

Analysis of processed food export potential in Dumai City through digitalization: Student perspective

Nesa Suci Wulandari^{1*} Sausan Nurfadhilah² Rismawati³ Syarifah Nurul Azizah⁴ Hildawati⁵

^{1,2,3,4,5} Sekolah Tinggi Ilmu Administrasi Lancang Kuning, Dumai, 28826, Riau, Indonesia

Email

nesasuciwulandari01@gmail.com*, sausanfadhilah72845@gmail.com, rw445903@gmail.com,
syarifahurulazizah302@gmail.com, hildrias81@gmail.com

Received: August, 30, 2025 **Revised:** September, 30, 2025 **Accepted:** October, 31, 2025

Abstract

This study aims to analyze the export potential of processed food products from Dumai City by emphasizing the role of digitalization as an acceleration strategy for exports from the perspective of university students. Dumai City possesses significant potential in the processed food sector based on local marine and agricultural products; however, its ability to penetrate global markets remains suboptimal due to limited digital integration. Digitalization is considered a strategic solution to overcome MSME barriers, particularly in market access, promotional efficiency, and global competitiveness. Using a qualitative descriptive approach, data were collected from 80 student respondents through Likert-scale questionnaires and interviews. The results revealed that 85% of respondents agreed that digital platforms such as Shopee, Instagram, and TikTok could effectively expand international market reach for local processed food products. Additionally, 73% of students expressed readiness to contribute to digital promotion efforts, while 74% believed that internet infrastructure in Dumai is already adequate to support such initiatives. Despite these positive indicators, challenges remain, including digital skill gaps, perceptions of product competitiveness, and the need to enhance export quality standards. The study highlights the importance of synergy among government institutions, MSME actors, academia, and students in fostering a digital export ecosystem. Digitalization is viewed not merely as a tool but as a key strategy to sustainably connect local products with global markets. Therefore, comprehensive support in the form of training, infrastructure development, and policy reinforcement is essential to position Dumai as a competitive hub for processed food exports.

Keywords: digitalization, export, MSMEs, digital marketing, digital economy

DOI :
p-ISSN :
e-ISSN :

© Copyright: BDJ Smart : Breakthrough Development Journal in Strategic Management & Marketing (2025)
This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License. Site Using OJS 3 PKP Optimized.

1. Introduction

International trade serves as one of the main pillars supporting national economic growth, particularly in developing countries striving to enhance the competitiveness of their domestic production in global markets. Among the various forms of international trade, exports play a significant role in increasing Gross Domestic Product (GDP), creating employment opportunities, and generating foreign exchange reserves. In this context, export activities are not only a means to expand the reach of local products but also an important indicator of national or regional competitiveness in the midst of global competition, which has also accelerated the growth of non-cash payment systems both locally and globally, according to Bank Indonesia.

In the post-pandemic global economic landscape, international trade has undergone a substantial transformation (Hildawati, 2021). The Covid-19 pandemic accelerated the adoption of digital technology

across various sectors, including trade and exports. Digitalization has become a transformative force that reshapes traditional paradigms of export activities, especially for Micro, Small, and Medium Enterprises (MSMEs), which have long faced structural challenges such as limited market access, lack of information, and insufficient resources to penetrate export markets through conventional means (Judijanto et al., 2024). The development of digital technology enables wider and more efficient market access, allowing businesses to promote and sell products directly to international consumers without having to rely on lengthy and complex distribution chains (Hildawati, Haryani, et al., 2024).

Digital platforms such as international marketplaces (e.g., Amazon, Alibaba, Shopee International), social media (e.g., Instagram, Facebook, TikTok), and local e-commerce websites serve as strategic opportunities to introduce processed food products to global markets. The integration of digital marketing strategies enables local MSMEs, such as those in Dumai City, to expand their products internationally, enhance brand awareness, and build consumer trust across borders. Dumai City, located in the Riau Province, possesses great potential in the processed food industry based on marine and agricultural resources. However, the export potential of Dumai's processed food products has not been fully optimized due to the limited integration of local businesses into the global digital ecosystem. Therefore, digitalization becomes a crucial key to accelerating the export of Dumai's processed food products by improving MSME digital capacity, developing supporting digital infrastructure, and expanding access to international trading platforms.

The theoretical foundation underlying this study is David Ricardo's Theory of Comparative Advantage, which posits that trade occurs when countries have comparative advantages over one another. Comparative advantage arises when a country can produce goods or services more efficiently or at a lower opportunity cost than others. According to Astriana (2011), the law of comparative advantage states that trade can occur even between countries that lack absolute advantages in any commodity by specializing in products where their absolute disadvantage is smaller or where they hold a comparative advantage. This advantage can be observed through cost comparative advantage (labor efficiency) and production comparative advantage (labor productivity). The former suggests that countries benefit from trade when they specialize in producing and exporting goods they can produce more efficiently while importing those they produce less efficiently. The latter emphasizes productivity differences; countries gain from trade when they specialize in goods they produce more productively and import goods produced less productively.

According to Porter and Millar (1985), the Information Technology in Business Theory explains that information technology is not merely an administrative tool but a strategic factor that can create new value and competitive advantage. Information technology transforms how companies interact with customers, manage operations, and achieve efficiency across the value chain. In the context of processed food exports in Dumai, digitalization represents a practical application of this theory, enabling business actors to expand their market reach through export marketplaces, product websites, social media, and online logistics systems without the need for physical branches. The implementation of information systems also enhances operational efficiency, such as in inventory tracking, export order management, and product traceability, that is, key aspects in maintaining international food safety and certification standards.

In line with this, the Digitalization Theory provides a broader framework for understanding how digital integration reshapes economic and trade activities. As stated by Tapscott (1996), digitalization not only changes the way people work but also how they interact, create value, and execute business strategies. Brynjolfsson and McAfee (2014) further emphasize that digitalization enables information dissemination at higher speed and lower cost compared to conventional methods. For Dumai's MSMEs, this means the opportunity to market local processed food products globally through platforms such as Alibaba, Tokopedia International, Instagram Shop, or TikTok Shop (Chaffey, 2015). Moreover, Ryan and Jones (2009) highlight that digital marketing involves promoting products using digital technologies in an interactive and

measurable way, allowing Dumai's local products to gain faster and more engaging exposure in international markets.

From a human capital perspective, the Behavioral Intention Theory within the Theory of Planned Behavior (Ajzen, 1991) offers insights into how the younger generation, especially students, form intentions and readiness to support digitalized food exports. Behavioral intention is shaped by three main components: attitude toward behavior, subjective norms, and perceived behavioral control. If students perceive that participating in digital export activities brings positive economic and social benefits to their region (positive attitude), receive encouragement from peers, lecturers, and institutional policies (subjective norms), and believe they possess the digital skills and access needed to engage (perceived control), their intention to contribute will be stronger. Thus, students act not only as observers but as active agents in driving digital transformation within the export sector.

The integration of these three theoretical perspectives demonstrates that the success of Dumai's digitalized processed food exports depends not only on the availability of information technology infrastructure but also on the readiness of human resources, particularly digitally literate youth who have the knowledge, competence, and motivation to support transformation. Information technology serves as a strategic foundation, digitalization acts as a bridge to global markets, and behavioral intention drives social participation toward achieving sustainable and adaptive digital export growth.

Applying these theoretical perspectives to Dumai's processed food industry implies that the city can strengthen its export potential by specializing in high-quality, locally sourced food products that possess comparative advantages in terms of cost efficiency and productivity. Through digitalization, MSMEs in Dumai can enhance these advantages by leveraging technology to streamline production, reduce costs, and access broader international markets. This approach aligns with the global shift toward a digital economy, enabling local businesses to transform into competitive export actors.

Therefore, this study aims to analyze students' perceptions and behavioral intentions toward the potential of Dumai's processed food exports through digitalization and to examine how digitalization can act as a strategic accelerator to strengthen comparative advantages and enhance global competitiveness.

2. Research Design and Method

This study employs a descriptive-analytical qualitative approach to explore students' perspectives on the digitalization of processed food exports in Dumai City. This approach was chosen because it enables an in-depth understanding of motivations, challenges, and opportunities from the viewpoint of key actors (Bryman, 2016). The qualitative method allows for a comprehensive exploration of participants' experiences and perceptions regarding the role of digitalization in enhancing export potential.

Data were collected through interviews and questionnaires distributed to university students in Dumai City. The questionnaire was designed to capture students' perceptions of four main aspects: exports, digitalization, MSMEs, and processed food industries in Dumai. It consisted of 11 questions, each measured using a 7-point Likert scale ranging from 1 to 7. Respondents were asked to indicate their level of agreement with each statement, where 1 represents strong disagreement and 7 represents strong agreement. The Likert scale is widely used to measure attitudes, opinions, and perceptions toward social phenomena (Sugiyono, 2018:152).

The study adopted a combination of purposive sampling and snowball sampling techniques. Purposive sampling was used to select university students in Dumai who possess relevant knowledge and awareness of digitalization and MSME export activities. Subsequently, snowball sampling was applied to identify additional informants who could provide complementary insights. This sampling strategy aligns with Creswell's (2014) guidelines for qualitative research, which emphasize the importance of selecting participants who meet specific criteria related to the research objectives.

The research was conducted in Dumai City, focusing primarily on local universities and MSMEs engaged in processed food production. Data collection was carried out over the course of one month. The selection of university students as research subjects was based on their relevant academic background and familiarity with digital technologies that support the export of MSME food products in Dumai.

Following the views of Ardyan et al. (2023), Basiroen et al. (2024), and Hildawati, Lalu Suhirman, et al. (2024), the qualitative approach emphasizes understanding social phenomena from the participants' perspectives rather than through numerical analysis. Therefore, this descriptive qualitative method aims to analyze the dynamics of processed food exports, MSME development, and digitalization efforts.

Through this methodology, the study seeks to provide an in-depth understanding of how processed food MSMEs in Dumai can leverage digital technologies for export activities, while also offering valuable insights for developing sustainable digitalization strategies in the local MSME sector.

3. Results and Discussion

Statistical Result

The visual data below presents the survey results reflecting respondents' perceptions of the Export Potential of Processed Food Products in Dumai City through Digitalization. The pie chart illustrates the percentage distribution of agreement levels, ranging from "strongly agree" to "disagree." This analysis provides a clear overview of the overall sentiment among respondents, highlighting the majority's support while also acknowledging differing opinions.

The findings reveal that 35% of respondents agree that platforms such as Tokopedia International, Alibaba, Instagram Shop, and TikTok Shop can facilitate product promotion to international markets, reduce marketing costs, and increase MSME revenues. This high percentage indicates that students view digitalization as an effective solution for market expansion.

Data collection for this study was conducted within a relatively short period, starting from May 3, 2025, to May 25, 2025, with a total duration of 22 days. During this period, 80 respondents participated in the survey. Among them, 27 respondents (33.8%) selected "Agree" (score 6), and 16 respondents (20%) chose "Strongly Agree" (score 7), indicating strong support for the use of digitalization as a promotional tool for export products. Furthermore, 17 respondents (21.3%) chose "Somewhat Agree" (score 5), showing a generally positive attitude. Meanwhile, 12 respondents (15%) selected "Neutral" (score 4), possibly due to limited experience or insufficient information. On the other hand, 3 respondents (3.8%) chose "Somewhat Disagree" (score 3), 1 respondent (1.3%) selected "Disagree" (score 2), and another 1 respondent (1.3%) indicated "Strongly Disagree" (score 1), reflecting a small group that does not yet perceive the relevance or effectiveness of digitalization in supporting exports.

Respondents were drawn from various universities in Dumai City, with 13% coming from public universities and 88% from private institutions. They represented diverse study programs, including social sciences, law, and science and engineering. Regarding age distribution, 67% of respondents were aged 21–23 years, 30% were 18–20 years, and 3% were 24–26 years. In terms of gender, 77.5% were female and 22.5% were male. Based on academic level, 86% of respondents were in semesters 4–6, 6% in semesters 1–3, 5% in semesters 7–9, and 3% in semesters 10–12.

The significant number of respondents supporting digitalization aligns with the post-COVID-19 behavioral shift, where online shopping and digital platform usage have increased substantially. As digital natives, students have the potential to become key drivers of digital transformation in the MSME sector, including in promoting processed food exports.

The use of questionnaires proved to be an effective method for gathering insights regarding students' perceptions of digitalization, readiness, infrastructure challenges, and willingness to contribute to MSME development in Dumai City. Overall, the survey highlights that digitalization holds substantial potential to

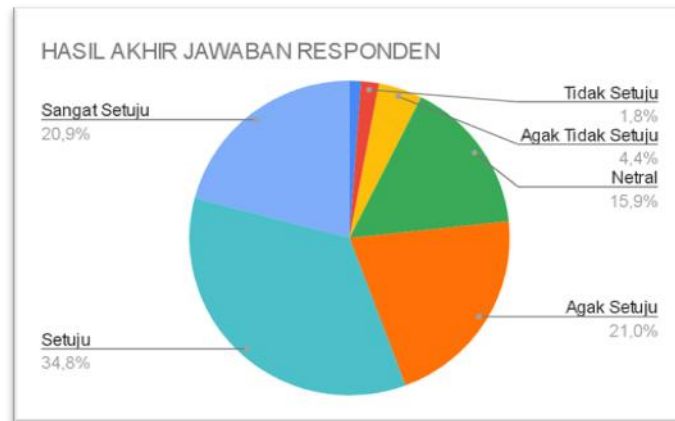


Figure 1. Percentage of Processed Food Export Potential in Dumai through Digitalization

Source: Student Survey, Dumai City (2025)

enhance the export of processed food products in Dumai, with students playing an essential role. However, several challenges, such as skill gaps, infrastructure limitations, and product competitiveness, must be addressed through collaboration among academia, entrepreneurs, and the government. If strategic steps are implemented, Dumai could emerge as a successful example of digital-based local economic development on a global scale.

Discussion

The distribution of the questionnaire served as an effective method for collecting data on exports, digitalization, MSMEs, and processed food industries in Dumai City. In this context, the questionnaire was used to measure students' readiness to contribute to the export of processed food products through digitalization.

Four main indicators were established: Perceived Benefits of Digitalization (TAM), Student Readiness (TPB), Barriers and Infrastructure (RBV), and Contribution Intention. These indicators provided a comprehensive understanding of students' preferences and perceptions toward digitalized food exports in Dumai City. The findings for each indicator are described below.

Perceived Benefits of Digitalization (TAM)

For the perceived benefits of digitalization indicator, the results show that the majority of respondents (85%) selected a score between 5 and 7, indicating agreement or strong agreement that digitalization, through platforms such as Shopee, Instagram, and TikTok, facilitates product promotion to international markets, reduces marketing costs, and increases MSME revenue.

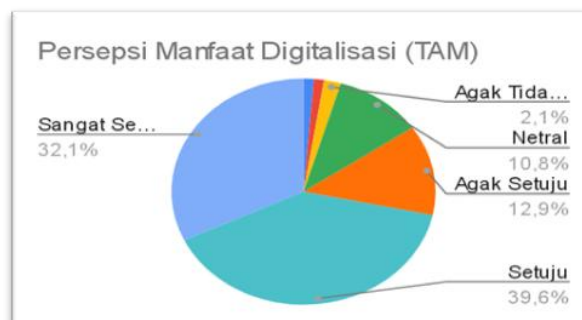


Figure 2. Percentage of Perceived Benefits of Digitalization (TAM)

Source: Student Survey, Dumai City (2025)

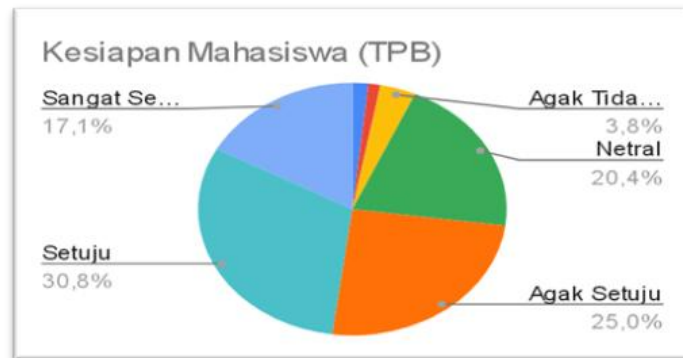


Figure 3. Percentage of Student Readiness (TPB)

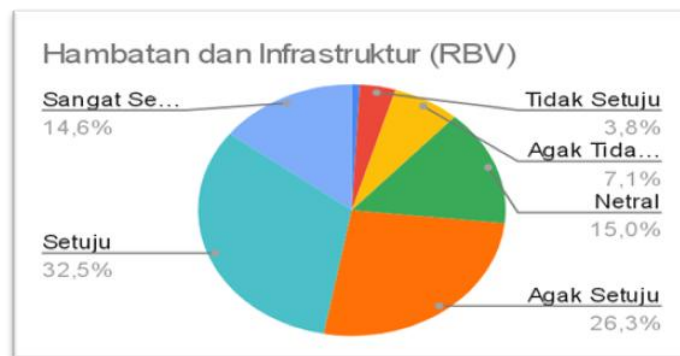


Figure 4. Percentage of Barriers and Infrastructure Level (RBV)

Source: Student Survey, Dumai City (2025)

However, about 4% of respondents chose scores between 1 and 3, reflecting disagreement with the idea that these platforms are effective for international promotion. This suggests that while most students recognize the advantages of digital tools, a small portion remains unconvinced or unfamiliar with their global potential.

Student Readiness (TPB)

The findings on student readiness indicate that most students feel prepared to engage in digital promotion. Approximately 73% of respondents rated 5–7, showing a positive level of readiness, while 20% remained neutral, and 4% disagreed (scores 1–3). This implies that training programs on digital-based export practices could enhance readiness, especially among those who were neutral or uncertain about their capabilities.

Barriers and infrastructure (RBV)

Based on the survey results regarding availability and accessibility, most respondents expressed optimism about internet infrastructure, with 74% selecting scores between 5 and 7. However, 15% of respondents chose a “neutral” response, indicating that challenges such as connectivity issues and competitiveness still exist. Meanwhile, 12% selected scores between 1 and 3, showing disagreement and reflecting limited satisfaction with current infrastructure conditions. These findings highlight the need for more equitable infrastructure development and improved product quality to support digital export growth effectively.

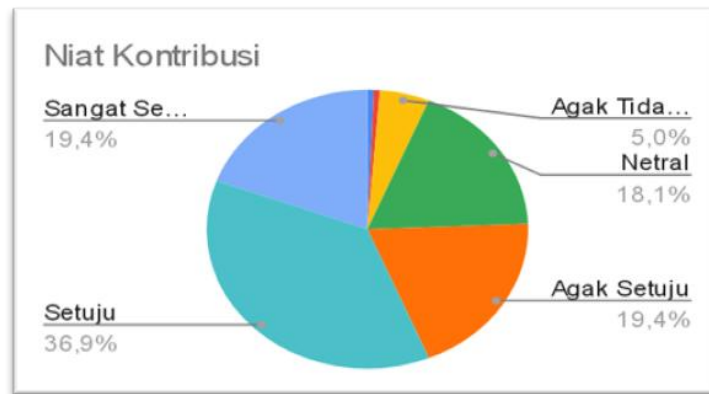


Figure 5. Percentage Level of Contribution Intention
Source: Student Survey, Dumai City (2025)

Contribution Intention

Based on the survey results, 75% of respondents selected scores between 5 and 7, indicating their willingness to assist MSMEs in marketing products digitally and recommending them to international networks. However, 7% of respondents selected scores between 1 and 3, showing lower levels of interest or readiness to contribute. The high level of contribution intention among students demonstrates significant potential for developing collaborative programs between universities and MSMEs, particularly in supporting digital export strategies.

This study provides a strong foundation for further research on the acceptance of processed food export potential through digitalization among students. Future research could broaden its scope by involving the wider community beyond students in Dumai City. Additionally, employing more diverse research methods, such as in-depth interviews or observations, could yield richer insights into digitalization-driven export development.

4. Conclusions

This study examined the export potential of Dumai's processed food products through digitalization from the perspective of university students, including insights into the use of QRIS among STIA Lancang Kuning students. The findings reveal that 85% of respondents believe digital platforms such as Shopee, Instagram, and TikTok can expand export markets by reducing marketing costs and increasing MSME income. About 73% of students feel digitally competent to support export promotion, though 20% remain neutral, that indicating the need for further digital training.

While 74% of respondents view Dumai's internet infrastructure as adequate, concerns about connectivity and product competitiveness persist. Enhancing product quality, packaging, and certification (e.g., halal, SNI, ISO) is essential for meeting global standards. Strengthened collaboration between universities, MSMEs, and government agencies is recommended to improve export readiness and digital marketing capabilities.

Overall, digitalization offers a strategic path to global market access and sustainable economic growth. With coordinated efforts among government, academia, businesses, and students, Dumai has the potential to emerge as a regional hub for digitally driven processed food exports, leveraging its local resources to build global competitiveness.

Reference

Serial/journal article (online with DOI):

- Afrizal, D., dkk. (2023). Factors influencing the intention of businesses actor to adopt online applications: An empirical evidence in Indonesia. *Golden Ratio of Marketing and Applied Psychology of Business*, 3(1). <https://doi.org/10.52970/grmapb.v3i1.212>
- Ardyan, E., dkk. (2023). *Metode Penelitian Kualitatif dan Kuantitatif* (Sonpedia Publishing, trans.).
- Ajzen, I. (1991). *The Theory of Planned Behavior*. Organizational Behavior and Human Decision Processes.
- Basiroen, V. J., dkk. (2024). *Metode Penelitian Kualitatif* (Efitra (ed.)). PT. Sonpedia Publishing Indonesia. www.buku.sonpedia.com
- Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. W.W. Norton & Company.
- Hasni. (2018). Daya Saing ekspor produk makanan olahan Indonesia ke Timur Tengah. *Buletin Ilmiah Litbang Perdagangan*, 12(2), 235–266.
- Hildawati. (2021). Pemulihan ekonomi nasional di masa pandemi covid-19 melalui trans-formasi strategi bisnis UMKM. *Jurnal Ekonomi Dan Statistik Indonesia*, 1(3). <https://doi.org/10.11594/jesi.01.03.03>
- Hildawati, dkk. (2024). *Literasi Digital*. www.greenpustaka.com
- Hildawati, dkk. (2024). *BUKU AJAR Metodologi Penelitian Kuantitatif & Aplikasi Pengolahan Analisa Data Statistik* (Efitra (ed.)). PT. Sonpedia Publishing Indonesia. www.buku.sonpedia.com
- Judijanto, L., dkk. (2024). Peran Kepercayaan dalam memediasi pengaruh harga dan kualitas produk terhadap niat beli ulang di e-commerce C2C Indonesia. 3(01), 33–47. <https://doi.org/10.58812/smb.v3i01>
- Kresnawati, M. A., & Rasyidah, R. (2021). Meningkatkan Pemanfaatan pasar digital untuk ekspor produk UMKM di Jawa Timur. *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan*, 5(1), 784-790.
- Loqman Ananta Azaria, & Sumainah Fauziah. (2023). Strategi pengembangan pasar ekspor bagi UMKM melalui pemanfaatan teknologi digital. *Jurnal Pengabdian Kepada Masyarakat*, 2(2), 7–8.
- OECD. (2021). *Digital Transformation in SMEs*. OECD Publishing.
- Porter, M. E., & Millar, V. E. (2005). *Bagaimana Teknologi Informasi Memberi Keunggulan Kompetitif*. Jakarta: Erlangga
- Porter, M., & Millar, V. (1985). *How Information Gives You Competitive Advantage*. Harvard Business Review.
- Ryan, D., & Jones, C. (2009). *Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation*. Kogan Page
- Ricardo, D. (2007). *Prinsip-Prinsip Ekonomi Politik dan Perpajakan* (Terj. Ichsan). Jakarta: Raja Grafindo Persada.
- Sartika, S. H., & Santosa, A. D. (2023). Niat berwirausaha digital pada mahasiswa menggunakan the theory of planned behavior. *Jurnal Co-Value: Ekonomi, Koperasi dan Kewirausahaan*, 14(5), 33–42.
- Suri, D. M., dkk. (2024). Leadership and Institutional Design in Public Service Digitalization. *Jurnal Manajemen Pelayanan Publik*, 8(2), 447–459. <https://doi.org/10.24198/jmpp.v8i2.53807>
- World Bank. (2020). *The Role of Digitalization in SME Export Growth*. World Bank Group.
- Yulia, E. (2021). Transformasi digital UMKM di era ekonomi digital: peluang dan tantangan. *Jurnal Manajemen dan Kewirausahaan Indonesia*, 3(1), 45–55.