lockdown brought about creativity and innovation in the business industry. Life still had to go on, even with limited human interaction. This was an opportunity for many to explore digital business. Moreover, it gave a stepping-stone to those who were new to their business and to new entrants in the business sector in the sense that more attention was given to the digitalization of transactions. This could be one of the reasons for the increase in the entrepreneurial industry, particularly among women. They could easily work from home and gain an income at the same time. The great effort from the government of Indonesia during the COVID-19 crisis cannot be overlooked. The policies introduced were favourable to digital businesses and thus encouraged people to take advantage of them. Indeed, the COVID-19 crisis was a blessing in disguise for Muslim women entrepreneurs. Therefore, these findings deepen our understanding on how exactly digital technology is impacting Muslim women entrepreneurs from the Indonesian perspective with the largest Muslim population.

CONCLUSION

The impact of digital technologies on Muslim women entrepreneurship in Indonesia was investigated in this paper. We applied quantitative research method with a survey approach. Data was collected using a structured questionnaire. After using multiple linear regression, we found that the use of e-commerce platforms and internet services influenced positively the growth of sales of Muslim women's businesses. It is suggested that using e-commerce platforms by business women will help them to reduce transaction costs, get affordable marketing services, collect customer insight, and scale up. Therefore, using e-commerce platforms has an important opportunity in the growth of businesses. It was also found that more access to information via social media can enhance a woman entrepreneur's ability to consider various possibilities in order to make meaningful decisions. Meanwhile, these results highlight the main importance played by internet services used by women entrepreneurs for growing their businesses. However, it is discovered that the online payment system does not affect the growth of business women's entrepreneurial activities in Indonesia. It implies that customers are looking for security and low transaction costs. Nevertheless, some online platforms are deficient in security and have high transaction costs. Therefore, women entrepreneurs prefer using cash payment instead of an online payment system. One of the limitations of this research is the size of the sample. Obtaining data from Muslim women entrepreneurs was very difficult. Again, the case of study is so limited to one country. Therefore, it is recommended for future research to use a large sample size and include more countries.

The following are policy recommendations that can be driven by our results: Indonesian government should implement tax reduction policies in order to improve the growing sector of Muslim women entrepreneurs, which would help them become

empowered in society. It also recommends promoting the competitiveness of online payment companies by implementing competition, which can enable them to supply good services for the development of women entrepreneurs. Lastly, the government should ensure policy against cyber criminality, which constitutes the major challenge of using internet services. Therefore, that could help women entrepreneurs to use internet services effectively for the promotion of their business.

REFERENCES

- Ajjan, H., Beninger, S., Mostafa, R., & Crittenden, V. L. (2014). Empowering Women Entrepreneurs in Emerging Economies: A Conceptual Model. *Organizations and Markets in Emerging Economies*, 5(1), 16–30. <https://doi.org/10.15388/omee.2014.5.1.14239>
- Alam, S. S., Jani, M. F. M., & Ismail, H. B. (2011). *Entrepreneurs traits and e-commerce adoption: An empirical study*.
- Ali, M. A., & Salisu, Y. (2019). Women Entrepreneurship and Empowerment Strategy for National Development. *Journal of Economics, Management and Trade*, 22(3), 1–13. <https://doi.org/10.9734/JEMT/2019/44828>
- Alsop, R., & Heinsohn, N. (2005). Measuring empowerment in practice: Structuring analysis and framing indicators. *Available at SSRN 665062*.
- Balachandran, V., & Sakthivelan, M. S. (2013). Impact Of Information Technology On Entrepreneurship (e-Entrepreneurship). *Journal Of Business Management & Social Sciences Research*, 2, 51–56.
- Bharadwaj, A., El Sawy, O. A., University of Southern California, Pavlou, P. A., Temple University, Venkatraman, N., & Boston University. (2013). Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly*, 37(2), 471–482. <https://doi.org/10.25300/MISQ/2013/37:2.3>
- Caviggioli, F., & Ughetto, E. (2019). A bibliometric analysis of the research dealing with the impact of additive manufacturing on industry, business and society. *International Journal of Production Economics*, 208, 254–268. <https://doi.org/10.1016/j.ijpe.2018.11.022>
- Dholakia, R. R., & Kshetri, N. (2004). Factors Impacting the Adoption of the Internet among SMEs. *Small Business Economics*, 23(4), 311–322. <https://doi.org/10.1023/B:SBEJ.0000032036.90353.1f>
- GEM. (2017). *In GEM Global Entrepreneurship Monitor*. <https://www.gemconsortium.org/report/gem-20162017-womens-entrepreneurship-report>
- HADJA Soureya & Ismaila Amadu. (2022). *Contribution des technologies digitales a la croissance des PME camerounaises*. <https://doi.org/10.5281/ZENODO.6382480>
- Jalan, D.-N., & Gupta, V. (2019, September 5). Scope, Opportunity and Challenges to Digital Entrepreneurship. *Proceedings of ISER 222nd International Conference*.
- Khajeheian, D. (2013). New Venture Creation in Social Media Platform; Towards a Framework for Media Entrepreneurship. In M. Friedrichsen & W. Mühl-Benninghaus (Eds.), *Handbook of Social Media Management* (pp. 125–142). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-28897-5_8

- Malmström, M., & Wincent, J. (2018). Bank lending and financial discrimination from the formal economy: How women entrepreneurs get forced into involuntary bootstrapping. *Journal of Business Venturing Insights*, 10, e00096. <https://doi.org/10.1016/j.jbvi.2018.e00096>
- McAdam, M., Crowley, C., & Harrison, R. T. (2020). Digital girl: Cyberfeminism and the emancipatory potential of digital entrepreneurship in emerging economies. *Small Business Economics*, 55(2), 349–362. <https://doi.org/10.1007/s11187-019-00301-2>
- Mivehchi, L. (2019). The Role of Information Technology in Women Entrepreneurship (The Case of E-Retailing in Iran). *Procedia Computer Science*, 158, 508–512. <https://doi.org/10.1016/j.procs.2019.09.082>
- Nambisan, S. (2017). Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship. *Entrepreneurship Theory and Practice*, 41(6), 1029–1055. <https://doi.org/10.1111/etap.12254>
- Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129–132. <https://doi.org/10.1177/1362168815572747>
- Ndziba-Whitehead, T. (1993). Women’s Entrepreneurship in South Africa. *Agenda*, 97.
- Nguyen, T. P. L., & Nguyen, V. H. (2020). Factors Affecting Online Payment Method Decision Behavior of Consumers in Vietnam. *Journal of Asian Finance, Economics and Business*, 7, 231–240.
- Oggero, N., Rossi, M. C., & Ughetto, E. (2020). Entrepreneurial spirits in women and men. The role of financial literacy and digital skills. *Small Business Economics*, 55(2), 313–327. <https://doi.org/10.1007/s11187-019-00299-7>
- Ojokoh, B., . S. O., & . K. A. (2013). Women’s Perceptions and Uses of Information and Communication Technologies in Nigeria and China: A Comparative Analysis. *Information Management and Business Review*, 5(4), 203–216. <https://doi.org/10.22610/imbr.v5i4.1044>
- Paoloni, P., Secundo, G., Ndou, V., & Modaffari, G. (2019). Women Entrepreneurship and Digital Technologies: Towards a Research Agenda. In P. Paoloni & R. Lombardi (Eds.), *Advances in Gender and Cultural Research in Business and Economics* (pp. 181–194). Springer International Publishing. https://doi.org/10.1007/978-3-030-00335-7_12
- Politis, D., & Gabrielsson, J. (2009). Entrepreneurs’ attitudes towards failure: An experiential learning approach. *International Journal of Entrepreneurial Behavior & Research*, 15(4), 364–383. <https://doi.org/10.1108/13552550910967921>
- Roomi, M. A., & Parrott, G. (2008). Barriers to Development and Progression of Women Entrepreneurs in Pakistan. *The Journal of Entrepreneurship*, 17(1), 59–72. <https://doi.org/10.1177/097135570701700105>
- Salam, A. (2018). *IMPACT OF DIGITIZATION ON WOMEN ENTREPRENEURS*. <https://www.semanticscholar.org/paper/IMPACT-OF-DIGITIZATION-ON-WOMEN-ENTREPRENEURS-Salam/3f4eefe9f4fa973569a642b41db1b817af7e783b>

- Sarfaraz, L., Faghih, N., & Majd, A. (2014). The relationship between women entrepreneurship and gender equality. *Journal of Global Entrepreneurship Research*, 2(1), 6. <https://doi.org/10.1186/2251-7316-2-6>
- Sarfaraz, L., Mian, S. A., Karadeniz, E. E., Zali, M. R., & Qureshi, M. S. (2018). Female Entrepreneurship, Internationalization, and Trade Liberalization in Iran, Pakistan, and Turkey. In N. Faghih & M. R. Zali (Eds.), *Entrepreneurship Ecosystem in the Middle East and North Africa (MENA)* (pp. 677–690). Springer International Publishing. https://doi.org/10.1007/978-3-319-75913-5_27
- Sarif, S. bin M., Sarwar, A., & Ismail, Y. (2013). Practice of Social Entrepreneurship among the Muslim Entrepreneurs in Malaysia. *Middle-East Journal of Scientific Research*, 14(11), 1463-1470.
- Solomon, E. M., & Van Klyton, A. (2020). The impact of digital technology usage on economic growth in Africa. *Utilities Policy*, 67, 101104. <https://doi.org/10.1016/j.jup.2020.101104>
- Subramaniam, P., & Islam, J. (2014). *Innovation and the Impact of Technology on Women Entrepreneurs in Small and Medium Enterprises in Singapore*.
- Tambunan, T. (2007). ENTREPRENEURSHIP DEVELOPMENT: SMES IN INDONESIA. *Journal of Developmental Entrepreneurship*, 12(01), 95–118. <https://doi.org/10.1142/S1084946707000575>
- UNCTAD. (2014). *Trade and Development Report, 2014*. United Nations Conference on Trade and Development. <https://unctad.org/publication/trade-and-development-report-2014>