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Hilirization of Nori Sawi, Hydroponic Management Training, and Digitalization at Larangan Mega Asri Sidoarjo

[1]Hadi Kusnanto[*], [1]Meirna Dewita Sari, [1]Nurul Fitria Marina, [1]Andre Ridho Saputro, [1]Andhika Cahyono Putra, [1]Isa Ma'ruf Syammakh
[1]Universitas Muhammadiyah Surabaya, Indonesia
*Corresponding author
E-mail: hadikusnanto@ft.um-surabaya.ac.id

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Abstract

Purpose: This community service program was implemented at the Larangan Mega Asri, Sidoarjo with the aim of increasing the economic independence of residents through three main approaches, hilirization of dried nori mustard greens products, hydroponic management training, and social media digitalization training.

Method: Method is designed with a participatory approach that actively involves partners from the planning, implementation, to evaluation stages.

Practical Applications: The results of the activity show that the community has acquired new skills in processing mustard derivative products, is able to manage the hydroponic system independently, and is more adaptive to the use of social media as a marketing tool. This program is a positive first step in terms of increasing productivity, business diversification, and strengthening the digital marketing network of Larangan Mega Asri.

Conclusion: The combination of product hilirization, strengthening hydroponic cultivation, and marketing digitalization has created a synergy that encourages the community-based creative economic ecosystem.

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Introduction

Economic transformation based on local potential and strengthening community capacity is an urgent need in urban and peri-urban areas in Indonesia. Larangan Mega Asri in Sidoarjo is a residential area with heterogeneous community characteristics, open market access, and proximity to the economic center of East Java. Sidoarjo itself continues to show positive economic dynamics; in 2023 the Gross Regional Domestic Product (GRDP) of Sidoarjo Regency at current prices will reach IDR 273.70 trillion (BPS Kab. Sidoarjo, 2023), reflecting a large economic activity base and significant opportunities for developing household entrepreneurship/MSME. This condition becomes important socio-economic capital to accelerate empowerment programs that combine urban agriculture, local food Hilirization, and marketing digitalization (Saputro, Nuraini, & Alfiyan, 2022).

Urban farming has developed as a strategic approach to strengthen food security and increase community resilience. Recent studies confirm that urban agriculture has great potential as a sustainable solution to overcome food insecurity, strengthen local economies, and increase social cohesion. Well-managed practices can contribute to fulfilling household food and increasing family income, although the degree of contribution depends on program design and implementing capacity (Abdoellah, et al., 2023).

At the practical level, the hydroponic system is one of the superior cultivation technologies in densely populated environments because it saves land, is water efficient, controls soil pests/diseases, and allows for more uniform harvests (Mulyo, Irham, & Suryantini, 2025). The latest financial study on NFT system hydroponic businesses in Semarang shows the financial viability of urban hydroponic businesses if operations (Wahdah & Maryono, 2018), quality and marketing are managed well—an indication that the hydroponic business model can be replicated in areas such as Larangan Mega Asri by strengthening managerial aspects. In addition, innovations in growing environmental management—for example the combination of light spectrum with growth regulators—have been proven to influence the quality and yield of leaf crops, so up-to-date cultivation management training is crucial for stable and competitive hydroponic productivity (Zhou, et al., 2024).

In the context of Sidoarjo which is increasingly urban and has relatively limited yard space, hydroponics has the potential to be a gateway to empowerment: families can produce fast-harvesting vegetables (eg mustard greens) for consumption as well as supplying value-added processed raw materials that can be enjoyed by all ages. However, many communities face common challenges: managerial knowledge (record-keeping, planting-harvest planning), quality control, and market access. Systematic hydroponic management training—including planting cycle planning, nutrition, hygiene, harvest standards, and post-harvest—is needed so that production is consistent, costs are controlled, and quality meets consumer preferences (Teoh, Wong, & Mazumdar, 2024).

At LMA, hydroponic crops have shown promising potential, mainly due to their strategic location, which is only about 400 meters from the Larangan market. However, despite its proximity to the market, challenges in marketing hydroponic products remain, mainly related to their higher prices compared to conventionally grown vegetables. According to data from the Central Statistics Agency (BPS, 2022), the price of hydroponic vegetables can be 30-50% higher than conventional vegetables (BPS, 2022). This raises questions about effective marketing strategies for hydroponic products in order to compete in the local market.

One of the main challenges in marketing hydroponic produce in LMA is the unappealing image of healthy food among children and teenagers. According to research conducted by Gadjah Mada University, around 70% of children prefer fast food and snacks over healthy vegetables, including hydroponic vegetables (Syakira, P., Wisnusanti, S.U., Helmiyati, 2021). This is due to a lack of understanding about the health benefits of hydroponic vegetables and their perceived unattractiveness. Therefore, it is important to develop marketing strategies that can attract the attention of this market segment. The higher price of hydroponic products also poses a challenge. Although this price reflects better quality and cultivation methods,

consumers often prefer more affordable products.

Product Hilirization is a key strategy to increase the economic value of local commodities. Mustard leaves (Brassica spp.) scientifically have a high diversity of nutritional and antioxidant components—chlorophyll, flavonoids, phenolics—which contribute to their functional properties. With proper processing, nutritional value can be maintained while extending shelf life (Billah, et al., 2025). Various studies on mustard greens and other leaf vegetables (spinach/kale) show that the choice of drying technique and parameters (temperature, time, layer thickness, blanching pretreatment) greatly determines the retention of vitamin C, β-carotene, color, texture and sensory acceptance. These findings provide the technical basis for the development of "dried nori mustard greens"—thin sheets based on leaf vegetables—which require precise formulation settings and dehydration processes to make them crunchy, distinctively flavorful, and stable during storage. Children who enjoy snacks are one of the target markets for this mustard greens product.

The success of Hilirization is largely determined by effective go-to-market capabilities. In the last five years, Indonesia's digital ecosystem has grown rapidly: in January 2025 there were around 212 million internet users (74.6% penetration) and 143 million social media user identities (50.2% of the population) (Kemp, 2025). The growth and intensity of use of large platforms—Facebook, Instagram, TikTok, and WhatsApp—are creating vast marketing opportunities for home producers and MSME. For the LMA community, this means products like dried nori mustard greens can be promoted across cities through educational content, storytelling and creator collaboration (Khaerani & Sudarmiatin, 2022).

Thus, the integration of hydroponic cultivation of mustard greens and further processing of dried nori mustard greens as well as digitalization answers two classic problems: (1) price volatility and the risk of excess supply of fresh leaf vegetables that wilt easily; (2) the need for value-added products with higher margins. Dried mustard nori products have the potential to enter local retail markets, health shops, and online channels, as long as quality standards (moisture content, water activity, food safety, simple nutrition labels) are implemented. According to Kotler and Keller (2016), packaging not only serves as a product protector, but also as a marketing tool that can attract consumers' attention. In the context of vegetable snacks, attractive packaging can increase visual appeal and provide important information about the health benefits of the product.

According to a report by We Are Social (2022), around 4.7 billion people worldwide actively use the internet, and this number continues to increase every year. This shows that the market potential that can be reached through digital platforms is enormous, especially in areas with good internet access. For example, the use of social media as a marketing tool has proven effective in attracting the attention of local consumers. Data from We Are Social (2022) shows that 54% of social media users use the platform to search for new products. In the context of the economic conditions of the LMA community, where people's incomes vary, digital marketing can help businesses offer products that match consumers' purchasing power. By using the right marketing techniques, such as special offers or discounts, businesses can attract consumers who are more price-sensitive. This is a strategy that has proven effective in many areas with similar economic conditions.

Method

This community service method is designed with a participatory approach that actively involves partners from the planning, implementation, to evaluation stages. Community service activities are carried out through a series of programs that focus on three main aspects, namely the Hilirization of dried nori mustard greens products, hydroponic management training, and social media digitalization training. Each activity is prepared systematically and integrated so that it can provide real benefits for the residents of Larangan Mega Asri Sidoarjo in increasing economic independence based on local potential.

The first stage is identifying partner problems and needs. At this stage, field observations

are carried out accompanied by the surrounding community, then together with the PKK women's group in LMA interviews and focus group discussions (FGD) are conducted. The community, about 30 people representing and accompanied by local officials conveyed the existing conditions, which were then discussed with 5 lecturers in mapping the potential and proposals. This activity aims to map the potential and obstacles faced, especially in terms of limited land management, the need for food product innovation, as well as the limited use of digital technology for marketing. From the identification results, it is clear that mustard greens can be harvested after 1 month of cultivation and are an abundant commodity in LMA, but have not been processed into value-added products, so they have the potential to be developed as dried nori mustard greens. Apart from that, hydroponic cultivation management skills are still limited, and marketing of MSME products is still mostly done conventionally without optimizing digital media.

The second stage is planning the service program. In this stage, the team of lecturers and students prepare training modules, design appropriate technology, and digital marketing strategies that suit the partner's characteristics include the brand name. The dried nori mustard greens training module covers post-harvest processes, drying techniques, packaging and food safety standards. Meanwhile, the hydroponic management module emphasizes production management from seeding, care, to harvest with an environmentally friendly approach. For the digitalization aspect, training is designed for creative content creation, social media account management, and marketplace-based promotional strategies.

The third stage is the implementation of the service program. In the product downstream aspect, the team provided direct training regarding making dried nori mustard greens through practical methods (hands-on training). Residents of RT 33 and representatives of the PKK were invited to practice the process of washing, boiling, drying in an oven, and packaging the product so that it meets shelf life standards and is attractive to consumers. Furthermore, during the hydroponic management training, assistance was provided in the form of direct demonstrations in mini hydroponic gardens which were designed as pilot models. Partners are given an understanding of selecting planting media, nutritional regulation, water management, and plant care. This training is equipped with management practices for recording harvest results in order to control productivity and operational costs.

The next stage is social media digitalization training. This activity began with an explanation of the importance of digital marketing in expanding the market reach of local products. Participants are trained to create business accounts on popular platforms such as Instagram, Facebook and TikTok, and are given strategies for creating content in the form of photos, short videos and interesting promotional narratives. Apart from that, participants are also taught how to utilize paid advertising features, copywriting techniques, and managing interactions with consumers to increase engagement.

The fourth stage is mentoring and monitoring. The service team periodically conducts field visits to monitor the development of partners' skills in implementing the training results. This monitoring includes the quality of the dried mustard nori products produced, the sustainability of the hydroponic system, and the consistent use of social media for promotions. In this stage, evaluation is also carried out with partners through discussion forums to identify obstacles and find alternative solutions.

The final stage is program evaluation and sustainability. The evaluation was carried out by assessing the level of achievement of indicators, namely increasing community skills in processing mustard greens into dry nori, hydroponic management capabilities, and digital marketing capabilities. Apart from internal evaluation, a limited market test was also carried out to determine consumer acceptance of dried mustard nori products. The evaluation results become the basis for continuous improvement and program sustainability plans, such as developing community cooperatives, registering trademarks, or applying for halal certification.

With this method, it is hoped that the people of Larangan Mega Asri Sidoarjo will not only gain new skills, but also have more sustainable economic independence through the

Hilirization of food products, the application of modern agricultural technology prepared by the team, and the use of digitalization in marketing. Besides that, residents of RT 33 can also use the hydroponic mustard greens harvested at LMA as raw material for mustard greens nori. This creates a cycle of activity and economic growth for LMA.

Result

Community service activities carried out at the Larangan Mega Asri Housing, Sidoarjo, resulted in a number of significant achievements both in terms of increasing community skills, diversifying local food products, and using digital technology to support marketing. This program involves a group of PKK mothers, youth organizations, and several MSME actors who are concerned with developing healthy and environmentally friendly food-based businesses.

The initial stage, in the form of identifying partners' needs and problems, succeeded in providing a real picture of the conditions of the local community. Through field observations and group discussion forums, it is known that the Larangan Mega Asri community has great potential in developing local food products because most families grow simple vegetables, including mustard greens, in their yards with hydroponics system. However, the harvest is often excessive, so much of it is consumed alone or even wasted due to limited storage capacity.

Figure 1. Hydroponic of Larangan Mega Asri

Source: Private Documentation, 2025.

Apart from that, hydroponic cultivation management is still carried out traditionally without calculating nutritional efficiency or a good plant care system. From a marketing perspective, most residents do not yet use social media as a means of product promotion, so MSME products tend to only be marketed conventionally in neighbors or nearby markets. The results of this identification provide a strong basis for designing more applicable training activities.

One of the main achievements of this service is the success in introducing and implementing downstream dried mustard nori products as regional superior food products. At the training stage, the community was introduced to the technique of processing mustard greens into thin sheets resembling nori, which is known to be made from seaweed. The public's response was very enthusiastic because this product was considered unique, had high selling value, and had a wide market opportunity, especially for the consumer segment of children, teenagers, and healthy food lovers.

In the practical training, participants are trained starting from the process of washing the mustard greens, briefly boiling to maintain the green color, crushing with a blender until it becomes a paste, thinly molding it on a baking sheet, to the drying process using a household oven. Participants also learn packaging standards to make products more attractive, durable

and hygienic. From practical results, an average of 20 pieces of mustard greens are obtained per one kilogram of raw material, with a shelf life of up to three months if stored properly.

Apart from that, taste trials were also carried out by adding spice variants such as sesame, real seaweed and mild spicy flavors. The results of limited market trials in the surrounding area showed positive consumer acceptance, with 85% of respondents stating that this product was delicious and attractive to buy again. This is proof that Hilirization dried nori mustard greens products can be a concrete solution in reducing wastage of harvests as well as opening up new business opportunities for residents.

This service program also resulted in a significant increase in community skills related to hydroponic cultivation. Before the training, most residents only planted vegetables in simple ways in their yards, so the harvest results were immeasurable and the quality varied. After the training, residents were introduced to a home-scale hydroponic system based on nutrient film technique (NFT).

Figure 2. Training of Hidroponic Management

Source: Private Documentation, 2025.

The results of the training show that residents are able to understand the basic principles of hydroponics, namely water use efficiency, nutritional control, and more structured plant care. Some residents even tried to directly build mini hydroponic installations in their yards. The service team also guides participants to make simple records regarding the number of plants, operational costs and harvest yields so that they can assess aspects of economic efficiency.

In post-training monitoring, it was found that there was an increase in hydroponic vegetable productivity by 25% compared to the conventional method previously used. Plants are fresher, harvest times are more regular, and the risk of pests and diseases is reduced because the cultivation environment is more controlled. Apart from that, several participants stated that they felt more satisfaction in consuming hydroponic vegetables grown by themselves because they were more hygienic and nutritious.

Another aspect that is no less important than this service program is strengthening community capacity in terms of digitalizing marketing through social media. Before the training, the majority of participants only used social media for personal activities without using it as a business tool. After the training, they began to understand that social media could be an effective tool for expanding market reach.

The training begins with an introduction to how to create a business account on Instagram and Facebook, followed by basic techniques for creating promotional content in the form of product photos, short videos and interesting narratives. The service team also provides guidance regarding account management, posting scheduling, and strategies for using hashtags for wider reach.

Figure 3. Training of Digitalization and Optimizing Social Media

Source: Private Documentation, 2025

The results of this training were visible, because within three weeks of the activity, several participants had started actively marketing dried mustard nori products through their social media accounts. From participant reports, on average there was an increase in orders of 30% from consumers who found out about the product through social media. In fact, there was one participant who succeeded in selling his products outside the city via online networks. This success proves that digitalization of social media has a real impact in expanding market access and increasing people's income.

Post-training mentoring shows positive results. The service team carries out regular field visits to monitor the application of the skills that have been provided. Monitoring results show that more than 70% of participants are still actively producing dried nori mustard greens on a small scale, both for household consumption and for marketing.

In terms of hydroponic cultivation, around 50% of participants succeeded in maintaining the mini hydroponic system that had been built, while the rest still faced technical obstacles such as installation maintenance and the availability of liquid nutrients. For this reason, the team provided a solution in the form of introducing cheaper alternative nutrition and improving the system design to make it more durable.

In the digital marketing aspect, participants are increasingly confident in promoting products online. Some participants have even tried using paid advertising (ads) features with small amounts to reach new consumers. As a result, they were able to expand their consumer network outside Sidoarjo.

The results of this service not only have an impact on improving individual skills, but also have a positive influence on the family economy and social cohesion of the community. From an economic perspective, there is an average increase in additional income for participants who actively produce and market dried mustard greens. This value is quite significant for housewives who previously did not have additional income, increased about 8-10% than before.

From a social perspective, this activity strengthens the sense of togetherness and mutual cooperation among residents. The dry mustard nori production process is often carried out in groups, creating a collaborative atmosphere that supports the entrepreneurial spirit.

Apart from that, the new skills acquired also increase people's self-confidence in facing post-pandemic economic challenges.

Based on evaluations with partners, it can be concluded that this service program has succeeded in achieving most of the targets. Dried mustard nori products have been proven worthy as superior products with promising market opportunities. The hydroponic system is starting to be implemented on an ongoing basis, although it still requires further assistance regarding nutrient management and installation maintenance. Social media digitalization has proven effective as a modern marketing strategy, although some participants still require technical assistance in creating content.

Figure 4. Nori Product Design

Source: Private Documentation, 2025

For sustainability, the community plans to form a joint business group or small cooperative that focuses on the production and marketing of dried nori mustard greens. Apart from that, it is also planned to apply for halal certification and a simple distribution permit so that the product is more trusted by consumers.

Discussion

Community service activities carried out at the Larangan Mega Asri in Sidoarjo with a focus on Hilirization dried nori mustard greens products, hydroponic management training, and social media digitalization training, provided significant results in increasing community capacity, especially housewives and small business people. Based on the results of the evaluation carried out, it appears that this intervention is able to answer three main issues faced by society, namely limited innovation in agricultural products, weak management of hydroponic plant cultivation, and low digital literacy in product marketing.

First, from the aspect of Hilirization dried nori mustard greens products, this program shows an increase in community creativity and innovation in independently processing local raw materials. Mustard greens, which have only been sold fresh at fluctuating prices, can now be processed into dried nori mustard greens which have higher added value. This finding emphasized that product innovation based on food diversification is able to increase the competitiveness of MSMEs in local and national markets. Apart from that, the existence of processed products such as dried nori mustard greens also supports the government's food diversification program and reduces dependence on imported products such as nori made from seaweed (Aisyah & Ramadhani, 2020).

From a business sustainability perspective, Hilirization this product has the potential to be a creative economic solution based on local potential (Nuraini, Saputro, Kusnanto, Novita, & Putra, 2025). Dried mustard nori products not only have a unique taste and beneficial nutritional content, but are also easier to market because they are in line with the trend of people who like healthy, practical and modern food. This is reinforced by the results of local consumer surveys which show high interest in processed products made from vegetables.

Therefore, this service activity can be seen as the first step towards establishing a superior product identity in the Larangan Mega Asri.

Second, related to hydroponic management training, this program has succeeded in increasing the community's understanding and skills in carrying out efficient modern agricultural cultivation. Before the training, most participants did not understand the basic principles of hydroponics, from nutrient management, plant maintenance, to proper harvesting techniques. After the training, participants were able to carry out direct simulations related to seeding, plant care, and systematic recording of harvest results. This shows a significant increase in human resource capacity. With the tools provided and training conducted, the community can develop and operate independently.

In group discussions, the community said that the hydroponic method has many advantages, such as land efficiency, water savings, and minimal use of pesticides. Hydroponic system can be a sustainable agricultural solution in urban areas with limited land. With this training, it is hoped that people will not only become users of hydroponic technology, but will also be able to develop independent businesses based on modern agriculture (Kurniawan & Prasetyo, 2020).

Third, social media digitalization training has an impact that is no less important. Before this program was implemented, most business actors in the Larangan Mega Asri area were still promoting conventionally through word of mouth. After the training, participants understand the importance of branding, creating interesting digital content, and utilizing platforms such as Instagram, Facebook, and TikTok to increase market reach. The positive impact can be seen from the increased enthusiasm of participants in creating digital business accounts and their ability to upload product content consistently (Choirunnisa, Saputro, & Putra, 2025).

Social media-based digital marketing is able to expand the market share of MSME by up to 70% compared to relying solely on offline strategies. Thus, digitalization of social media is a strengthening factor for business sustainability, especially in introducing dried mustard nori products and hydroponic cultivation products to the wider community (Astuti & Putri, 2022).

In general, this community service shows that there is synergy between aspects of product innovation, production management and digital marketing strategy. Product Hilirization provides added value to agricultural products, hydroponic management increases the availability of raw materials in a sustainable manner, while digitalization of social media expands market access. This synergy is a form of integration that is needed in community economic development based on local potential (Ambarwati, Saputro, & Fathurochman, 2019).

However, there are several challenges and limitations that also need to be considered. First, business sustainability is still very dependent on community consistency in producing and marketing products. In the initial phase, participant enthusiasm is very high, but there is the potential for decreased motivation if there is no further assistance. Second, even though there has been digitalization training, technical skills in content production are still limited, especially for participants with low levels of digital literacy. Third, the marketing factor also still faces obstacles due to limited product distribution networks to the wider market (Berkah, Hakim, & Saputro, 2025).

To overcome this, a sustainable collaborative approach is needed between universities, local governments and private partners. Universities can continue to provide technical assistance and product evaluation, the government can support through MSME empowerment programs and licensing facilitation, while private partners can help with marketing networks and investment. With this collaboration, this service program does not only stop at the training level, but also continues with the formation of an independent and competitive business ecosystem (Saputro, Suef, & Sukmono, 2018).

Furthermore, this program also has quite large social implications. The presence of dried

mustard nori products and hydroponic training provides opportunities for housewives to contribute to the family economy. This not only increases income, but also strengthens social solidarity within citizen groups. Apart from that, the digitalization of social media also opens up space for the younger generation to get involved in technology-based creative businesses. Thus, this service activity has the potential to trigger the growth of new entrepreneurs in the Larangan Mega Asri.

If linked to community empowerment theory, this activity reflects the capacity building stages, namely strengthening individual and group capacity in the aspects of knowledge, skills and social networks. The results obtained show that this approach is relevant and effective in increasing community-based economic independence. The success of community empowerment is determined by the extent to which the program is able to build capacity, self-confidence, and access to wider resources.

Finally, it can be concluded that this community service program makes a real contribution to increasing the economic independence of the residents of Larangan Mega Asri Sidoarjo through product Hilirization, hydroponic management and marketing digitalization. Although there are still challenges, the results obtained show great potential for sustainable local potential-based business development. According to Chamber (1994), active community participation is essential, especially if the community is able to treat this activity as their own idea, so that in its implementation, the community actively participates in determining the type of plant seeds, preparing the schedule or activity calendar, designing the packaging and brand name, as well as the methods and content for digital marketing. The team of lecturers and students provide support in the form of equipment, training, and assistance throughout the process.

Conclusion

The community service program implemented at the Larangan Mega Asri Housing Complex in Sidoarjo makes a real contribution to increasing the capacity, skills and economic independence of the local community. Product Hilirization through the innovation of dried nori mustard greens has proven to be able to increase the added value of mustard greens which were previously only marketed in fresh form at relatively low prices. This innovative product not only extends the shelf life of mustard greens, but also opens up new, wider market opportunities, both locally and digitally.

Hydroponic management training has increased public knowledge regarding modern vegetable cultivation techniques that are more efficient, environmentally friendly and sustainable. Participants are now able to understand the production cycle from upstream to downstream, including planning, maintenance, harvest and post-harvest. This has implications for increasing productivity and quality of independently managed household agricultural products. Participants that have been trained and are able to operate independently can train their communities at the neighborhood association (RW) level under the supervision of the RW and the Family Welfare Movement (PKK).

On the other hand, social media digitalization training provides a strong understanding of the importance of digital marketing as a strategy in dealing with changes in people's consumption patterns. With this training, residents have new skills in managing social media, creating creative content, and optimizing branding strategies to reach a wider market. With the younger audience (15-25 years old) actively participates in marketing, from naming and design to digital marketing content, it help in mastering more advanced technology and updated.

Overall, the combination of product Hilirization, strengthening hydroponic cultivation, and marketing digitalization has created a synergy that encourages the formation of a community-based creative economic ecosystem. This activity not only improves economic welfare, but also strengthens the independence of the Larangan Mega Asri Sidoarjo community through sustainable management of local potential.

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Reference

Abdoellah, O. S., Suparman, Y., Safitri, K. I., Mubarak, A. Z., Milani, M., Margareth, & Surya, L. (2023). Between food fulfillment and income: Can urban agriculture contribute to both? Geography and Sustainability, 4(2), 127-137. doi:https://doi.org/10.1016/j.geosus.2023.03.001.

Aisyah, S., & Ramadhani, L. (2020). Strategi digitalisasi UMKM dalam menghadapi persaingan global. Jurnal Ekonomi dan Bisnis Digital, 2(1), 45-56. doi:https://doi.org/10.24853/jebd.2020.2.1

Ambarwati, R., Saputro, A. R., & Fathurochman, A. G. (2019). Product Development for Competitive Advantage of Micro, Small, and Medium Enterprises of Ikat Woven Fabric in Kediri. Binus Business Review, 10(2), 75-86. doi:https://doi.org/10.21512/bbr.v10i2.5676

Astuti, N. M., & Putri, W. S. (2022). Pemanfaatan media sosial sebagai sarana pemasaran produk UMKM. Jurnal Manajemen dan Kewirausahaan, 24(3), 233-244. doi:https://doi.org/10.9744/jmk.24.3.233-244

Berkah, D., Hakim, M. H., & Saputro, A. R. (2025). When faith meets choice: Brand awareness, trust, and consumer preferences toward Muhammadiyah products. al-Uqud: Journal of Islamic Economics, 9(1). Retrieved from https://journal.unesa.ac.id/index.php/jie/article/view/40263

Billah, M. T., Zannat, N. E., Hossain, M. A., Sachcha, I. H., Yasmin, S., & Sarker, M. S. (2025). Process Optimization of Fluidized Bed Drying for Water Spinach: Evaluating the Effect of Blanching Through RSM and ANN Models. Food Science & Nutrition, 13(4). doi:https://doi.org/10.1002/fsn3.70114

BPS Kab. Sidoarjo. (2023). Pertumbuhan Ekonomi Kabupaten Sidoarjo Tahun 2023.

Chambers, R. (1994) 'The origins and practice of participatory rural appraisal', World Development, 22(7). doi:10.1016/0305-750X(94)90141-4.

Choirunnisa, A., Saputro, A. R., & Putra, A. C. (2025). Analisis Strategi Pemasaran Berbasis Metode 4P untuk Meningkatkan Daya Tarik Brand Windi Shoes. Improvement: Jurnal Manajemen dan Bisnis, 5(1), 86-97. doi:https://doi.org/10.30651/imp.v5i1.26223

Kemp, S. (2025, February 25). Digital 2025: Indonesia. Retrieved from DataReportal – Global Digital Insights: https://datareportal.com/reports/digital-2025-indonesia

Khaerani, S. N., & Sudarmiatin, S. (2022). The Use of Digital Marketing and Its Impact on Increasing MSME Sales. Interdisciplinary Social Studies, 1(8). doi:https://doi.org/10.55324/iss.v1i8.193

Kotler, Keller and Chernev (2016) Marketing Manajemen, Pearson Education.

Kurniawan, A., & Prasetyo, B. (2020). Manajemen usaha tani hidroponik dalam meningkatkan produktivitas masyarakat urban. Jurnal Agribisnis Indonesia, 8(1), 65-

75. doi:https://doi.org/10.22146/jai.2020.8.1.65

Mulyo, J. H., Irham, I. I., & Suryantini, A. (2025). Financial feasibility of NFT system hydroponic urban farming businesses in Semarang city. BIO Web of Conferences 158. doi:http://dx.doi.org/10.1051/bioconf/202515802002

Nuraini, F., Saputro, A. R., Kusnanto, H., Novita, D., & Putra, A. C. (2025). Optimalisasi Paten, Merek, dan Sertifikasi Halal dalam Meningkatkan Keunggulan Bersaing di Tingkat Nasional. Jurnal Pembelajaran Pemberdayaan Masyarakat (JP2M), 6(1), 46-56. doi:https://doi.org/10.33474/jp2m.v6i1.22494

Saputro, A. R., Nuraini, F., & Alfiyan, M. (2022). Strategi Pemasaran Kuliner Halal: Studi Kasus UMKM Kota Surabaya. Journal of Manufacturing in Industrial Engineering & Technology, 1(2), 28-37. doi:https://doi.org/10.30651/mine-tech.v1i2.16922

Saputro, A. R., Suef, M., & Sukmono, R. A. (2018). Development of QCDSM-based products for increasing competitive advantage case study of Tenun Ikat SME Kota Kediri. International Journal of Business and Economic Affairs, 3(5).

Syakira, P., Wisnusanti, S.U., Helmiyati, S. (2021) Hubungan Akses Sumber Informasi Gizi dan Pengetahuan Gizi Terhadap Preferensi Makanan Siswa Sekolah Menengah Pertama Yogyakarta. Yogyakarta.

Teoh, S. H., Wong, G. R., & Mazumdar, P. (2024). A review on urban farming: Potential, challenges and opportunities. Innovations in Agriculture, 7, 1-11. doi:https://doi.org/10.3897/ia.2024.127816

Wahdah, L., & Maryono, M. (2018). Urban Farming Management System In Semarang City. The 3rd International Conference on Energy, Environmental and Information System, 73. doi:https://doi.org/10.1051/e3sconf/20187303023

We Are Social and Hootsuite (2022) 'Digital 2022: Global overview report', Www.Datareportal.Com [Preprint].

Zhou, A., Tang, J., Li, Y., Cheng, W., Yao, X., Escalona, V. H., . . . Sun, B. (2024). Combination of light quality and melatonin regulates the quality in mustard sprouts. Food Chemistry: X, 23. doi:https://doi.org/10.1016/j.fochx.2024.101560.