"Digital entrepreneurship: Socio-demographics and consumer behavior in Indonesia"

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DIGITAL ENTREPRENEURSHIP: SOCIO-DEMOGRAPHICS AND CONSUMER BEHAVIOR IN INDONESIA

Abstract

Consumer characteristics of digital entrepreneurship are indispensable in achieving sustainable growth. Digital entrepreneurship has been rapidly growing and developing worldwide, and Indonesia is no exception. This study aims to determine the effect of socio-demographics on consumer decisions on using products and services of digital entrepreneurship in Indonesia. The study used an online survey of 400 residents of Palembang City, Indonesia. The respondents were selected through a stratified random sampling method. A logistic regression model is estimated to determine the effect of socio-demographic variables that promote start-up entrepreneurship. The empirical results show that age, education, and income have a significant effect on consumers of digital entrepreneurship. The results also confirm that young people are more likely than older people to set up digital entrepreneurship. The higher people's income and higher their education, the greater their likelihood of using products and services of digital entrepreneurship. The implication is that digital entrepreneurs must consider the reach of consumers to the products and services offered in terms of price, quality, uniqueness, and convenience per socio-demographic conditions.

Keywords   socioeconomic, economy, demography, digital entrepreneurship, start-up

JEL Classification   J10, J12, M00, M29

INTRODUCTION

In the last decade, the digital revolution has developed rapidly and brought significant new changes to the development of digital technology. The phenomenon of economic digitalization makes information technology a fundamental need of society. Economic digitalization has encouraged the development of global innovation because it can help organize, plan, and develop new products (Knell, 2021). One of the effects of the development of information technology is a digital entrepreneurship model. The emergence of digital entrepreneurship has proven to have an impact that makes it easier for entrepreneurial humans to limit their space at an affordable cost and even create opportunities for broader market reach (Elia et al., 2020).

Entrepreneurship has been identified as one of the main drivers of well-being and is therefore considered a means to aim for economic growth and job creation (Kimmitt et al., 2020). Digital entrepreneurs run their businesses by utilizing the sophistication of information and communication technology (ICT). Digitalpreneurs aim to achieve new business opportunities through Internet media and technology. Often, digitalpreneurs only focus on service and the role of technology to the extent that it is an input factor (Giones & Brem, 2017) without looking specifically at the technology used

in their business ideas. There is a three-step digital entrepreneurship roadmap consisting of developing entrepreneurial ideas and decisions, the development of start-ups, and business management (Le Dinh et al., 2018).

One of the phenomena of new business creation that is happening now is the development of start-up businesses. Start-ups have become a study in various disciplines and have been defined in various perspectives. A start-up is a young company established to develop unique services and products, bring them to market and make them irreplaceable for customers. Another definition suggests that a start-up is a company built during uncertainty where innovation is the key to creating products and services where the user of the start-up hopes for a revolution in the market.

In the Indonesian context, start-ups must have a massive consumer growth target by utilizing digitalization in the current era to be ready to enter the free market by expanding market share and reaching all consumers. Digital entrepreneurship can create business opportunities at a meager cost and in a wide market (Muafi et al., 2021). Therefore, to increase consumer growth with an efficient and targeted marketing strategy, start-up activists must know precisely what the wants and needs of consumers are aiming for at each level and segmentation.

1. LITERATURE REVIEW

A start-up is a young company established to develop unique services and products, bring them to market, and make them irreplaceable for customers (Zhang et al., 2021). Another definition suggests that start-up is an emerging term spreading through mainstream and popular academic descriptions of local economies based on digital knowledge and geographic technology (Cockayne, 2019). The e-commerce business is also the main need of the public in transacting during this pandemic, considering that people are afraid to shop directly, so purchases of some needs are made online through e-commerce platforms. In addition to the established national business-commerce platforms, local e-commerce platforms also seek to meet basic needs. Young people in many cities have created local e-commerce platforms to help purchase goods from consumers to markets, including local youth on the island of Sumatra, especially in Palembang City (Lenda & Mahendra, 2021).

The proportion of many internet users in South Sumatra comes from Palembang. This shows that the city of Palembang has the potential for the development of digital entrepreneurship. Consumer preferences are related to purchasing decisions toward a product (Song et al., 2021). Consumer preferences are divided into three types of response elements: cognitive responses, affective responses, and conative responses or behavioral tendencies (Weinlich & Semerádová, 2022). A component of the cognitive response is the belief in the utilitarian (benefit) of a brand. Affective response refers to the degree of liking or support reflecting consumers' feelings toward the brand, and conative responses can predict or be close to the object (Zajonc & Markus, 2019). These three elements can determine how highly consumers prefer a product/brand.

Zaky et al. (2018) suggests that the number of start-ups in Indonesia reached 922 companies engaged in various fields. The island of Sumatra, especially South Sumatra, has potential in terms of market opportunities that can be seen through the number of Internet users. The number of start-ups in Palembang City reaches 40 start-ups with various types of businesses. It shows that there is great potential for the development of digital entrepreneurship in Palembang. Thus, it is interesting to discuss whether Palembang City has a good ecosystem for digital entrepreneurship.

Changchit et al. (2022) prove that one of the ways to find out the wants and needs of consumers is through the socio-demographic characteristics of consumers, in addition to environmental aspects such as culture, social class, communication processes, family, and others, all of which can influence consumer behavior. Consumers have different wants and needs, as seen from their social demographic characteristics (Kadoya & Khan, 2020;

Mladenović et al., 2021; Rybaczewska et al., 2020). Socio-demographic characteristics describe societal differences by age, gender, occupation, education, religion, ethnicity, income, family type, marital status, geographic location, and social class (Romadhon et al., 2021).

Sussan and Acs (2017) combined entrepreneurial institutions, agents, and digital infrastructure to understand entrepreneurship. Sahut et al. (2019) focused on the digital entrepreneurship ecosystem. Cavallo et al. (2019) and Richter et al. (2015) considered technology entrepreneurship from a client's perspective. Consumers strive for ease of use, fast responses, excellent quality, and affordable prices, i.e., they are looking for digital technologies. Thus, it becomes vital for businesses to be present in the online environment (Nambisan et al., 2019). The most widespread digital tools include, for example, smartphone applications that can benefit companies offering affordable prices, innovative approaches, high revenue, and competitive prospects (Remane et al., 2017; Urbinati et al., 2020).

To increase consumer growth, an efficient marketing strategy is needed. Derbani and Banani (2020) researched how to make an efficient marketing strategy using a collective intelligence approach. The study resulted in a conclusion that collective intelligence would transform the design of the elaboration trajectory in marketing strategies and work. Collective intelligence is defined as a group of people who combine their capacities and capabilities to solve various tasks and problems (Chikersal et al., 2017). Due to technological advances and the ease of internet access, new forms of collective intelligence are likely to come from the global community to individuals who use digital infrastructure by communicating information, exchanging information resources, and coordinating activities. Open communities, crowdsourcing, and collaborative filtering make collective intelligence able to produce new forms of digital ecosystems that encourage entrepreneurial innovation (Elia et al., 2020).

The Internet to market or promote products is an excellent strategy. This is because of the development of technology that is increasing yearly. Entrepreneurs implement a marketing system by using the Internet as a support to increase market-

ing turnover so that it is known by anyone globally and can be accessed by anyone anytime and anywhere. Social media are appropriate to be used as a promotional tool to increase the company's revenue or profit because it is easily accessible. The use of social media is also effective in becoming one of the marketing trends during the COVID-19 pandemic. They provide opportunities to create different purpose groups (e.g., social, political, or cultural) to benefit their members (Khobzi et al., 2019).

According to Thenmozhi and Sathya (2022), demographic characteristics such as age, income, gender, marital status, and education are related to consumer desires. Demographics can be used as a market measure in planning marketing strategies. Traditional buying behavior models depend on cultural, social, personal, and psychological factors (Ajayi et al., 2021; Hasbi et al., 2020). Marketing research uses demographic analysis to design products and establish appropriate market segments. Market segmentation is the process of dividing a market that initially behaved heterogeneously into several market groups that are now behaving more uniformly, or it can also be said to be a process of grouping the parts of the market that behave the same from the overall uniform market behavior. In general, market segmentation aims to obtain a part of the market with a more uniform character and behavior.

Fekete-Farkas et al. (2021) stated that social theory helps identify social factors that can improve collective action and a better social image for service-providing organizations. Age and income, age and frequency of use, education, and gender, as well as occupation and gender of users of the original digital product of Pontianak City, correlate with relationships that affect each other so that the potential to group customer segmentation is based on these categories (Pebrianti, 2020).

Therefore, this study aims to determine the effect of sociodemographic on consumer decisions, specifically focusing on digital entrepreneurship, especially in the case of digital start-ups in Palembang, Indonesia. However, this study focuses solely on investigating the impact of age, education, consumers' income levels, marital status, type of work, and gender on consumers' decisions regarding digital entrepreneurship or start-ups.

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2. METHODS

The study uses a logistic regression model to determine the factors that influence the use of digital entrepreneurship in Palembang City, Indonesia. The paper employed a stratified random sampling method. Data collection was conducted using an online questionnaire. The variables used in this study were gender, education, job, age, income, and marital status. The logit model is a non-linear regression model that produces an equation in which the dependent variable is categorical. The most basic categories of the model produce binary values, such as the numbers 0 and 1. The resulting number represents a certain catalyzing resulting from calculating the probability of occurrence of that category (Gujarati & Porter, 2009).

Logistic regression is one of the multivariate analysis methods for analyzing the relationship of one binary outcome variable with one or more free variables where the parameter used to assess the relationship is the Odd Ratio (OR). In logistic regression, binary outcome variables are transformed using logit so that the relationship between variable Y and the dependent variable $\left(X_i \right)$) can be expressed in the regression equation model as follows:

$$\log Odd = \alpha + \beta_i X_i, \tag{1}$$

$$Odd = \exp\left(\alpha + \beta_i X_i\right). \tag{2}$$

The *Odd* Ratio calculation of one of the predictor variables is carried out using a logistic regression model. There are six predictor variables, namely gender, education, job, age, income, and marital status. The Odd Ratio in this study is a group of start-up users with non-start-up users. A variable is stated to increase the influence on start-up usage when the OR value > 1, reduce the influence on start-up use when the OR value < 1, and there is no relationship when the OR value = 1. Using the logistic regression model, the general equations used in this study are written as follows:

$$Li = \beta_1 + \beta_2 Sex_i + \beta_3 Education_i + \\ +\beta_4 Job_i + \beta_5 Age_i + \beta_6 Income_i + \\ +\beta_7 Maritalstatus_i + u_1. \tag{3}$$

To achieve the research objectives, the selection of the best logistic regression model was carried out.

The steps to choosing the best logistic regression model are as follows. First, the paper tests the feasibility of the logistic regression model by analyzing all the possibilities that can be formed from independent to dependent variables. Second, it formulates an estimate of the logit model by determining dependent variables by looking at the research problem. The dependent variable used in this study is start-up users. Logistic regression in this study reveals that the dependent variable is binary, categorized into two groups. A value of 1 indicates that the respondent is a start-up user, while a value of 0 indicates that the respondent is not a start-up user.

3. RESULTS

The sample consists of 400 respondents meeting the research criteria. Descriptive statistical analysis is needed to produce a picture related to research variables. The data collection period is from May 2022 until July 2022. Table 1 shows the statistical picture of respondents. 54.50% of respondents stated they were local start-up users in Palembang City, and 45.50% were not in Palembang City, Indonesia. Most respondents are students, female, and have an undergraduate education.

Table 1. Characteristics of respondents

Variables		Definition	All Respondent	
			Frequency	**Percent**
User/ non-user	1	User	218	54.50
	0	Non-user	182	45.50
Gender	1	Men	163	40.75
	0	Women	237	59.25
Job	0	Civil servant/BUMN employee	166	41.50
	1	Student	177	44.25
	2	Entrepreneur	14	3.50
	3	Other	43	10.75
Education	0	Bachelor	260	65.00
	1	Other	140	35.00

Table 2 shows the distribution of users and non-users of Palembang start-ups based on gender, occupation, and marital status. Overall, users and non-users of start-ups are dominated by women, but the distribution of women and men who are start-up users is as follows: women – 56.54%, and men – 51.53%. Based on the type of work of start-up users, 61.58% are students, 78.57% are en-

Table 2. Distribution of users and non-users of Palembang start-ups

Variables	Definition		Non-User		User	
			Frequency	Percent	Frequency	Percent
Gender	1	Men	79	48.47	84	51.53
	0	Women	103	43.46	134	56.54
Job	0	Civil servant/BUMN employee	90	54.22	76	45.78
	1	Student	68	38.42	109	61.58
	2	Entrepreneur	3	21.43	11	78.57
	3	Other	21	48.84	22	51.16
Marital status	0	Married	84	52.83	75	47.17
	1	Other	98	40.66	143	59.34

trepreneurs, and 51.16% are others, while among non-start-up users, the majority are civil servants (54.22%). Finally, for marital status, the most start-up users belonged to other status (59.34%), and most non-start-up users, 52.83%, are married.

To see the direct influence of the risk factors of numerical variables, a t-test is used. Table 3 shows that the influence of the age variable on start-up usage obtained a p-value of 0.0001, which means that age is included as a candidate variable to be analyzed in the logistic regression model. The test results of the effect of the income variable on start-up usage obtained a p-value of 0.6113, which means that income is not included as a candidate variable in the logistic regression model.

Table 3. Uji t-test

Variables	t-test	Prob.
Age	4.0585	0.0001
Income	−0.5086	0.6113

To see the direct influence of the risk factors of categorical variables, a chi-square test is used. Table 4 shows that gender obtained a p-value of 0.323, which means that it is not included as a candidate variable to be analyzed in the logistic regression model. The job variable obtained a p-value of 0.007, which means that it is included as a candidate variable. Based on the results of testing the marital status variable, a p-value of 0.017 was obtained, which means that marital status is included as a candidate variable to be analyzed in the logistic regression model.

Table 4. Chi-square test

Variables	Pearson chi2	Prob.
Gender	0.9761	0.323
Job	12.1308	0.007
Marital status	5.7182	0.017

Based on Table 5, the estimated results show that age significantly affects the use of start-ups ($Y = 1$) with a p-value = 0.000. Job has a p-value of 0.027, education has a p-value of 0.020, and income has a p-value of 0.001. By assessing the variance value of the sample, the risk factor that has the greatest effect on start-up usage is income because it has the largest z statistics of 3.38. With a Pseudo R2 value of 0.073, the influence of five independent variables included in the logistic regression equation on start-up usage is 7%.

Table 5. Logistics estimation results

Variables	Coeff	Std.Err	z	P>|z|
Age	−0.551934	0.0138228	−3.78	0.000
Gender	−0.1748053	0.1849727	−0.79	0.428
Job				
1	0.1396215	0.3974533	0.4	0.686
2	1.556113	3.326763	2.22	0.027
3	0.1811965	0.4746692	0.46	0.647
Education	0.5720302	0.4356446	2.33	0.020
Marital status	0.607016	0.3875485	0.17	0.868
Log(income)	0.8274541	0.5594758	3.38	0.001

Table 6. Odds ratio results

Variables	Odds Ratio
Age	0.9463021
Gender	0.8396205
Job	
1	1.149839
2	4.740359
3	1.198651
Education	1.771861
Marital Status	1.062582
Log(income)	2.287488

The odd value ratio (Table 6) of the largest current variable income ($Y = 1$) is 2.28, which means that the high amount of a person's income will increase the use of start-ups by 2.28 times compared to those with smaller income. Furthermore,

the older age of respondents will reduce the use of start-ups by 0.83; the younger age will increase the use of start-ups by 0.83. Furthermore, the job variable will increase the use of start-ups by 4.74 times. Education will increase the use of start-ups by 1.77.

4. DISCUSSION

The results show that the income of consumers influences consumer decisions toward digital entrepreneurship. Residents with high incomes dominate consumer opportunities in Palembang City. The higher a person's income, the greater the probability of someone consuming local start-up products or services. Consumers with high incomes consider themselves to be innovators, i.e., people who dare to take risks to try products or services resulting from innovations, while low-income consumers tend to adapt slowly; consumers do not mind trying innovations if it does not conflict with their traditions (Dunska et al., 2018). It is also reinforced by the results of Kuswati and Irmawati (2018), who found that high-income consumers want to own or consume innovative goods and services. High income also means that the financial risks faced when trying innovations are smaller because the costs used are only a tiny part of the household's disposable income. Thenmozhi and Sathya (2022) also have the same finding that there are differences in online shopping attitudes among the residents belonging to different income group.

It was also found that age significantly affects consumer decisions toward digital entrepreneurship. The older the population, the less probability of using local start-ups or digital entrepreneurship. Islam et al. (2022) showed that age affects consumer decisions on retail product use. Residents of Palembang City who are included in the Generation Y category (with birth years between 1977–1994) are the oldest consumer categories that are considered the most tolerant. According to Ahmad and Hollebeek (2021), Dabija et al. (2018), and Nathan et al. (2020), business managers must consider their clients' age and gender to satisfy their wants and needs. The older the person, the more reluctant he is about innovations than younger gen-

erations. Haji and Stock (2021) concluded that family, friends, and social media affect younger consumers' decision-making.

Local start-up founders can consider the wants and need that suit Generation Z (year of birth between 1995–2010). This generation can plan product and service innovations and marketing techniques that adapt to the styles and trends of this generation. The study found that young consumers have different consumption patterns compared to older generations. This aligns with Alrawad et al. (2023) and Kumar and Kumar (2019). The paper also noted that older populations prefer shopping offline than online. These results contradict Ali et al. (2019), who found that age did not affect consumer decisions and purchase behavior.

The type of job that has a significant effect on the use of local start-ups is entrepreneurs. Residents of Palembang City who work as entrepreneurs are more interested in consuming local start-up products and services. Many reasons stimulate entrepreneurs to choose local start-up products or services. First, these products and services are following the supporting needs of the businesses. Second, this profession is believed to be more responsive to advances in information technology and understand more about the ethics of appreciating innovation. It is one of the many personal factors influencing consumers' decisions to buy a product or service. The type of job associated with education and income can reflect a person's lifestyle, which means it can be used to evaluate or define individuals so that start-up founders can know the wants and needs of consumers and then can set the proper sales strategy (Chowdhury, 2019). However, this is not in line with Chen et al. (2020) findings that there is no significant difference in attitudes toward online shopping among work groups and that previous purchases are the most critical factor in online purchasing decisions.

The use of local start-ups is also influenced by education. A person with higher education is usually associated with being more knowledgeable and having excellent financial condition, so they are readily receptive to the innovations brought by start-ups. Hossain et al. (2022) and

Zhou et al. (2021) demonstrated that consumers with higher education have a positive correlation with consumers' desire to adopt e-shopping. Carthy et al. (2020) found evidence that areas populated by highly educated people, married people, mortgage holders, and retirees are the most active in consumer search. In contrast, areas populated by older adults, farmers, low-skilled workers, and students have a much lower number of consumer searches. However, it is different from the findings of Muthupriya (2019) that there is no significant relationship between consumer education and online shopping attitudes.

CONCLUSION

This study aims to identify the factors that determine users' interest in digital entrepreneurship, especially socio-demographic variables. This study provides several results. First, 54.50% of respondents who consume products and services of local start-ups are students, female, and have a bachelor's degree. Second, the empirical findings show that age, education, and income significantly affect digital entrepreneurship in Palembang City, Indonesia. The higher people's income, the younger people's age, and the higher their education, the more likely they are to use digital entrepreneurship. Digital business actors can consider the range of consumers with the products and services offered, whether in terms of price, quality, uniqueness, or convenience.

To avoid discrimination between high- and low-income consumers, old and young generations, and high- and low-educated consumers, businesses can apply several strategies that other business actors have carried out. First, they can offer strategies to buy more and get promotions or discounts for purchases of a certain amount. Second, they should sell products and services with specific editions currently viral among the younger or older generations. Third, it is vital to provide special promotions for certain professions, such as entrepreneurs, employees, and students.

AUTHOR CONTRIBUTIONS

Conceptualization: Azwardi, Alghifari Mahdi Igamo.
Data curation: Sri Andaiyani, Alghifari Mahdi Igamo.
Formal analysis: Azwardi, Sri Andaiyani, Alghifari Mahdi Igamo.
Funding acquisition: Azwardi.
Investigation: Azwardi.
Methodology: Azwardi, Sri Andaiyani, Alghifari Mahdi Igamo.
Project administration: Alghifari Mahdi Igamo.
Resources: Alghifari Mahdi Igamo.
Software: Sri Andaiyani.
Supervision: Azwardi, Sri Andaiyani.
Validation: Azwardi.
Visualization: Sri Andaiyani, Alghifari Mahdi Igamo.
Writing – original draft: Sri Andaiyani.
Writing – review & editing: Azwardi.

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