

## Halal Industry in Madura: Development Model and Strategy

Mokh. Rum<sup>1\*</sup>, Amanatuz Zuhriyah<sup>2</sup>

<sup>1,2</sup>Agribusiness Study Program, Trunojoyo University Madura, Madura, Indonesia

Correspondence e-mail: rum@trunojoyo.ac.id

### ABSTRACT

*Madura has potential for Halal products. The four districts each have superior products with export potential. The development of the halal industry is an alternative to increasing the contribution of superior products to the regional economy and people's income. Its development requires the synergy of stakeholders through the Penta Helix model. This research aims to: 1). formulating the Penta Helix synergy model in the development of the halal industry in Madura; 2). formulate strategic priorities for the development of the halal industry in Madura.*

*This research was conducted in Bangkalan Regency, Madura from September to November 2022. Data analysis for developing the Penta Helix model used a qualitative descriptive approach, while determining the priority of the development strategy for the Madura halal industry using the Analytical Hierarchy Process (AHP). Respondents in this study are experts in the development of the halal industry.*

*The Penta Helix model in this study is a collaborative design and relationship between five elements consisting of academia, government, farmers and fishermen, halal industry players, and the community. The Penta Helix collaboration is very important for the development of the halal industry in Madura, but so far the institution has not been built, so this research recommends that a business partnership should be designed. The results of the AHP analysis show that the main criteria in determining the strategy for the development of the halal industry are institutions. The recommended strategy is Penta Helix collaboration. The institutional design of the Penta Helix partnership and collaboration is the main prerequisite that must be carried out for the development of the halal industry in Madura.*

**Keywords:** Halal Industry, Development model and strategy, Madura

### Introduction

The halal industry has a strategic role in improving the economy, so the halal industry should be developed in Indonesia. The halal industry annually contributes USD 3.6 billion Indonesia's Gross Domestic Product (GDP). In addition, the halal industry also contributes USD 1 billion in investment from foreign investors and creates 127,000 jobs per year (Ministry of Finance of the Republic of Indonesia, 2019). Indonesia has the opportunity to add IDR 72.9 trillion to Indonesia's Gross Domestic Product (GDP) in 2022, due to an increase in exports of halal products, import substitution and foreign investment. East Java is a province with the second largest Muslim population in Indonesia, which is 39,554,069 (Ministry of Religion, 2022). In East Java, the percentage of the population with the largest adherents of Islam is the island of Madura.

However, the potential of the halal industry in Indonesia has not been fully

exploited. Facts on the ground, in 2019 there are still very few halal products from Indonesia to meet the domestic and export markets. Based on the 2019 State of the Global Islamic Report assessment, for the Halal Food sector, Indonesia is not in the top 10 (State of Global Islamic Economy Report 2019). This is ironic, because Indonesia is a country with the largest number of followers of Islam in the world and has potential resources and institutions that can be mobilized to increase the contribution of the halal industry. This gap shows that most Indonesians are still struggling as consumers of the halal industry.

Madura has the potential for the development of halal products including the food, non-food and service sectors. However, the community has not fully utilized and developed its potential. The results of Syarifatul et al's research (2021) show that out of 26 traditional/herbal medicine industries in Pamekasan Regency, as many as 20 herbal industries or 76.92% do not yet have a halal label on their product packaging. This happens due to the lack of MSME actors regarding the importance of halal certification (Qoni'ah, 2022). Even though halal certification is an important element in the availability of the halal product industrial ecosystem in Indonesia (Makhtum and Farabi, 2021), because halal certification is an acknowledgment of the halalness of a product issued by the halal product assurance agency (BPJPH) based on a halal fatwa issued by the Indonesian Ulema Council (MUI). MSME participation in welcoming the halal certification program in Madura is still low, apart from being caused by the Covid-19 Pandemic which has an impact on the weakening of the economic sector (Aminy and Fithriasari, 2020), is also caused by the low knowledge of MSMEs regarding the procedures for obtaining halal certification (Makhtum & Farabi, 2021).

Universities have a strategic role in developing the halal ecosystem. Among them are through the Halal Center, center for halal studies, research in the field of halal, Halal Research Institute (LPH), establishment of a Professional Certification Institute, halal assistants, halal exporters, and supervisors for halal slaughtermen. The development of Madura halal products to meet the domestic and export markets absolutely requires collaboration, coordination and cooperation with Penta Helix, According to Ariwibowo et al (2000) the Penta Helix model is based on five types of stakeholders abbreviated as ABCGM (Academician, Business, Community, Government, Media). Through the Penta Helix collaboration, it is hoped that it can increase the functionalization of the UTM Halal Center in increasing the role and contribution of halal products in Madura towards the export market.

The preparation of the Penta Helix model for the development of Madura halal products can be done by identifying the roles and contributions of each stakeholder who has an interest in developing Madura halal products. A decision-making system with the implementation of the Analytical Hierarchy Process (AHP) can be used to develop roadmaps and strategies development of the halal industry in Madura. Based on the background above, it is necessary to study the models and strategies for developing the halal industry in Madura. This research aims to formulate the Penta Helix synergy model in the development of the halal industry in Madura and formulate strategic priorities for the development of the halal industry in Madura.

## Research Method

This research was conducted in 2022 in Madura. Collecting data from informants from Penta Helix stakeholder elements, namely, academics, government, halal industry players, farmers and fishermen, and the community. The author collects data from the five stakeholders. The feedback or feedback that the author wants to know from these stakeholders is, first, what is their understanding and perception of the halal industry. Second, what roles and work programs have they made for the development of the Madura halal industry. Third, what are the supporting aspects and what are the obstacles they face in the development of the Madura halal industry, and Fourth, what are the patterns of cooperation carried out by stakeholders in the development of the Madura halal industry. These four stages were used by researchers to formulate the penta helix model for the development of the Madura halal industry. In the next stage, the researcher identified the hierarchical structure using the Analytical Hierarchy Process (AHP) stages which included the following stages: 1). define the problem to determine the desired solution and create a hierarchical structure. In this study the general objectives of AHP are: (1). formulate strategic priorities for the development of the Madura halal industry; 2. develop a set of pairwise comparison matrices between criteria and alternative strategies, so that weights for each criterion and weights for each alternative strategy will be obtained; 3). calculate the eigenvalue vector. The eigenvalue vector is the weight of each element. This step is to synthesize judgment in prioritizing the elements at the lowest hierarchical level to achieve the goal; 4). test the consistency based on the Consistency Index

This study uses two methods of analysis, namely qualitative and quantitative approaches (mix method). A qualitative approach is used to formulate the Penta Helix model for the development of the Madura halal industry. Researchers in analyzing qualitative data are guided by the views of Milles and Huberman (1992), while determining the strategy for the development of the Madura halal industry using AHP by adopting the approach taken by Saaty (2008); Marimin, 2004; and Rum et al., 2019. Pairwise comparisons between the two elements using values ranging from 1-9. The rating scale used is as follows (Marimin & Nurul, 2011; Rum et al., 2019).

**Table 1.** Paired Matrix Rating Scale

Interest Level	Description
1	Element A is just as important as Element B
3	element A is slightly more important than element B
5	element A is more important than element B
7	Element A is much more important than Element B
9	element A is absolutely more important than element B

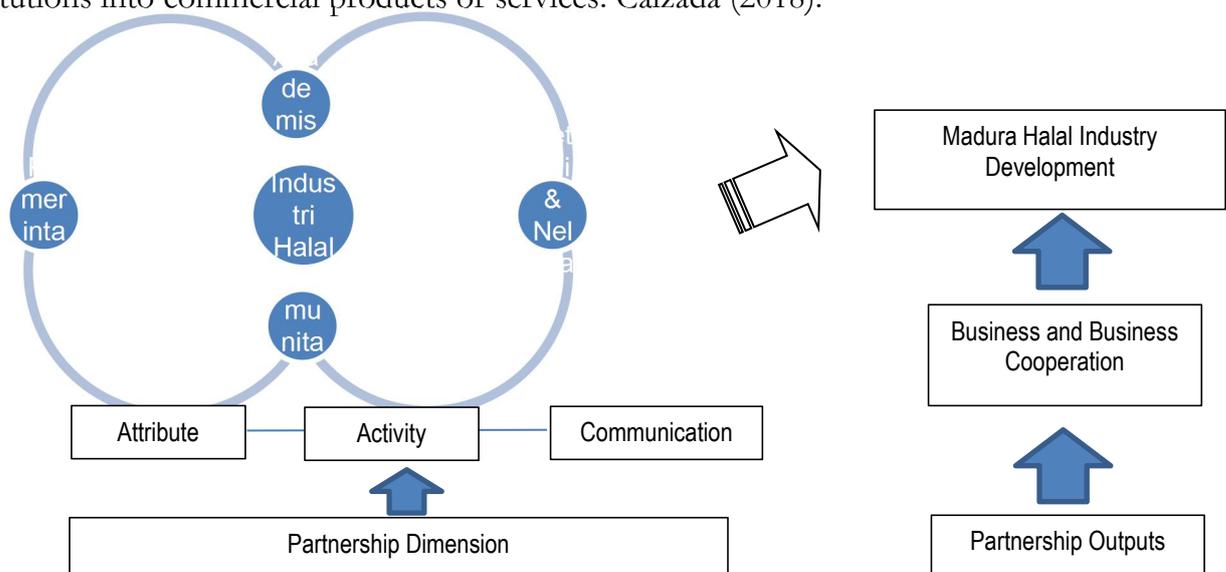
2,4,6,8	Median value (if the respondent has doubts about two adjacent values)
1/3	element B is slightly more important than element A
1/5	element B is more important than element A
1/7	element B is much more important than element A
1/9	element B is absolutely more important than element A

Source: Adopted from Marimin & Nurul, 2011; Rum et al., 2019.

## Results And Discussion

### Penta Helix model Development of Halal Industry in Madura

The Penta Helix model is a design of the integration of five elements that are coordinated with one another. This concept is the development of theory Triple Helix (Etzkowitz and Leydesdorff., 1995), Quadro Helix for districts/cities by Jann Jidajat Tjakraatmadja (2012). The Triple Helix model is widely applied in various fields, including in the development of entrepreneurship and the economy in Higher Education (Najiyati & Susilo, 2011). The Penta Helix model seeks to expand stakeholders by synergizing the strengths and potentials of each stakeholder to obtain better output. Stakeholders who synergize in the Penta Helix model include academics, business actors, the community, government, and the media (Umiyati & Tamrin, 2020). The Penta Helix model can also be used for tourism development (Pradhipta et al., 2020). Research Muhyi, HA, et al. (2017) used the penta helix model in the development of seven industrial central areas in Bandung, West Java. Calzada (2016) states that the Penta Helix model was developed for innovative entrepreneurship programs through collaboration between academics, government, industry, NGOs and civil society, and social entrepreneurs. This collaboration is able to transform innovative research projects cultivated in educational institutions into commercial products or services. Calzada (2018).



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**Figure 1.** The Penta Helix Model for Development of the Madura Halal Industry

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Figure 1. shows the synergistic integration pattern of the five complementary elements. The five elements are the UTM Halal Center, MSMEs, farmers and fishermen, the community, and the government. This model is designed by integrating collaboration and optimizing the role of elements in the partnership dimension pattern, consisting of attributes, activities, and communication in partnerships. The main focus in this model is business and business cooperation in the development of the halal industry in Madura. Based on the UTM Halal Center master plant in 2022, the halal industry in Madura consists of the food and beverage industry, the traditional Madurese herbal and spice industry, the chili herb agro-industry, the halal tourism industry, and the livestock sector.

**Government**

The Indonesian government encourages the development of the halal ecosystem and the competitiveness of national products, one of which is through the halal facilitation program. This program aims to provide facilitation to industry players, including halal product certificates for micro, small and medium enterprises (MSMEs). Through Law Number 33 of 2014, the government aims to increase added value for MSMEs to produce and sell halal products. In addition, from the consumer's point of view, the guarantee of halal products can provide convenience, security, safety, and certainty of the availability of halal products. Furthermore, Law Number 33 of 2014 concerning Guaranteed Halal Products, amended by Law Number 11 of 2020 concerning Job Creation, where one of the articles emphasizes MSME actors to have halal certificates for their processed products. The government has the right to create regulations and policies in developing the industry (Amrial & Adrian., 2017). Other government roles include providing business support facilities and infrastructure, carrying out promotions (Kagungan et al., 2021), providing education and training for MSMEs, and facilitating the halal certification program for MSME products (Razali et al, 2021).

The development of the halal industry in Madura has received positive support from the government, especially from the Ministry of Religion of the Republic of Indonesia, the Department of Trade and Industry, and the Office of Cooperatives and Micro Enterprises. The Ministry of Religion through the Halal Product Guarantee Agency (BPJH) has a mission to facilitate and encourage the development of the halal industry. Law Number 33 of 2014, Law Number 11 of 2020, and Government Regulation Number 39 of 2021 concerning Implementation of Halal Product Guarantees have implications for the obligation for products that enter, circulate, and trade in Indonesian territory to have halal certificates. This policy was carried out by the government also to protect consumers. The UTM Halal Center cooperates with BPJH and the Indonesian Ulema Council (MUI) in the process of issuing halal certification.

**Academics**

The Halal Center in Madura is managed by Trunojoyo Madura University. In its activities, it collaborates with the Brawijaya University Halal Center, Airlangga University Surabaya Halal Center, LPPOM MUI, BPJH, the Trade and Industry Service, and the Cooperative and Micro Business Office, and the Maritime Affairs and Fisheries Service. The collaboration aims to provide technical guidance for a halal assurance system with

sharia principles. Halal certificates are issued by BPJH Ministry of Religion after a series of administrative and audit processes.

The UTM Halal Center was inaugurated by the Vice President of the Republic of Indonesia on January 23, 2022. The UTM Halal Center has the functions of education, da'wah, mentoring, and coaching of MSMEs, research, and auditing of halal products. The UTM Halal Center organizational structure consists of halal supervisors, halal auditors, and halal assistants. The duties of the halal supervisor include supervising the process of halal products in the company, accompanying the auditors of the Halal Inspection Agency (LPH) during inspections, and coordinating the halal production process. The duties of the halal auditor include: checking and reviewing product halalness from the aspects of raw materials, production processes, equipment used, storage, distribution (Aksanawati, 2020). In addition, the halal auditor also checks the halal guarantee system for business actors, and report the results of inspection and/or testing to LPH (UU Number 33 of 2014). Halal assistants consist of UTM lecturers and students who are trained to process halal products (PPH). The PPH process includes the provision of raw materials, production, storage, packaging, distribution, product presentation, and sales.

Trunojoyo Madura University as one of the state universities in Madura conducts research and community service activities focused on six leading sectors, namely the food, salt and tobacco, education, energy, social, and labor and women sectors. One of the allocations of research funds for the Institute for Research and Community Service (LPPM) is for the development of halal products. LPPM UTM has a Halal Center, Food Research and Innovation Center, Spice and Medicine Research and Innovation Center, Salt Research and Innovation Center, Tourism and Creative Economy Research and Innovation Center, and Community Service Center. Research results with the themes of halal, food and spices starting in 2020 are internalized in the learning program plans and activities of Thematic Real Work Lectures.

### **Farmers and Fishermen**

The development of the halal industry in Madura absolutely requires the support of farmers and fishermen. Both of them function as raw material providers for the halal industry. The superior products of Bangkalan Regency include: prawn crackers, shrimp paste, petis, eggplant crackers, traditional herbs, siwalan sugar, and mlinjo chips. The trade and export commodities of Bangkalan Regency include dried fish, smoked fish, and crabs. The superior products of Sampang Regency include salt and Camplong guava. Some salt farmers and producers in Sampang are starting to use technology to produce industrial salt. UTM also has a Salt Research and Innovation Center to develop industrial salt. Main commodities of Pamekasan Regency include corn, salt, tobacco, empon-empon plants, chili herbs, beef cattle, and marine fisheries. Main commodities of Sumenep Regency include seaweed, sea fish, moringa leaves, porang, and cashew. In the four districts in Madura, each of them also has superior halal fashion products, namely batik. The existence of farmers and fishermen is a support for the development of the halal industry.

Until now, agriculture, animal husbandry and maritime affairs are still the main livelihoods for most of the population in Madura. Besides being consumed by themselves, the harvest is also processed into processed products, and some is sold to collectors and

exporters. Weak knowledge of farmers and fishermen about product diversification and production standards has an impact on added value and relatively low business revenue. The use of technology is expected to increase the income of farmers and fishermen in Madura (Herlina & Rum, 2022). Likewise, the application of appropriate technology can increase the added value of marine product commodities (Annuriyah & Rum, 2021). Increasing the added value of commodities will ultimately have an impact on increasing the welfare of agro-industry actors (Wulandari & Rum, 2021).

### **Community**

The community on the Penta Helix model acts as an accelerator (Umiyati & Tamrin, 2020). This means that society is a collection of people who have the same interests and act in a thriving business. They also act as intermediaries between stakeholders in order to assist the halal industry in the entire process, and facilitate the implementation of halal certification according to the vision and mission of the UTM Halal Center. Communities that support the Madura halal industry are the Madurese traditional herbal medicine association, tourism awareness groups (Pokdarwis), the intelligent duck breeders association, the chilli herb farmer group, and the Madura cattle association. The availability of the role of the local media (press) in voicing the halal industry in Madura is needed to strengthen the branding of the halal industry.

### **Halal Industry**

The Penta Helix model places the halal industry at the center of the integration of the other four sectors. sectors other than industry will encourage the industry to grow, develop, and be sustainable. Industry is the main focus. This is a concept that embodies industrial revitalization for the development of the halal industry in Madura. The industrialization strategy requires support and coordination with other strategies such as macroeconomic policies. At the same time, the industry also needs the contribution of knowledge/technology created by research centers. Farmers and fishermen as raw material providers for the halal industry have an important role in ensuring the continuity of production and the sustainability of the halal industry. Society as the owner of factors of production and at the same time, the target market, also plays an important role in the supply of productive labor (Amrial et al., 2017). The development of the halal industry needs support from the local government (Razalia et al., 2021). One of the strategies carried out by the local government is to provide free halal assistance and certification for halal industry players. Development of the halal industry such as halal tourism in Madura requires adequate infrastructure development and community participation in its management (Rosyidah et al., 2021). The multiplier effect of the development of halal tourism has an impact on increasing the economy of the surrounding community and MSME income (Suaibah, 2017). One of the strategies carried out by the local government is to provide free halal assistance and certification for halal industry players. Development of the halal industry such as halal tourism in Madura requires adequate infrastructure development and community participation in its management (Rosyidah et al., 2021). The multiplier effect of the development of halal tourism has an impact on increasing the economy of the surrounding community and MSME income (Suaibah, 2017). One of the strategies carried out by the local government is to provide free halal assistance and certification for halal industry players. Development of the halal industry such as halal

tourism in Madura requires adequate infrastructure development and community participation in its management (Rosyidah et al., 2021). The multiplier effect of the development of halal tourism has an impact on increasing the economy of the surrounding community and MSME income (Suaibah, 2017).

The focus of this research examines the development of the halal industry in Madura, especially for food, beverage, herbal and livestock products. Partnerships between farmers, fishermen and breeders with the halal industry are important to do in an effort to increase competitiveness (Rum et al., 2020).

The partnership dimension is built based on the dimensions of attributes, activities, and communication between actors (Muhyi et al., 2017). According to Kotler and Armstrong (2012) product attributes consist of product quality, product features, product design, and product packaging. According to Umariyah and Rum (2022) product attributes have a positive effect on consumer purchasing decisions. Apart from attributes, the halal label variable also has a significant effect on purchasing decisions (Meri et al., 2020). The halal industry in Madura needs to improve the quality of attributes and have a halal certificate so that product competitiveness increases and can meet consumer preferences. Besides that, you also need to build brand marketing. To build brand marketing the halal industry needs to carry out creative activities such as making logos, packaging designs, slogans and messages to be conveyed to consumers.

Management information systems (MIS) for raw materials and supply chain design for the halal industry need serious attention in partnerships. Implementation of integrated supply chain management can improve farming performance (Rum et al., 2019), and the agro-industry of traditional Madurese and local spices (Adiba et al., 2021). Supply chain management is relationship management from upstream to downstream or from supplier to final consumer to provide better value to customers and reduce overall supply chain costs (Ilmiyati & Munawaroh, 2016). Integrated supply chain management practices consisting of strategic partnerships, relationships with consumers, and information sharing are able to increase competitive advantage and performance of the agro-industry of traditional Madurese and local spices (Adiba et al., 2021). Partnerships with raw material providers are carried out with farmers, fishermen and breeders with a plasma nucleus pattern. Partnerships with fellow halal industry players are carried out with the concept of mutual benefit.

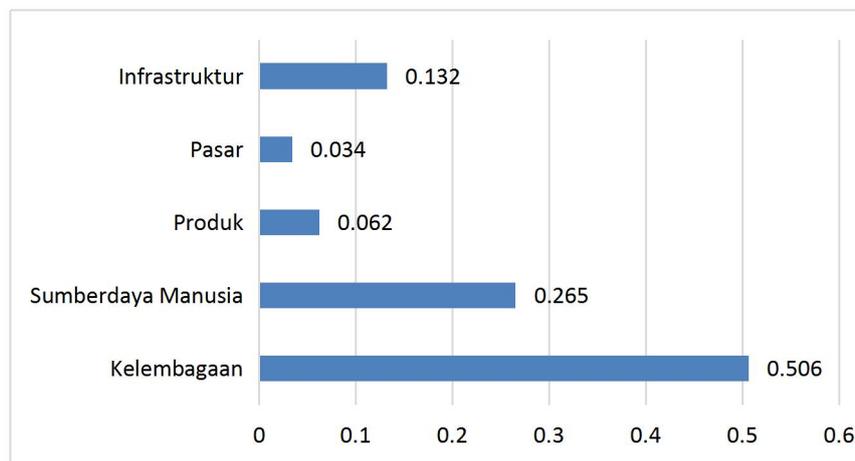
The Penta Helix model in Figure 1 is a theoretical study combined with findings in the field. To provide real solutions for the development of the halal industry in Madura, it is necessary to organize institutionally by integrating the roles of each element. This model can run effectively if there is a strong commitment between elements in the form of partnerships, so that a draft of business and business cooperation is produced in the development of the halal industry in Madura. The development of the halal industry requires the right strategic priorities so that it can make a positive contribution to all stakeholders.

### **Halal Industry Development Strategy in Madura**

Prioritization of the development strategy for the Madura halal industry uses the AHP method. The research respondents are experts (experts) in the development of

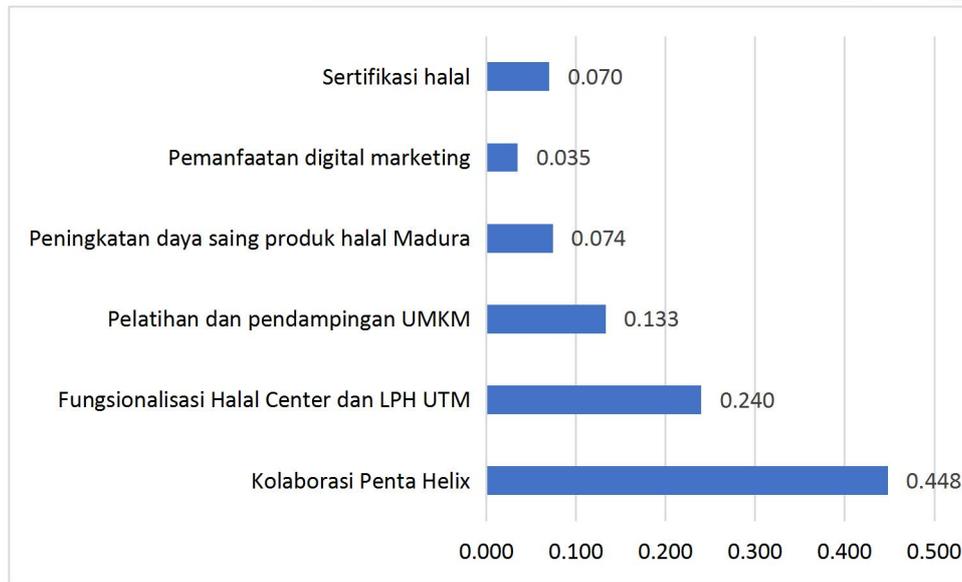
Madura halal products. AHP analysis was carried out using Expert Choice 11 software. The criteria used in determining the strategy for developing Madura halal products consisted of institutions, human resources, products, markets, and infrastructure. Experts were asked to provide an assessment of the paired matrices using a pairwise comparison scale 1-9.

The results of the AHP analysis show that as a whole the experts assess the main criteria used to determine the Madura halal product development strategy as institutions with a weight value of 0.506 (50.6%). In second place are human resources with a weighted value of 0.265 (26.5%), and infrastructure in third place with a weighted value of 0.132 (13.2%). The institutions needed in the development of Madura halal products are as presented in Figure 1. This is in the form of a partnership by optimizing the role of integrated elements in the Penta Helix model. The results of the analysis of the consistency ratio (CR) of all matrices showed a consistent value, which was 0.07 ( $<0.1$ ) and met the requirements set by Saaty (1993).



**Figure 2.** Priority Criteria for Halal Industry Development in Madura

Alternative strategies for the development of the Madura halal industry consist of: Penta Helik collaboration, functionalization of the Halal Center and the UTM Halal Guarantee Institute (LPH), training and mentoring of MSMEs, increasing the competitiveness of Madura halal products, utilizing digital marketing, and halal certification. Experts are asked to provide an assessment of paired matrices based on alternative strategies using a pairwise comparison scale 1-9. The results of the AHP analysis show that overall experts assess the priority of the Madura halal industry development strategy sequentially, namely the Penta Helik collaboration with a weight value of 0.448 (44.8%), the functionalization of the Halal Center and the UTM Halal Guarantee Agency (LPH) with a weight value of 0.240 (24 %), MSME training and assistance with a weight value of 0.113 (13.3%), increased competitiveness of Madura halal products with a weight value of 0.074 (7.4%), halal certification with a weight value of 0.070 (7%) , and in last place is the use of digital marketing with a weight value of 0.035% (3.5%).



**Figure 3.** Priority Strategy for Halal Industry Development in Madura

The expert's assessment of the determination of the strategy for the development of the halal industry in Madura based on each criterion is presented in table 2. Based on all the criteria used in determining the strategy for the development of the halal industry in Madura, the Penta Helix collaboration received the highest weight score, meaning that all experts agreed that the Penta Helix collaboration was selected strategic priorities. Furthermore, based on institutional criteria, the second strategy is the functionalization of the UTM Halal Center and UTM LPH. Based on human resource criteria, the second strategy is MSME training and mentoring. Based on product criteria, the halal certification strategy ranks second. Based on market criteria, the second strategy is halal certification,

**Table 2.** Strategy Alternative Weight Value Madura Halal Industry Development

Criteria/Alternative	Institutional	Human Resources	Product	Market	Infrastructure
Penta Helix Collaboration	0.440	0.420	0.468	0.479	0.466
Functionalization of Halal Center and LPH UTM	0.271	0.169	0.044	0.042	0.255
MSME training and assistance	0.155	0.218	0.023	0.025	0.124
Increasing the competitiveness of Madura halal products	0.062	0.081	0.138	0.140	0.074
Utilization of digital marketing	0.029	0.045	0.071	0.079	0.032
Halal certification	0.044	0.064	0.257	0.234	0.049

Source: Processed Primary Data, 2022

### Conclusion

The conclusions from the results of this study are: 1). The Penta Helix model in developing the halal industry in Madura is a design of the integration and collaboration of

five elements that are coordinated with each other, consisting of academics, farmers and fishermen, community, government, and Madura halal industry players. This integration is carried out through partnerships in the form of business and business cooperation; 2). The priority criteria for the development of the halal industry in Madura are institutions, while the strategic priority for the development of the halal industry in Madura is the Penta Helix collaboration.

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