Strategies on halal certification obligations: Learning from the experience of LPPOM MUI South Sulawesi

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Article Info

Abstract

Purpose – Since 2019, halal inspection institutions (LPH), other than the LPPOM MUI, have been newly formed. faced issues of sentiment towards halal certification and the experience gap between LPH and LPPOM MUI. This research aims to predict registrants for halal product certification at LPPOM MUI South Sulawesi from sentiment on social media and to identify strategies to increase it.

Methodology – The first method used is ARIMAX for halal certification registrants regarding halal logo trends on Google Trends, and the second is SWOT analysis, which continues with the Analytical Hierarchy Process (AHP).

Findings – Based on the results of the ARIMAX analysis of order (0,0,1), there is no significant relationship between the sentiment variables towards halal certification registrants at LPPOM MUI South Sulawesi. The results of the SWOT analysis concluded that LPPOM MUI South Sulawesi is in Quadrant IV, namely on the defensive side, which is unprofitable. For this reason, based on AHP analysis, it is necessary to make improvements in increasing halal awareness for the community, especially for businesspeople and MSMEs.

Implications – This research has implications for the development of strategies at the LPPOM MUI and LPH institutions in increasing halal certification registrants through analysis results.

Originality – This paper provides novel insights into the development of the halal industry through strategic steps, as well as the results of forecasting the number of applicants for halal certification with sentiment towards it, where there is very little research that examines forecasting in the halal industry sector.

Introduction

In many societies, religion also plays a large role in determining food choices, one of which is Islam (Sherwani et al. 2018). In the modern world it is known by the term halal certification, especially for food, is vital for Muslim consumers (Ahmadova & Aliyev 2021). Therefore, the halal process for a product is very detailed, starting from the ingredients in the product, including preparation, slaughter, cleaning, handling, and other related management practices (Usman et al. 2022). This issue must be accompanied by an increasing trend among Muslim consumers (Zulfakar et al. 2019).

Certified halal food can not only be marketed in local markets, but can also reach global markets and give consumers confidence in consuming manufactured food labeled Halal. This opens opportunities for food producers to enter the export market (Badruldin et al., 2012;Sherwani et al., 2018). For example, Muslim consumers force them to modify existing products and/or offer new products that meet the needs of Muslim consumers.

Sherwani et al. (2018) argue that the halal market opportunity is very large and that the global halal market requires strategic steps to increase the use of Halal Certification allows us to explore new marketing (Rajagopal et al. 2011). For example, some Islamic countries, such as the Indonesian Government, are committed to strengthening the halal industry with Badan Penyelenggara Jaminan Produk Halal (BPJPH) as the authority responsible for halal certification in Indonesia (Badruldin et al. 2012). Government institutions issue regulations for open halal inspection institutions (LPH) because of the public's need for mandatory halal certification for all products circulating and traded in Indonesia. Another effort made by BPJPH to increase halal certification applicants is to change the halal certification logo. However, these two strategies raise new problems. First, there is the issue of LPPOM MUI as the oldest institution becoming LPH, which is considered to be creating a monopoly market (Hardian and Haque 2020). Second, changes in the halal logo have caused conflicts in society. This is because the logo design is more Java-centric, thus causing negative sentiments on social media.

Based on the gap phenomenon, we further explore how to increase the number of halal certification users. Hey's research Badruldin et al. (2012) and Parvin Hosseini et al. (2020) discusses the factors that influence Muslims to pay for halal certification; of course, this is related to the perspective of halal certification users. However, Haleem et al. (2020), Khan et al. (2019b), Tieman (2015), and (Prabowo et al. 2015) examined the inhibiting factors in developing their strategy models. Based on previous research, we found a research gap. First, there is no paper discussing research objects that are successful in developing strategies based on sentiment phenomena on the Internet. Therefore, we took the case in South Sulawesi because 1) the perspective of sentiment towards Java-centric outside Java, 2) the South Sulawesi Provincial Government is a good place because it won the Zona KHAS (Zona Kuliner Halal, Aman dan Sehat) in 2023(Komite Nasional Ekonomi dan Keuangan Syariah, 2024). For the objective of our research, we chose LPH LPPOM MUI in the province because the number of halal certification applicants at the LPH is 10 times greater than at other LPHs (UIN SGD 2025), which clearly shows that there is a very large gap for halal certification examiners. We then analyzed the sentiment in the Google Trends search for halal certification applicants at LPH LPPOM MUI. Therefore, further research is needed to measure the existence of LPH LPPOM MUI as the oldest LPH providing halal inspection services. The aim is to contribute to other LPHs so that they can provide the same services as LPPOM MUI.

Literature Review

Halal concept

It is very important to have a clear understanding of the concept of halal as well as the concept of Haram in Islam and why it is important for Muslims. According to Islam, things that are not considered Haram are Halal, which in turn gives rise to the importance of understanding the concept of Haram, halal literally means "permissible" - and in translation refers to "halal" according to followers of the Islamic religion. The antonym of halal is haram, meaning that it is unlawful or forbidden(Rajagopal et al. 2011; Badruldin et al. 2012; Sherwani et al. 2018; Parvin Hosseini et al. 2020; Usman 2020; Ahmadova & Aliyev 2021; Katuk et al. 2021; Muneeza & Mustapha 2021). With the recent increase in awareness among Muslim communities about the concept of halal, there has been a demand for a halal certification system. This is considered important for customers who prefer to consume halal products because it guarantees that the food has been processed and prepared in accordance with the Sharia provisions and procedures (Zulfakar et al. 2019).

Since the Halal concept is an integral part of Islamic Marketing, an important question arises about how to adapt the halal phenomenon to existing marketing and branding concepts (Ahmadova & Aliyev 2021). A halal lifestyle seeks to promote living in accordance with Islam,

where the regulation of alcohol and animal fats in cosmetics, among others, is a major concern. The third category, halal services, includes finance, hospitality (e.g., hotel business), and logistics (Thomas & Selimovic, 2015). Thus, the law of fulfilling a halal supply chain is mandatory (fardhu) for every Muslim who fulfills certain requirements. One of the words of the Allah SWT, which commands zakat, is found in QS. Organizations and businesses must follow customer needs, demands, and lifestyles to survive (Ladewi et al. 2020).

Halal certification

The authenticity of a product can be verified using various laboratory analytical tools. However, these tools are not available and are accessible to general consumers, particularly during their purchasing activities. Therefore, the most accessible and visible method to verify halal authenticity is product labeling and certification (Zulfakar et al. 2019). Halal certification is needed to make Muslim consumers aware that the products they consume are prepared using halal methods and a halal guarantee system. This process aims to detect and eliminate all haram elements (Muneeza & Mustapha 2021). Halal certification has been variously defined in relation to the processing and manufacture of not only food or any food substance, but also cosmetics and medicines, with Sharia compliance as the basis.

According to Muneeza and Mustapha, (2021), Halal certification, the process of certifying products or services, is stated by Sharia law. By this definition, any action aimed at ensuring consumable goods and services are produced in accordance with the Sharia provisions that constitute halal certification. Halal certification refers to the inspection and verification of food processes starting from preparation, slaughter, materials used, cleaning, handling, disinfection, processing and storage, transportation and distribution, and management practices in which the food has been prepared from ingredients permitted in a clean and hygienic manner according to law. It also supports credible Islamic bodies that the product is suitable for Muslim consumption (Zulfakar & Talib 2014; Parvin Hosseini et al. 2020).

Literature and phenomena gap in the provision of halal certification in Indonesia

Currently, there are more than 400 halal certification organizations worldwide, and various halal standards have been developed locally, regionally, and internationally (Muneeza & Mustapha, 2021). The characteristics of halal certification bodies do not have clear standards because many are owned by the public, such as government or private institutions (Muneeza & Mustapha, 2021).. In Pakistan, the National Accreditation Board of Pakistan is responsible for registering halal certification institutions, while in Brunei, the Halal Food Supervision Division under the Ministry of Religious Affairs is responsible for ensuring all businesses in Brunei that produce, while in Malaysia, such as Jabatan Kemajuan Islam Malaysia (JAKIM)(Katuk et al., 2021).

In Indonesia, it was initially introduced by the "Food and Drug Cosmetics Assessment Institute of the Indonesian Ulema Council" in 2005 (https://halalmui.org); however, since 2019 the Halal Product Assurance Organizing Agency (BPJPH) has taken over the halal certification process, where the halal certification body moved on a people-driven basis. This has caused a transition in the provision of halal certification, which has an impact on public sentiment. Other public sentiments can be in the form of commercialization of the halal logo, where the public assumes that the requirements for halal certification in the form of a logo have indirectly become substantial requirements that must be met by businesses (Katuk et al., 2021). Other issues that must also be faced include concerns of halal consumers regarding rampant cases of halal certification fraud and physical contamination of halal food products (Zulfakar et al., 2019), additional costs for consumers that ultimately burden producers in registering themselves with halal certification institutions(Parvin Hosseini et al., 2020), and awareness of religious commitment to pay more for halal-certified food.

Based on these issues, many researchers, such as Haleem et al. (2020), Khan et al. (2019b), Tieman (2015), and (Prabowo et al. 2015) have investigated the inhibiting factors in fulfilling the halal certification process. For example, Prabowo et al. (2015) is suitable for inhibiting the factors at that time. Meanwhile, in this study, we found another factor for which there has been no research

that examines successful strategies in dealing with negative public sentiment during the transition from people-driven to government-driven, as is currently being experienced by Indonesia.

Research Methods

The research location was LPPOM MUI South Sulawesi, Jalan Sultan Alauddin Makassar. The research used in this study is field research with mixed-method research that combines two quantitative and qualitative methods. The mixing method was used to further explore the phenomena that occur in society, as shown in Figure 1. The flow chart shows the phenomenon of sentiment towards the halal logo or halal certificate, based on which we analyze it using the first method, namely, ARIMAX. After obtaining the forecast results, we confirm our findings through a qualitative approach, where the SWOT and AHP methods are used to determine the extent to which LPPOM MUI South Sulawesi formulates strategies when hit by sentiments in the community.
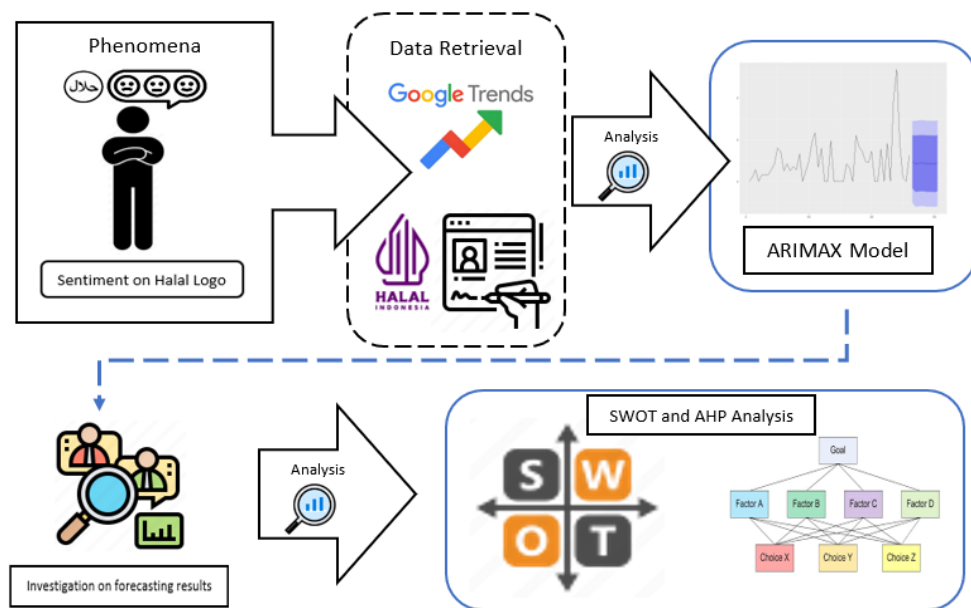
Figure 1. Flowchart method
Sources: Authors'construct

These two methods were used in accordance with the objectives of this research: first, to predict demand for halal product inspections at LPPOM MUI South Sulawesi with sentiment variables on Google Trends using the ARIMAX method, according to Suhermi et al. (2019)which the use of trend searches on Google provides precise accuracy in predicting the trend of an event, especially in business activities. The reason we use ARIMAX is to see the sentiment towards halal certification on social media, which will shake the interest of MSMEs in registering their products with LPH, so we try to dig up past data experiences from the number of registrants at LPPOM MUI (2018-2023) South Sulawesi to provide an overview of other LPHs regarding the issue of halal certification. ARIMAX is suitable for past data experiences, where X itself is a shock from the sentiment of halal certification on social media. The autoregressive integrated moving average with exogenous variables (ARIMAX) model is formulated as follows:

$$Y_t = \alpha + 1\sum_{i=1}^{p} \phi_i Y_{t-i} + \sum_{j=1}^{q} \theta_j \varepsilon_{t-j} + \sum_{k=0}^{r} \beta_k X_{t-k} + \varepsilon_t \tag{1}$$

Where Y_t is The number of halal certification applicants at time and X_t is Sentiment data on halal certification from Google Trends at time. ϕ_i is the autoregressive (AR) coefficient for lag and θj is the Moving Average (MA) coefficient for lag.

In Figure 1. The results of the ARIMAX analysis were confirmed through qualitative analysis. The first analysis is to determine LPPOM MUI South Sulawesi's Strength, Weakness,

Opportunities and Threats (SWOT) strategy for increasing halal certification applicants. Data were obtained through in-depth interviews and observations with the research department of LPPOM MUI, South Sulawesi. After identifying the interview results, we analyzed the most important SWOT strategy using Analytical, which is a pairwise analysis or selecting effective decisions through assessment expert judgment (Saaty 1987). One of the strengths of the AHP is the possibility of emitting quantitative and qualitative criteria and alternatives on the same preference scale (Ishizaka & Labib 2011). To determine the priority scale in AHP, we interviewed three staff members from LPPOM MUI South Sulawesi along with one academic. The four experts must show the consistency ratio with the benchmark of the consistency value of the Consistency Index (CI) and consistency ratio. Both the CI and CR values show the uniformity of their level of expertise.

$$CI = \frac{\lambda_{maks} - n}{n - 1}$$

$$CR = \frac{CI}{RI} \; if \; CR \; \leq \; 10\% \; declared \; consistent$$

where λ_{maks} is the maximum eigenvalue, n is the number of dimensions being compared, CR is the Consistency Ratio, and RI is a random index.

Results

Arimax analysis

Figure 2 shows a list of halal-product inspection registrants during the two important events. In 2019, LPPOM MUI South Sulawesi became a halal inspection agency; however, business actors' interest in LPPOM MUI remained large, in line with LPPOM MUI South Sulawesi's efforts to collaborate with several agencies. However, registration has started to decline owing to the existence of halal assistants in 2022. In addition, the image below shows the sentiment of Indonesians towards the halal logo. The author took data from Google Trends, and the results show that an event occurred that shook the halal logo, namely when there was a change in the logo itself, so this data was used as a sentiment regarding registration for the inspection of halal products.
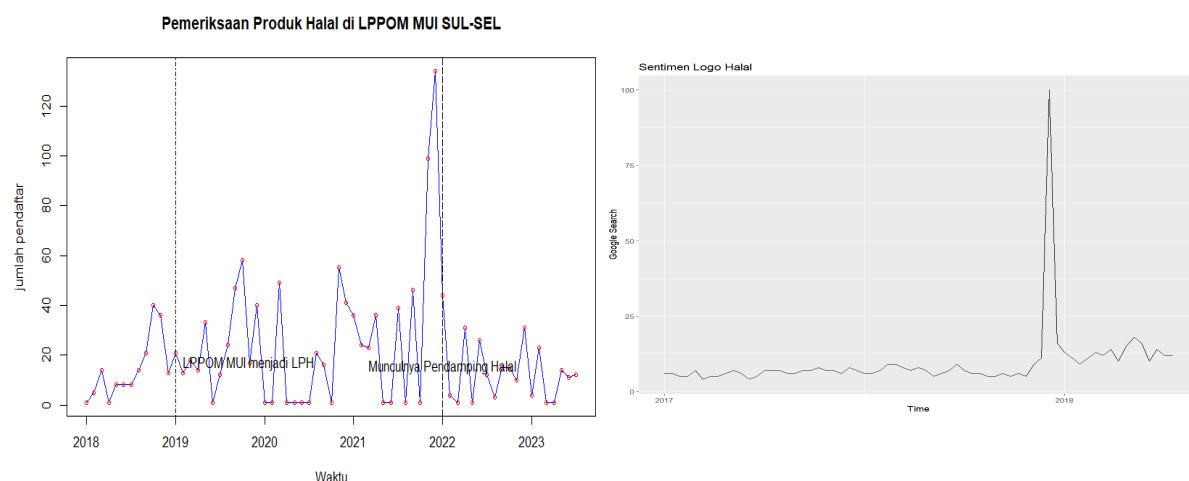
Figure 2. Image of product inspection registrants at LPPOM MUI South Sulawesi and halal logo sentiment on Google Trends
Sources: R Studios software

The first step is to conduct a linear regression test, and the next step is to calculate the remainder (residue) in the regression results. The residue was tested to determine if it was stationary. Therefore, a stationary test was carried out, and the results concluded that the data were not stationary for the variants, with a p-value of 0.199. Therefore, the next step was to differentiate between the data. Based on the results of the differencing carried out, the data are stationary, and

this is also confirmed by the residual test (Residue) with the Box-Ljung test showing 0.01, indicating that the data are stationary. Subsequently, we determined the order using the Autoarima package in the R Studio program, and the results obtained were as follows:

Table 1. ARIMAX order coefficient results (0.0.1)

Coefficients:		s.e.	**T**	sign.
ma1	0.3292	0.1360	2.4206	0.0191
intercept	24.2465	.9235	44.9246	0.0000
xreg	-0.2300	0.2558	-0.8991	0.3728

Source: Data processed

The ARIMAX analysis results convey the ARIMAX (0,0,1) model specification with an MA(1) error in the regression. This means that the model is a regression model with ARIMA effects on error. Coefficients ma1: The coefficient for the MA(1) component was 0.3292. This parameter of the Moving Average (MA) model shows the impact of previous error values on the current prediction. intercept: The intercept (intersection of the regression line with the y-axis when xreg = 0) was 24.2465. The xreg coefficient is -0.2300. The T-value is -0.8991, which is not significant at the significance level (of 0.05. = 0.3728 > 0.05). This shows that there is no significant relationship between the xreg variable and response variable at a significance level of 0.05. This insignificant result is caused by the relationship between the covered variable and the seasonal pattern, as from the results of our interview with LPPOM MUI South Sulawesi that the number of registrants could increase significantly if there were collaboration events with the government. Overall, this ARIMAX model has a significant MA(1) component in predicting the response variable, indicated by the ma1 coefficient, which is different from zero. The exogenous variable (xreg) does not have a significant effect, with a negative coefficient of (-0.2300). This shows that registrant behavior is influenced more by internal factors or previous patterns (MA1) than by public opinion regarding the halal logo.
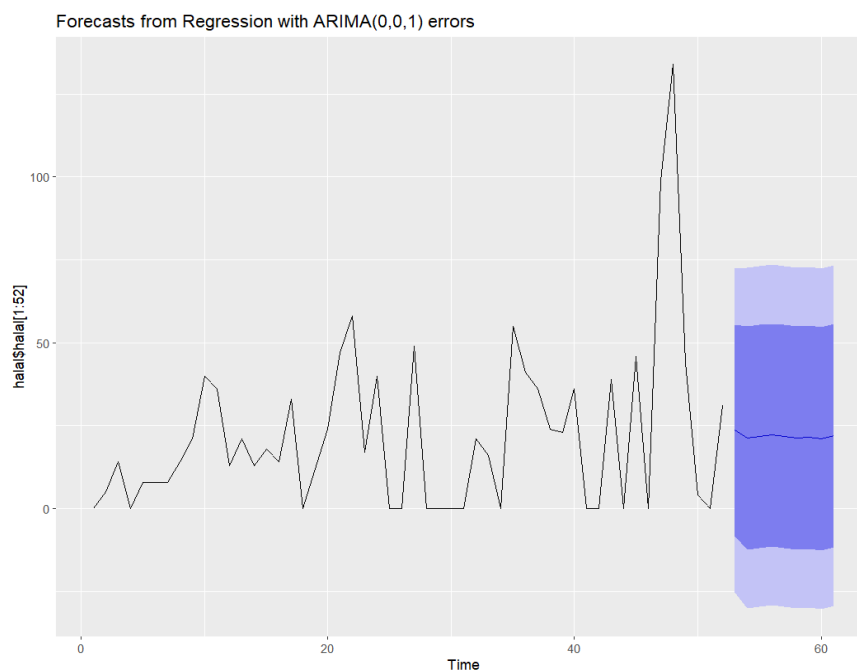
Figure 3. Forecasting results with ARIMAX (0.0.1)
Sources: R Studios software

Subsequently, we tested this using the Box-Ljung test. The results of the Box-Ljung test showed that the p-value (0.9809) was very high. This shows that there is insufficient statistical evidence to reject the null hypothesis in the Box-Ljung test. The null hypothesis in this test is that there is no significant residual correlation in the data, meaning that the residuals are considered

autonomous (i.e., have no correlation in time). In the context of time series analysis, the Box-Ljung test results with a high p-value are a good indication. This means that the residuals from this model do not exhibit a significant correlation over time. In other words, the model (or data) may have succeeded in addressing the problem of temporal correlation in the residuals.

SWOT analysis of LPPOM MUI South Sulawesi

SO strategies

a. Carry out a massive approach to restaurants (S1, S3, O1, O2). The first SO strategy is to look at the strength of LPPOM MUI, which has complete equipment for halal inspection of restaurants and restaurants, with the largest Muslim market segmentation, and massive activities need to be carried out.
b. Data integration is carried out between BPJPH, halal inspection agencies, cooperative industrial services, and medium enterprises to carry out data collection and market share segmentation (S3, O3, O5). The LPPOM MUI has complete equipment, so technology must be used to collect data. Data collection can be performed at the level of large and small entrepreneurs, and this data tracing can be carried out as a strategy for segmenting the market to offer halal certification.
c. Providing rewards for restaurants that are consistent and committed to halal certification (S2, O4, O5). The LPH-LPH must collaborate between governments by creating a reward scheme, with this reward scheme providing good service for Muslim consumers and entrepreneurs.

WO strategies

a. Conducting socialization and dissemination roadshows between BPJKH and other inspection institutions in the region (W1, W2, W4, O1, O2, O4, O5). BPJKH has the highest LPH regulation. BPJKH's active role must be carried out massively by collaborating between LPHs, where LPH's own weakness is the lack of cooperation, promotion, and dissemination in places far from the center of Makassar City.
b. Collaborating with researchers to conduct research related to market segmentation (W3, O1, O2). LPH and BPJKH must conduct internal research related to market segmentation. The market segment for halal certification is entrepreneurs; by carrying out this activity, the halal awareness target will also increase.
c. Carrying out massive promotions on the Internet regarding halal products (O3, W4). The use of technology in the current era cannot be separated from massive promotional activities, the promotions obtained are in the form of discounts on halal certification registration or promoting the halal concept for Muslim entrepreneurs and consumers, this increases halal awareness if done correctly.

ST strategies

a. Collaborate with the government to provide sanctions for those using fake halal logos. (S2, T1). There are many phenomena of irresponsible use of fake logos, but there is no firm action against those who do this. The government's role is urgently needed to enact legislation to minimize the presence of fake halal logos.
b. Carry out massive da'wah and outreach to the public regarding the importance of halal certification (S1, S2, T2, T3). Da'wah activities are synonymous with the role of community leaders, especially preachers, preachers and kyai. They form the basis for promoting massive socialization directly to the community.
c. Collaborating with the Ziswaf Institute, BPJKH, and halal inspection institutions to provide discounts or rewards for businesses constrained by halal certification costs (S2, T6). The cost of halal certification is a barrier for entrepreneurs in carrying out halal certification, especially in the restaurant market. So far, discounts and rewards for entrepreneurs have never been provided, except for the free registration provided by the government for small entrepreneurs.

WT strategies

a. Enter into a cooperation agreement or MOU between halal inspection institutions regarding information sharing and human resource (HR) development (W1, T3). Human resource development is important for sharing information between institutions. The gap between LPH LPPOM MUI and other LPHs in terms of experience can be covered by conducting information-sharing activities.
b. Collaborating with researchers related to consumer fraud using fake logos (W3, T1). This research is useful for reducing fraud committed by naughty entrepreneurs.
c. Collaborating with researchers to conduct annual research to determine the literacy level of awareness and understanding of halal products in the community (W3, T2, T4, T5). The literacy level of Muslim consumers regarding halal food consumption is very low, and it is necessary to carry out a strategic plan by conducting research every year to measure Muslim consumer literacy.

Table 2. LPPOM MUI strategy plan to increase demand for halal product inspections

	Strengths	weaknesses
	1. Is the first halal inspection agency in Indonesia (observation results) 2. Has an extensive network between government agencies (observation results) 3. Have complete equipment for halal inspection for restaurants and restaurants (Interview results)	1. Lack of cooperation between Halal Inspection Institutions (Rahman et al. 2012; Ab Talib and Hamid 2014; Ab Talib et al. 2015; Khan et al. 2019b; Susanty et al. 2020) 2. Distance to the Halal inspection agency outside Makassar city (Prabowo et al. 2015; Khan et al. 2019a) 3. Lack of research and design for halal products (Khan et al. 2019a; Khan et al. 2019b; Haleem et al. 2020) 4. Lack of Promotion, Socialization and Dissemination regarding halal certification (Prabowo et al. 2015; Khan et al. 2019a)
Opportunities 1. Growth of the Muslim population (Ab Talib and Hamid 2014) 2. Potential for halal global trade (Ab Talib and Hamid 2014; Zailani et al. 2017) 3. Use of technology in the halal industry (Ab Talib and Hamid 2014) 4. The existence of Halal certification provides extra service for consumers (Zailani et al. 2017) 5. Strong government support from regulations and policies (Ab Talib and Hamid 2014)	SO 1. Carry out a massive approach to restaurants and restaurants (S1, S3, O1, O2) 2. Carry out data integration between BPJPH, halal inspection agencies, cooperative industrial services, and small and medium enterprises to carry out data collection and market share segmentation (S3, O3, O5) 3. Provide rewards for restaurants and restaurants that are consistent and committed to Halal certification (S2, O4, O5)	WO 1. Conduct a socialization and dissemination roadshow between BPJKH and other inspection institutions to the regions (W1, W2, W4, O1, O2, O4, O5) 2. Collaborate with researchers to conduct research related to market segmentation (W3, O1, O2) 3. Carrying out massive promotions on the internet regarding halal products (O3, W4)
Threats 1. Fake halal logo (Khan et al. 2019a)	ST 1. Cooperate with the government to provide sanctions for those who use fake halal logos (S2, T1)	WT 1. Enter into a cooperation agreement, or MOU between halal inspection institutions regarding information sharing

|		
2. Sentiment/mindset towards the halal logo (interview results) 3. Competition from other halal inspection institutions (interview results) 4. Lack of business knowledge about halal concepts (Rahman et al. 2012; Manzouri et al. 2013; Prabowo et al. 2015; Khan et al. 2019a; Khan et al. 2019b) 5. Lack of consumer and business awareness of the importance of halal certification (Manzouri et al. 2013; Khan et al. 2019b; Haleem et al. 2020) 6. Financial constraints and inspection costs for MSEs (Rahman et al. 2012; Manzouri et al. 2013; Prabowo et al. 2015; Zailani et al. 2017; Haleem et al. 2020)	2. arrying out massive da'wah and outreach to the public regarding the importance of halal certification (S1, S2, T2, T3) 3. Collaborate with the Ziswaf Institute, BPJKH, and halal inspection institutions to provide discounts or rewards for businesses that are constrained by halal certification costs (S2, T6)	and human resource development (W1, T3) 2. Collaborate with researchers related to research on consumer fraud using fake logos (W3, T1) 3. Collaborate with researchers to conduct annual research to determine the literacy level of awareness and understanding of halal products in the community (W3, T2, T4, T5)

Source: Authors' own work

Table 3. IFAS and EFAS matrix

IFAS	EFAS
1.65 Strenghts	1.30 Oppurtunities
2.13 weaknesses	2.30 Threats
-0.48	-1.00

Source: Data processed

In the table above, it is found that the IFAS Strategy is better than EFAS. This is indicated by the IFAS SWOT score of -0.48, which is greater than the EFAS score of-1.00. However, the score was negative. Thus, it can be concluded that weaknesses and threats are more serious problems than potential and strengths are. This is illustrated in the following figure.
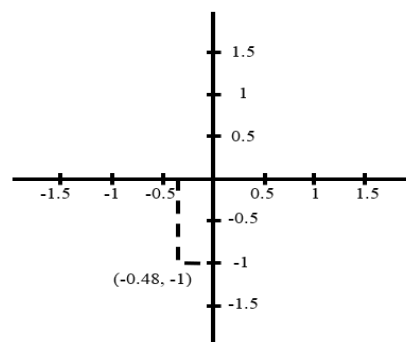

Figure 3. Position of LPPOM MUI South Sulawesi on the SWOT Curve
Sources: Data processed

In Figure 3. It can be concluded that LPPOM MUI South Sulawesi is in Quadrant IV, namely, on the defensive side, which is very unprofitable. Quadrant IV is the most avoidable situation, because business units face various internal and external problems. Therefore, it is necessary to improve the community's halal awareness, especially for business people.

Analysis of the strategy hierarchy of LPPOM MUI South Sulawesi in increasing halal certification applicants

Strategies that can be carried out hierarchically are based on the score per item. Based on the results of the hierarchical analysis measurements (Figure 4), the SO strategy that takes precedence is SO2, namely, data integration between institutions for market share segmentation, followed by SO1, a massive approach to restaurants and eateries. SO3 rewards those who are consistent and committed to halal certification. Based on the results, the inconsistency was below 0.1, indicating that this result can be recognized (Figure 5). In the WO Strategy, the WO1 Roadshow, socialization, and dissemination to regions is the main priority that must be prioritized. Next is WO3 Massive promotion on the Internet related to halal products, and the last is WO2, namely carrying out research activities related to market segmentation.
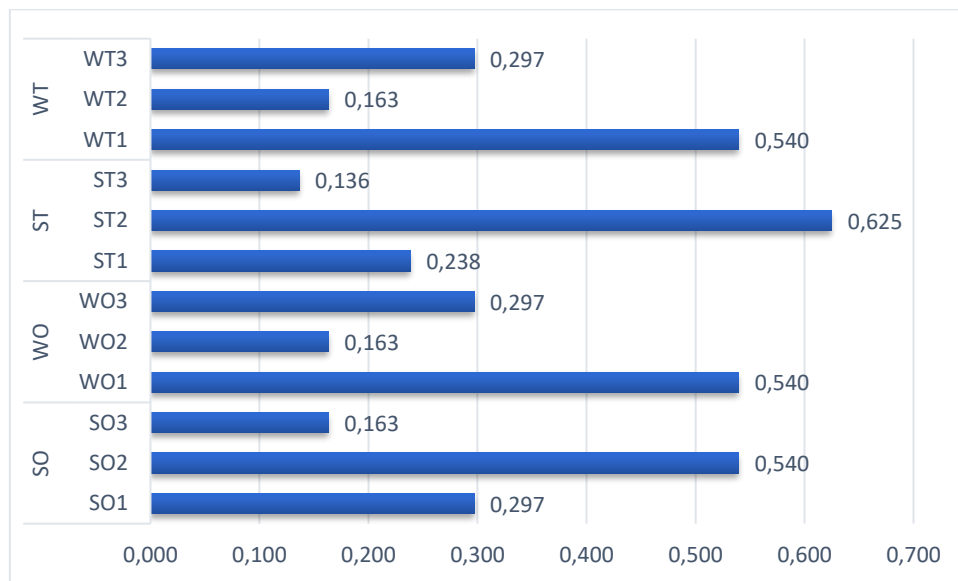
Figure 4. AHP analysis of SO, WO, ST, and WT strategies
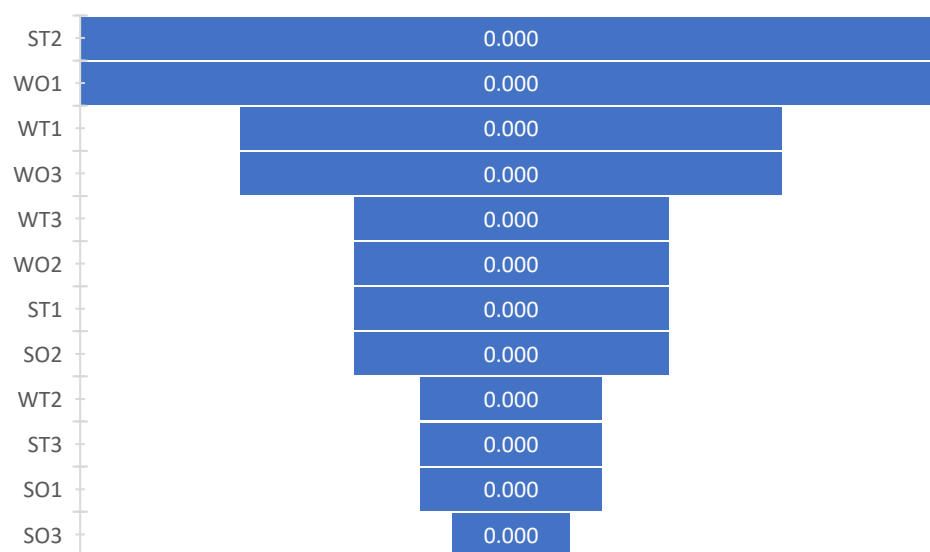Source: Authors' own work
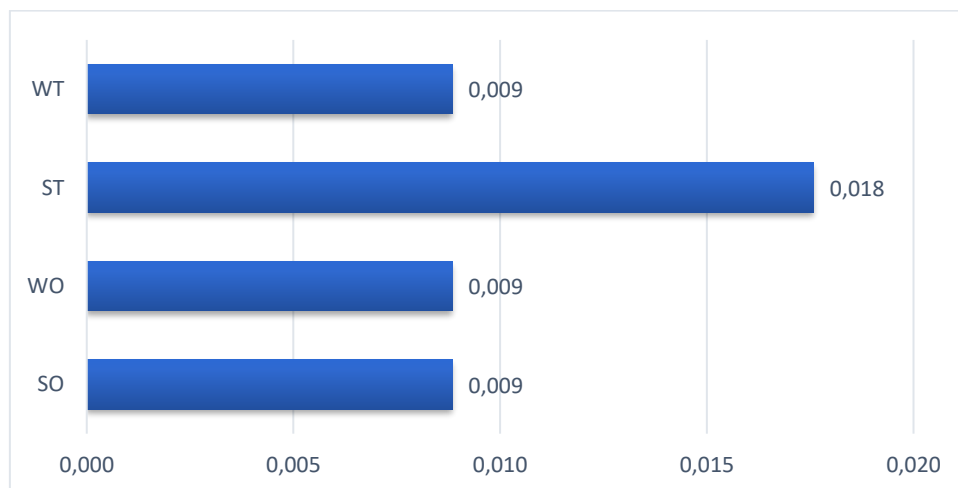
Figure 5. Inconsistency Result
Source: Authors' own work

In the ST Strategy, ST 2 Da'wah and massive outreach regarding the importance of halal certification are the priority scales that must be carried out by the LPH. Next are the ST1 Sanctions for those who use fake halal logos. The last one is discounts or rewards for businesses hampered by the cost of halal certification. In the WT Strategy, WT1 is a priority for LPH to carry out a defensive strategy, namely a cooperation agreement or MOU between institutions regarding

information sharing and human resource development. Next is WT3 Annual research to determine the level of literacy awareness and understanding of hala products, and the last is WT2, which conducts research on consumer fraud using fake logos.

In the final section, the results of this research reveal that, of the 12 SWOT strategies proposed, the most advanced hierarchy implemented is ST2 and WO1, namely carrying out massive da'wah about the importance of halal certification in areas outside the city of Makassar. The next is WT1, namely, improving human resources and carrying out massive promotion of WO3 on social media. The next hierarchy comprises WT3, WO2, ST1, and SO2. Then, we continue with WT2, ST3, and SO1. The lowest level of the hierarchy is SO3, which provides discounts and rewards for businesses that are constrained by costs. The limitation of this research is the lack of interest from BPJPH to collaborate in providing data on all certification registrants, so that the unit of analysis that can be researched is only LPPOM MUI South Sulawesi. Suggestions for further research include conducting research on the level of halal awareness in society.

Figure 6. AHP analysis for all strategies
Source: Authors' own work

Discussion

The research results show that LPH will be successful in attracting consumers if it carries out many massive promotional activities and builds strong networking with the government. In line with the research of Talib et al. (2019), coercive isomorphism or pressure originating from the influence of regulations on the formation of new LPHs has made LPPOM MUI South Sulawesi intensify promotional activities in various industries that collaborate with government agencies. In addition, based on normative isomorphism or pressure from Muslim consumers, LPPOM MUI South Sulawesi provides easy access to inspections. The results Badruldin et al. (2012) also show that good service efforts have an impact on people's trust in registering their businesses for halal certification inspections.

The research results also show that the alliance strategy between LPH (ST3) is very much needed to make the transition period a success in realizing a one-stop halal certification provider. Therefore, the role of LPPOM MUI is central to protecting the new LPH without thinking of them as business competitors. This is in line with the research Zulfakar et al. (2019) on halal certification providers in Australia that many institutions stopped operating due to competition between institutions because the institutions were founded on ethnic and community affiliations. On the other hand, government support in terms of policy will help make this alliance strategy a success. The success of Malaysia (Parvin Hosseini et al. 2020), Pakistan, and Brunei Darussalam (Katuk et al. 2021) in managing halal certification institutions eliminates doubts in the minds of consumers about the authenticity of certification bodies and products, and an efficient and credible halal

certification system (Badruldin et al. 2012), which is carried out by the Indonesian government to seek to standardize halal inspectors.

Conclusion

Based on the results of the ARIMAX analysis, sentiment towards halal certification has a negative but insignificant effect on registrants at LPPOM MUI, South Sulawesi. This insignificance is due to the performance of the LPPOM MUI South Sulawesi in promoting halal certification based on seasonal patterns. This shows that registrant behavior is influenced more by internal factors or previous patterns than by public opinion regarding the halal logo. The SWOT analysis shows that weaknesses and threats are more serious problems than potential and strengths. For this reason, we recommend other LPHs based on the AHP analysis to conduct massive da'wah about the importance of halal certification in various regions through social media strategies and word-of-mouth promotions by religious leaders and influencers. This study contributes to science in the form of knowledge about the position of marketing science in improving the performance of halal certification institutions. Our research also has shortcomings. It is hoped that further research will analyze or predict registrants in a time series based on data from all over Indonesia, as well as marketing innovation research to raise public awareness about halal certification.

Author contributions

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