



## *The Role of E-Commerce Use, Capital Availability and Business Training on Performance of Small Medium Enterprise (SMEs) in Indonesia*

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### **Abstract**

*This study aims to determine whether the simultaneous use of finance, business training, and e-commerce has a favorable and significant impact on microbusiness revenue. Multiple linear regression is being used in this quantitative research approach. The people who participate in microbusinesses and have received business training make up the population of this study. Purposive sampling, a non-probability sample technique, and a total of 100 respondents make up the approach employed in this study. The questions for this study were made available and directly completed by respondents using Google Forms. The Likert scale was employed by the author as a measurement in this study. The usage of e-commerce has a good and considerable impact on microbusiness income, according to the research findings. Microbusiness income is significantly and favorably impacted by capital. Microbusiness income is significantly and favorably affected by enterprise training. Microbusiness revenue benefits significantly and positively from the usage of e-commerce, financing, and business training all at once. 52% of microbusiness income is impacted by the usage of e-commerce, financing, and enterprise training. The other 48%, meanwhile, was affected by things unrelated to this study.*

*Keyword: Business Income, Business Training, Capital, E-Commerce*

### **1. INTRODUCTION**

MSMEs, or micro, small, and medium-sized businesses, play a significant part in the Indonesian economy. The majority of small and medium-sized enterprises are microbusinesses. Because they may bridge the income gap between business actors, fight poverty, and employ workers, microbusinesses can be considered the foundation of the economy [1]. When a crisis strikes, microbusinesses are able to preserve the resilience of the national economy while also having a positive impact on the local economy. A recession was experienced in Indonesia's economy as a result of the 1997–98 global financial crisis. At that time, many businesses experienced losses and had to lay off their employees. This causes the unemployment rate to increase drastically. Under such conditions, only the MSME sector, especially microbusinesses, can still survive. Microbusinesses can survive the storm of crisis because they produce goods and services with low demand elasticity and do not use capital from banks. This phenomenon explains that microbusinesses are productive businesses to develop because they can support micro and macroeconomic growth in Indonesia and influence other sectors that can develop [2].

MSMEs have several potential strengths that are a mainstay that will form the basis of development in the future, namely: When providing employment opportunities, the role of small industries in absorbing labor should be taken into account, estimating or absorbing up to 50% of the available workforce. Sources of new entrepreneurship: the existence of small and medium businesses has been proven to support the growth and development of new entrepreneurship. Having a unique market segment and implementing simple and flexible management to adapt to market changes [3]. Utilizing the surrounding natural resources, small industries mostly utilize waste or results from large industries or other industries. Has the potential to develop. The numerous development initiatives demonstrated the potential for small industries to grow and expand into related industries. Two aspects make up weaknesses, which frequently turn into barriers and issues for

microbusinesses: Internal considerations, which are typical issues for microbusinesses, include the human resource capacity limitations [4]. The limitations on product marketing are brought on by microentrepreneurs' inability to access marketing services, particularly market networks and information. Customers frequently lack confidence in the caliber of microbusiness items. Due to the fact that the majority of microbusinesses use only modest quantities of their own capital, business capital limits exist. For the creators and managers of MSMEs, external variables can be a concern. For example, the solutions provided are not on target, and there is no monitoring or overlapping programs [5].

Microbusinesses are the business scale that has the largest number when compared to other business scales. There were 64.6 million microbusiness units, or 98.68%, in 2019. With this high number, microbusinesses have a contribution to make in terms of employment. In 2019, microbusinesses were able to absorb 109.8 million, or 89.04%, of the total workforce. This means microbusinesses play a big role in the Indonesian economy. The great potential possessed by microenterprises is able to drive economic activities and become a source of income for the majority of society. MSMEs, especially microbusinesses, play an important role in the Indonesian economy [6]. One province that relies heavily on MSMEs to support its economy is West Java Province. 90% of West Java's economy comes from MSMEs. Meanwhile, when compared with Banten Province, MSMEs only have a contribution of 50% to Banten's economy. The significant contribution that MSMEs made to the creation of the economy through the MSME sector and creative industries is further evidence of their contribution to the economy. In 2019, MSMEs contributed 80% to GDP. Today's business competitiveness is increasingly developing due to the influence of increasingly advanced technology. Technological developments in the field of information and communication have changed the behavior of the business world. In the millennial era, society cannot be separated by the internet. The use of the internet has changed concepts and business models, especially in producing, promoting, and distributing products [7]. The existence of the internet can help people receive the products they need more easily and quickly. Factors that influence MSME income, namely: Capital: Every business requires capital, which is used for business operations with the aim of obtaining maximum profits. Market conditions are related to market conditions, type of market, group of buyers in that market, place of trading, frequency of buyers, and tastes of buyers in that market. The ability of the trader, namely whether or not a trader is able to influence buyers to buy their merchandise and get the expected income. The condition of business organizations is that the bigger the business, the higher the frequency of sales, so the profits will be greater. Other factors, such as advertising, quality, branding, product packaging, and service, can affect seller income [8].

In Indonesia, there will be 203 million internet users by 2021. Every year, there are more people in Indonesia using the internet. This is demonstrated by a rise of 27 million, or 11%, from 2020. 74% of Indonesians used the internet in that same year. West Java Province had 35 million internet users in 2020, the highest figure in all of Indonesia. With 27 million inhabitants, Central Java comes in second, while East Java, with 26 million, comes in third. This will be directly proportional to the rise in online-related economic activities given the high number of internet users in West Java. The large population of internet users may entice consumers and corporate players to do transactions online. Electronic commerce, or e-commerce, is the term used to describe businesses that use online media. Producers, sellers, buyers, couriers or intermediates, and Internet Service Providers (ISP) are all involved in the process of e-commerce [9]. Business people are currently using e-commerce more and more frequently to make transactions for buying and selling simpler. E-commerce is currently protected under Law Number 7 of 2014 regarding trade. In addition, Government Regulation Number 80 of 2019 supports Law Number 7 of 2014 and governs trade using electronic systems. Traders will employ electronic processes where they do transactions using electronic technologies. Thus, business actors can use e-commerce without doubt because there is already a legal umbrella. In 2021, around 14 million MSMEs will use digital platforms. When compared to the number of MSMEs as a whole, only around 23% of MSMEs use e-commerce to sell their products. The government targets that by 2024, as many as 30 million MSMEs will use digital platforms. Business actors can immediately transform into the digital realm to achieve this target [10].

Business actors who use e-commerce are still focused on big cities. West Java is the province that has the largest number of business actors using e-commerce nationally. The growth in the value of e-commerce transactions in West Java is also the largest nationally. According to a BPS survey, the main challenge facing business actors who use e-commerce is the level of market demand for goods and services. The second obstacle experienced is capital problems. Capital is a problem that hinders business development. The lack of skilled workers is the third problem for e-commerce business actors. Business actors do not yet have skilled workers to control and develop their e-commerce [11]. Many MSMEs, especially micro businesses, still have difficulty accessing financing. In general, microbusinesses use personal capital that comes from savings and do not have access to capital from banks. According to Bank Indonesia, 70% of MSMEs do not have bank credit, and only 6.1% have loans from fintech and other non-bank financial institutions. Many microbusiness actors have creative and innovative ideas for their businesses but cannot realize them due to limited capital. Constraints related to capital financing make it difficult for microbusinesses to obtain financial support and hinder microbusiness actors from expanding their businesses. The Ministry of Communication and Information noted

that 11% of MSMEs that have entered the world of e-commerce face capital constraints. This is a problem that has not been resolved until now, so it can hinder microbusiness actors from developing their businesses [12].

Social media, e-commerce, and websites are examples of digital technology that MSMEs frequently use. One strategy to facilitate the sales process, particularly for MSMEs, is to implement e-commerce. E-commerce has advantages for business owners in terms of boosting productivity, cutting inventory costs, boosting sales, improving customer relations, breaking into new markets, and eventually generating profits. E-commerce can help performance gains in two different ways: first, by expanding the client base for purchase; and second, by lowering costs (by saving on gasoline, storage, transportation, or personal expenses). Training can be seen as a company that is run to enhance a person's performance on the job at a job that is relevant to the work for which they are responsible [13]. Aspects of skills and abilities become a benchmark for employees when participating in training. Training is an integrated step towards improving actual work that is based on developing skills, knowledge, and abilities. Training is defined as steps that are arranged in a planned and systematic manner to develop or improve a person's skills, knowledge, and attitudes in accordance with the needs of the organization. The purpose of training can be used in the hope that someone will become competent and be able to do much higher-quality work so as to produce better output [14].

Business actors also face difficulties with skilled workers. The lack of skilled workers who are able to operate technology can hinder the running of a business. Apart from that, skilled labor is also needed in a business to be able to provide new ideas and innovations in order to increase competitiveness. Therefore, business training is crucial for business owners and their staff if they want to maximize the usage of e-commerce and sales outcomes. E-commerce is frequently utilized in company as a tool for marketing strategies, particularly while doing sales operations. E-commerce business players face challenges due to a lack of skilled workers and business capital [15]. The fact that these challenges exist may hinder sales efforts. Since sales activities will be the main source of income for business actors, they are the primary objective. When sales take place, there will be a flow of products out of business actors, and customers will pay money. Numerous earlier investigations provide support for this findings. The findings indicate that e-commerce significantly affects how much MSMEs in the semiconductor business in Bireuen Regency earn [16]. According to additional study, business capital increases MSME revenue. Furthermore, prior studies indicate a favorable and considerable impact on MSME revenue from the business training programs offered by the Kupang City administration.

## **2. MATERIALS AND METHOD**

This research started with problem identification, then researcher conducted a literature review to find and explore relevant and update journal to support the research. Researcher conducted a survey to respondents, did some analysis, processed the data and made a conclusion regarding the result of processed data. The study's participants are microbusiness owners who conduct online sales of their goods and have taken business courses. Multiple linear regression is a quantitative research technique used in this study. Microbusiness actors who use e-commerce and have received business training make up the population of this study. The non-probability sampling technique utilized in this study is the purposive sampling method. Non-probability sampling is a strategy that does not provide every component or person in the population an equal chance to be chosen as a sample. Due of the size of the population and the researcher's time constraints, this technique is employed. The practice of selecting samples with specific criteria is known as purposeful sampling. 100 respondents are needed for the research sample. Through the distribution of and direct response to questionnaires, this study collected primary data.

Researchers' questions were included in questionnaires that were disseminated via Google Forms. Secondary data for this study was gathered from publications including journals, books, articles, and websites that deal with the subject of the study. To measure observed natural and social phenomena, one uses a research instrument. To gather data for the research, researchers may use observational methods, fieldwork, and library research. This study's methodology makes use of a Google Forms-distributed questionnaire that microbusiness participants in Bandung City will complete. The data will be used to characterize the completed questionnaire in order to identify the influences of the various variables. The Likert scale was utilized as a measurement tool in this study by the author. To determine if a questionnaire is legitimate or not, validity testing is done. If the statements or questions in a questionnaire reveal something you wish to assess and are appropriate for usage, the questionnaire is said to be valid. A questionnaire that is a measure of a variable is subjected to reliability testing. In this study, quantitative data analysis was employed as a method of data analysis. The process of grouping data based on variables and respondent types, tabulating data based on variables from all respondents, presenting data for each variable under study, performing calculations to address the formulation of the problem, and performing calculations to test hypotheses that have been put forth after data from all respondents has been collected is known as quantitative data analysis. In this study, multiple linear regression utilizing the Ordinary Least Squares (OLS) approach was used as the analytical tool for the quantitative data analysis. To ascertain if the independent variable affects the dependent variable, multiple linear regression is performed.

### 3. RESULTS AND DISCUSSION

The responders to this study are described in the paragraphs that follow. Female respondents outnumber male responders, as can be shown. In contrast to the 48 male respondents, there were 52 female responders. If we look at age, the majority of respondents in this study were 21–25 years old, namely 26 people. However, there were also respondents who were less than 20 years old, although there were only 2 of them. Then, if we look at the length of business they have been running, there are 41 respondents who have been running their business for 2 to 5 years. Meanwhile, only eight respondents had been running their businesses for more than 10 years. The majority of microbusiness actors in this study used personal capital, namely 91 respondents. Meanwhile, 7 respondents used capital from bank loans, and 2 other respondents used capital from cooperative loans. Meanwhile, the amount of capital used is quite varied, but most businesses use less than IDR 2 million, namely 28 respondents. Of the 54 fashion and accessories business actors, 25 have used e-commerce for less than two years, and 4 have used e-commerce for more than five years. Furthermore, of the 20 culinary business actors, nine have used e-commerce for less than two years, and there are no business actors who have used e-commerce for more than five years. Then, of the 4 home improvement businesses, 2 have used e-commerce for less than two years, and 1 has used e-commerce for more than five years. Then, of the 3 business actors in the service sector, 2 businesses have used e-commerce for less than two years, and 2 businesses have used e-commerce for 2-3 years. Meanwhile, of the 3 beauty business actors, 2 businesses have used e-commerce for less than two years, and 2 businesses have used e-commerce for 2-3 years.

The majority of fashion and accessory enterprises, or 18, had monthly turnovers ranging from IDR 16,000,000 to IDR 25,000,000. The majority of the culinary enterprises, or 8, have an average monthly turnover of less than IDR 4,000,000. Two home improvement companies have a combined average monthly revenue of less than IDR 4,000,000, and the other two have a monthly revenue range between IDR 4,000,000 and IDR 8,000,000. Additionally, the average monthly revenue of business actors in the service sector is between IDR 16,000,000 and IDR 25,000,000, with a maximum of 2 businesses. In contrast, the average monthly turnover for enterprises in the beauty industry ranges from less than IDR 4,000,000 to IDR 16,000,000. 16 enterprises, or the majority, are in the fashion and accessory industry and have capital between IDR 2,000,000 and IDR 4,000,000. Most culinary businesses, or 8 businesses, use capital of less than IDR 2,000,000. Most home improvement businesses or two businesses use capital of less than IDR 2,000,000. Business actors in the service sector use fairly even capital, starting from IDR 2,000,000 to more than IDR 6,000,000. Most beauty businesses or two businesses use capital of less than IDR 2,000,000. Most of the microbusiness actors who were respondents to this research used the Shopee e-commerce platform to carry out transactions. Apart from that, the e-commerce platform that is least used is Bukalapak, with only 5 business actors. The other e-commerce sites in question are Website, Go Food, Grab Food, Shopee Food, and Zalora. The majority of microbusiness actors use e-commerce for the reasons that it makes it easier to reach potential consumers and to make buying and selling transactions easier. The reason most frequently chosen by microbusiness respondents was to facilitate the dissemination of information. The business training that many microbusiness actors participate in is training that studies digital marketing. Apart from that, microbusiness actors have also attended training regarding production operations, finance and financing, business aspects, and human resource management. However, the number is not as large as digital marketing training.

The e-commerce usage variable yields a t-count and t-table of 2.6 and 1.7, respectively. This demonstrates that the probability is  $0.010 < 0.05$  and the t-count value is  $2.6 > t\text{-table } 1.7$ . The variable usage of e-commerce has a positive and considerable impact on microbusiness income, as may be inferred from the conclusion that  $H_0$  is rejected and  $H_a$  is accepted. The capital variable generates a t-count and t-table of 4.4 and 1.7, respectively. This demonstrates that  $t\text{-count} = 4.4 > t\text{-table} = 1.7$ . This means that the capital variable has a positive and considerable impact on microbusiness income and that  $H_0$  is rejected and  $H_a$  is approved. T-count and t-table results from the business training variable are 4.8 and 1.7, respectively. This demonstrates that  $t\text{-count} = 4.8 > t\text{-table} = 1.7$ . This means that the business training variable has a positive and considerable impact on microbusiness income and that  $H_0$  is rejected and  $H_a$  is accepted as the correct answer. f-count was 36.5,  $> f\text{-table } 2.7$ , and probability 0.000, alpha 0.05 were obtained. The variables employing e-commerce, capital, and business training all concurrently have a positive and considerable impact on microbusiness revenue, as may be inferred from the conclusion that  $H_0$  is rejected and  $H_a$  is accepted. The  $R^2$  coefficient is equal to 0.5 and is changed to be equal to 0.52. Because multiple regression is being employed in this study, the modified  $R^2$  value is being used. Therefore, it can be inferred that the utilization of e-commerce (X1), money (X2), and business training (X3) affect 52% of microbusiness income (Y). While other factors that were not looked at in this study had an impact on the remaining 48%.

#### 3.1 The Effect of Using E-Commerce on Micro Business Income

The number of internet users in Indonesia is growing annually, which has an effect on some economic factors. Virtual mobilization from offline to online shopping is increased by internet use. This forces the public and businesspeople to conduct online transactions for buying and selling goods and services, often known as e-commerce. E-commerce involves using the internet network by producers, entrepreneurs, customers, and

couriers. The findings of this study demonstrate that e-commerce usage in a company has a favorable and considerable impact on microbusiness income. This is evident from the t-test findings on the e-commerce usage variable, where the probability value of 0.010 is lower than the alpha value of 0.05 and the t-count of 2.64 is higher than the t-table. Because of the shifting of sales from offline to online, e-commerce can help businesses generate more revenue. Online sales can facilitate product marketing and broaden consumer reach. The findings of this study support earlier studies that found an impact of e-commerce on MSME revenue that was both positive and significant.

### **3.2 The Effect of Capital on Micro Business Income**

A sum of money or items used as a foundation for activity is known as capital. A corporation or company's capital is an essential component. Smaller amounts of capital are typically used by microbusinesses. Income from a business can be impacted by its capital size. According to the findings of this study, the capital utilised can significantly and favorably affect the revenue of microbusinesses. The capital variable's statistical t-test findings show that the t-count is 4.4, which is higher than the t-table, and the probability value of 0.000, which is lower than the alpha value of 0.05. The amount of capital employed will determine how much money the business makes. The findings of this study are consistent with earlier studies that discovered business capital had a positive and significant impact on MSMEs' income. In addition, additional studies have discovered a positive relationship between capital and MSMEs' income in Bantul Regency.

### **3.3 The Effect of Business Training on Micro Business Income**

The aim of business training is for business actors to obtain special knowledge to carry out work more quickly and efficiently and to develop knowledge so that work can be carried out rationally. Training is very important for business actors and employees to increase their creativity, skills, and knowledge in running and developing a business. The t-test for the business training variable produced statistical findings that showed that the t-count was 4.8, which was higher than the t-table of 1.7, and the probability value of 0.000 was lower than the alpha value of 0.05. These findings suggest that business training significantly and favorably affects microbusiness income. The secret to a company's human resources being of high caliber is business training. More entrepreneurial talents will be added to the human resources the more intensively microbusinesses are trained. The findings of this study are consistent with other studies, which found that training significantly increases MSME income.

## **4. CONCLUSION**

Microbusiness income is positively and significantly impacted by the use of e-commerce. Microbusiness income is positively and significantly impacted by capital. Microbusiness income is positively and significantly impacted by enterprise training. Microbusiness revenue is positively and significantly impacted by the simultaneous usage of e-commerce, financing, and business training. E-commerce, money, and business training all have a 52% impact on microbusiness income. While this study's findings had no bearing on the remaining 48%, other factors did. The ability to quickly adjust in the face of more complex technology changes is demanded of microbusiness operators. It is envisaged that company actors who have utilized e-commerce will be able to enhance their reach in order to boost customer reach and the volume of buying and selling transactions. Business actors are expected to participate in business training in order to advance both the caliber of their human resources and their entrepreneurial abilities. The government is supposed to regularly deliver business training and to keep an eye on participants. The type of training that might be offered includes courses on business digitization, company marketing, financial matters, etc. It is intended that this research would serve as a resource for authors of future studies to write more effective studies. Future researchers can broaden the study to include micro, small, and medium-sized enterprises in addition to microbusinesses.

## **REFERENCES**

- [1] Bosua, R., Evans, N., & Sawyer, J, "Social Networks, Social Media and Absorptive Capacity in Regional Small and Medium Enterprises (SMES) in Australia," *Australian and International Journal of Rural Education*, vol. 23, no. 1, pp. 117–134, 2003.
- [2] Firmansyah, D., & Husna, R, " THE INFLUENCE OF E-COMMERCE ON INCREASING INCOME OF MICRO SMALL AND MEDIUM ENTERPRISES (Case Study of Chips Business in Bireuen Regency)," *VARIASI : Majalah Ilmiah Universitas Almuslim*, vol. 13, no. 3, pp. 135–141, 2021.
- [3] Helmalia, & Afrinawati, " The Influence of E-Commerce on Increasing the Income of Micro, Small and Medium Enterprises in Padang City," *Jurnal Ekonomi Dan Bisnis Islam*, vol. 3, no. 2, pp. 237–246, 2018.

- [4] Rafli, R., Pitra, D. A. H., Hasni, D., Anggraini, D., Triola, S., Ashan, H., & Zefira, L. (2022). Radiotherapy Adverse Effects Management Training for Health Workers in Andalas University Hospital. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 5(7), 2043-2051.
- [5] Setiadi, B., Kraugusteeliana, K., Risdwiyanto, A., Bakri, A. A., & Arief, I. (2023). The Application of Delone and Mclean Framework to Analyze the Relationship Between Customer Satisfaction and User Experience of Mobile Application. *Jurnal Sistim Informasi Dan Teknologi*, 84-89.
- [6] Arief, I., Fahriati, A. R., & Kartikasari, N. (2022, August). Servqual scale to investigate patient satisfaction of pharmaceutical service at private dental hospital, Jakarta, Indonesia. In *BIC 2021: Proceedings of the 6th Batusangkar International Conference, BIC 2021, 11-12 October, 2021, Batusangkar-West Sumatra, Indonesia* (p. 453). European Alliance for Innovation.
- [7] Mohzana, M., Israwaty, I., Cindy Sandra Lumingkewas, S., Abdul Tahir, T., & Ilham Arief, A. (2023). The Effectiveness Analysis of Android Based E-Diagnostic Test Development Program to Identify Level of Student's Misconception. *Journal on Education*, 6(1), 1363-1368.
- [8] Achmad, D. S., Nurdin, M. S., Yasin, I. A., Indrianti, M. A., Mokoginta, M. M., Fahrullah, F., ... & Mokoolang, S. (2021). A preliminary study on the size structure and sex ratio of orange-spotted grouper (*Epinephelus coioides* Hamilton, 1822) harvested from Kwandang Bay, Sulawesi Sea, Indonesia. *Aceh Journal of Animal Science*, 6(2), 34-38.
- [9] Suparwata, D. O. (2018). The views of forest outskirts community on agroforestry development program. *Jurnal Penelitian Sosial dan Ekonomi Kehutanan*, 15(1), 47-62.
- [10] Suparwata, D. O., Indrianti, M. A., Mokoginta, M. M., & Mokoolang, S. (2022, November). Agroforestry Farming System: Measuring its Development in Financial Feasibility Aspects. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1104, No. 1, p. 012007). IOP Publishing.
- [11] Ervandi, M., Indrianti, M. A., Suparwata, D. O., Yasin, I. A., Gobel, Y. A., Mokoolang, S., & Mokoginta, M. M. (2021, April). Mechanical properties of whey composite edible film with the addition of clove essential oil and different types of plasticizer. In *Iop Conference Series: Earth and Environmental Science* (Vol. 755, No. 1, p. 012004). IOP Publishing.
- [12] Pramudito, D. (2021). The Moderation Effect of e-Trust and Big Data Quality in e-Grocery: An Empirical Research from Outside of Java Island. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(10), 6445-6459.
- [13] Pramudito, D. K., Mursitama, T., Abdinagoro, S. B., & Tanurahrjo, H. H. (2021). THE INFLUENCE OF BIG DATA RECOMMENDATION: AN APPROACH ON E-LOYALTY OF E-GROCERY BUSINESS. *Psychology and Education*, 58(2), 3550-3564.
- [14] Pramudito, D. K., Arijanti, S., Rukmana, A. Y., Oetomo, D. S., & Kraugusteeliana, K. (2023). The Implementation of End User Computing Satisfaction and Delone & Mclean Model to Analyze User Satisfaction of M. TIX Application. *Jurnal Informasi dan Teknologi*, 5(3), 7-12.
- [15] Ferdiansyah, H., Komaria, N., & Arief, I. (2023). The Application of Support Vector Machine Method to Analyze the Sentiments of Netizens on Social Media Regarding the Accessibility of Disabilities in Public Spaces. *Journal of Information System, Technology and Engineering*, 1(1), 6-10.
- [16] Polandos, P. M., Engka, D. S. ., & Tolosang, K. D. " Analysis of the Influence of Capital, Length of Business, and Number of Workers on the Income of Micro, Small and Medium Enterprises in East Langowan District," *Jurnal Berkala Ilmiah Efisiensi*, vol. 19, no. 4, pp. 36-47, 2019.