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PERSPECTIVE OF GRAVITY MODEL TOWARDS HALAL EXPORT: A CONCEPTUAL STUDY

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ABSTRACT

The first fundamental in Islam is that all things created by the almighty Allah s.w.t. are permissible or halal, except those that are explicitly prohibited in the Holy Quran or hadith. Another interesting concept closely connected with the halal concept is the safety and quality products and conducts better known as toyyiban. Hence, the halal concept should include toyyiban, or the better terms are Halalan Toyyiban, which can be translated as permissible and wholesomeness Meanwhile, the Halal industry is defined as an industry that produces and offer good quality products and services which under Sharia law. Sharia law is the law that governs Muslims' everyday conducts. The Halal industry includes sectors such as food, cosmetics, ingredients, pharmaceutical, chemicals, livestock, logistics, tourism, and most notably the Islamic finance and banking sector Halal exports are growing steadily while the performance is still very far from the targeted growth. Thus, an understanding of the determinants of Halal export flows is essential. This study aims to investigate the nexus between Gross Domestic Product (GDP), Muslim population, Halal Certificate, and distance of Halal export. The method employed in this study is the Qualitative method. Content analysis is formed to prove the relationship between those independent variables with Halal export. Limitations and future study recommendations were discussed at the end of this research.

Keywords: *Halal export, Gross Domestic Product (GDP), Muslim population, Halal Certificate, Distance*

1. INTRODUCTION

1.1 Halal

The term 'halal' comes from the Arabic word namely *halla, yahillu,*

hillan, wahalalan which are defined those words as allowed or permissible by the Shariah law. In addition, referring to Shariah law, every Muslim must consume things whether it is food or clothing or cosmetic products or other comes from a halal source (Azam & Abdullah, 2020). Halal is a concept derived from the Quran and hadith. Halal is very well known for the concept of *halālan tayyiban*, that is, the provisions of law that are halal and haram belong to Allah SWT. Then, the practice of *halalan tayyiban* in Islam itself is according to products or activities that must be allowed or prohibited based on the Islamic laws (Abdullah & Alias, 2019). More than that, according to Portal Halal Malaysian, halal is derived from a phrase in Arabic that means permitted or permitted by Islamic law. Halal in Malaysia is also related to many types such as Food and Beverage Products, Consumer goods, Food premises, and Slaughterhouse.

In Muamalah, Muslim society mostly entrepreneurs and food producers are responding to consumers by implementing the practice of *halalan tayyiban*. They are very concerned about product manufacturing operations to ensure that the halal aspects have fully complied with Islamic requirements. The concept of *halalan tayyiban* is also a benchmark to determine the quality and compliance of the process carried out (Mustaffa, 2019). The concept of '*Halalan Toyyiban*' also encompasses safety, cleanliness, and quality originating in Surah al-An'am, verse 145; al-'Araf, verse 157; al-Maidah verses 1, 4, 5, and 88 which enlightens from these verses that everything halal is permissible unless there is shred definite evidence that it is haram. (Masood & Rahim, 2019).

In Malaysia halal plays an important role in pursuing the global market according to the 12th Malaysia Plan. Government planning to conduct halal screening through the accreditation of halal professionals under the Halal Professional Board (HPB), Department of Islamic Development Malaysia (JAKIM) to support halal export more success in the global market. JAKIM will restructure based on the latest regulations and emphasize halal in terms of professional practices, standards, codes of conduct, and competency assessment. (Bernama, 2021).

1.2 Export

International trade contributes a large part to the world economy. The outcomes of exports and imports made by a country can change the country's economy from a low-income category to an upper middle-income category such as Malaysia. The United States, European Union (EU), and Japan have long collaborated with Malaysia in international trade and assisted Malaysia to overcome the global economic and financial crisis in 2008 and 2009 (Bakar,

Abidin, & Haseeb, 2015).

Export trade has established bilateral relations between Malaysia and the Organization of the Islamic Cooperation (OIC) countries in developing their respective economies by holding international trade activities. Therefore, export plays a role to support Muslim countries to raise their income. OIC countries developed with a good income. The economy of OIC countries increase followed by Muslim average per capita income (GDP) has risen from USD$1763 to USD$10,728 (1993 to 2015) and the 57 OIC countries have a combined GDP of USD27.9 trillion. Then Muslim 15 top countries (Table 1). Demand from the customers from Muslim countries makes growing GDP in some of the countries shown in Table 1 the top 15 countries and their Muslim population (Azam & Abdullah, 2020).

Table 1: Top 15 Muslim Countries with Highest GDP and Muslim population

Rank	GDP (PPP) in US$ Billion				Population in Million	
	Country	2018	2019	2020	Country	(2016)
1.	Indonesia	3,498.80	3,789.30	4,103.30	Indonesia	228.27
2.	Saudi Arabia	1,913.50	2,015.60	2,124.50	India	265.78
3.	Turkey	1,828.30	1,933.20	2,043.70	Pakistan	195.87
4.	Islamic Republic of Iran	1,641.00	1,750.20	1,866.30	Bangladesh	149.87
5.	Nigeria	1,325.80	1,421.20	1,525.90	China	137.8
6.	Egypt	1,193.20	1,279.60	1,372.90	Nigeria	130.55
7.	Pakistan	1,123.40	1,207.50	1,297.70	Egypt	88.83
8.	Malaysia	984.70	1,056.46	1,133.20	Turkey	79.34
9.	United Arab Emirates	743.00	786.70	834.40	Iran	78.71
10.	Bangladesh	740.90	810.00	883.30	Ethiopia	50.85
11.	Iraq	695.20	763.80	836.10	Sudan	40.84
12.	Algeria	671.30	710.50	751.10	Algeria	40.68
13.	Kazakhstan	499.70	532.05	568.05	Iraq	37.72
14.	Qatar	385.90	407.20	427.60	Morocco	34.35
15.	Morocco	329.00	353.8	381.0	Afghanistan	33.4

Source: http://www.muslimpopulation.com/

Export in Muslim countries is also related to the halal industry that the country had. The annual growth rate for the halal industry in Malaysia by 2010 increased positively compared to 2015. Figure 1 shows the number of Muslim countries that developed halal export products increased from 2010 until 2015 according to a census study 2016.

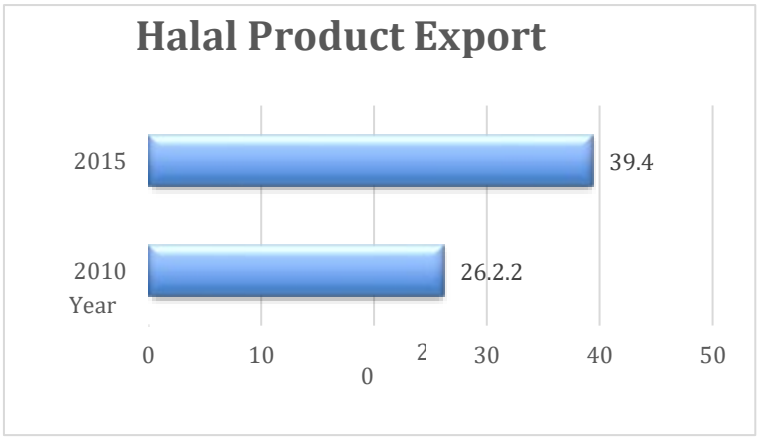

Figure 1: Halal Product Export, Economic Census 2016 Source: Department of Statistics Malaysia (DOSM)

1.3 Problem Statement

The 12th Malaysia Plan (12MP) in 2020 has set an expected export revenue of RM56 billion in 2025 compared to RM30.6 billion in 2025. This is seen in the halal industry which can increase the larger global halal market with the support of the community with various competitive products (Bernama, 2021). Halal firms, especially global companies and multinational companies (MNCs) are the backbone of promoting halal export-oriented products and services through the Digital Free Trade Zone (DFTZ), Port Klang Free Zone (PKFZ), and halal e-commerce platform (Bernama, 2021).

The Halal industry is spreading in every aspect of business and has become a potential growth sector globally. The growth of the Halal industry is driven by certain forces which are the growing Muslim population size, GDP growth of Muslim countries, emerging halal markets and players, Muslim lifestyle offerings, and the Halal ecosystem. Thus, understanding the determinants of Halal export flows is essential. This study aims to investigate the nexus between Gross Domestic Product (GDP), Muslim population, Halal Certificate, and distance of Halal export.

2. LITERATURE REVIEW

2.1 Gravity Model

The first economist who derived the gravity equation was Anderson in 1979 through the product differentiation model. Then, around ten years after in 1989, Bergstrand explored the microeconomic foundations of trade through the monopolistic competition models. Tinbergen (1962) and Poyhonen (1963)

implemented the concept of gravity equation in the field of international trade analysis involving European countries which was originating from Newton's gravitational theory established in 1687. (Ismail & Gencay, 2021; Shahriar, 2021). Karagoz and Saray (2022) stated that the gravity model belongs to the class of empirical models concerned with the determinants of interactions. Thus, general formulation explained the flow of goods, capital, people, etc. from one place to another place. Since then, the gravity model has been implemented and increasingly improved in empirical studies of Halal international trade flows such as Zainal et al., (2013); Masron et al., (2014); Mazlan and Hamzah (2015); Yunus, Ghaffar, and Kabir (2020); Ari and Sayar (2020).

2.2 Gross Domestic Product (GDP) and Halal Export

Gross Domestic Product (GDP) is one of the elements related to economic growth. GDP is the income gained from the production of products and services in a country. Generally, the economic size of a country is equal to GDP, GNP, or GDPC. According to Azam and Abdullah (2020), export is a major contributing element to the GDP of a country. Furthermore, the study exposed that the highest number of Muslim populations produced the highest GDP which was Indonesia. Besides, several studies supported a relationship between trade and its effect on the economy (Yunus, Ghaffar, and Kabir, 2020; Yunus and Ismail, 2009; Masron et al., 2014). Past research mostly applied the gravity model to foresee halal export as a dependent variable. For example, Mazlan and Hamzah (2015) also implemented the gravity model and proved a positive relationship between Malaysia's halal exports, the GDP, and the population size of the importing country. Another research in 2013 by Zainal Abidin et al. exposed that the GDP and the consumer price index of OIC member countries and Malaysia's trade-to-GDP ratio have a significant positive effect on trade.

2.3 Muslim Population and Halal Export

The Muslim population was expected to generate and boost halal export. According to Muyassaroh, Slamet, and Sakti (2021), the Muslim population drove the growth of the halal industry in Indonesia. Moreover, the growth of the halal industry can develop the national economy. In addition, Pratiwi, Hendayani, and Indrawati (2021) stated that there was a huge demand for the halal food industry caused by most of the Muslim population in Indonesia. A study by Nisha and Iqbal (2017) which was running in Bangladesh stated that Muslim consumers usually consumed Halal products and services such as food, lifestyle, travel, and financing. This phenomenon

generated opportunities in the era of Industry 4.0. Mujar and Hassan (2014) also stated that the rising volume of halal commodities cause by inclining demand from especially the Muslim population and it has greatly impacted the growth and development of the food industry in the country and the economy in general. A statistic of 61% Malaysian population was Muslims consumed Korean foods items such as ramyeon, confectionery, and kimchi were found to enjoy high awareness (Lee and Lee, 2020). The study also recommended that the Korean government should expand exports not only to Malaysia but to all Muslim regions. Thus, this proved that the rapid growth of the Muslim population around the world was one of the drivers of the expansion of the global halal market which incurred trade activities.

2.4 Halal Certificate and Halal Export

Pratiwi, Hendayani, and Indrawati (2021) clarified that Halal certification was demanded by both Muslim and non-Muslim entrepreneurs. This is because all domestic and imported food and beverage products should have a halal certificate starting from 17 October 2019 in Indonesia. On the hand, Halal certification started in the year 1974 in Malaysia. "The Halal certification was managed by the Department of Islamic Development of Malaysia. During the period, the duty of certification of Halal products is under the jurisdiction of the Research Centre of the Islamic Affairs Division of the Prime Minister's Office. A company with Halal certified product was given a letter from the above-mentioned division and only in 1994, the issuance of the Halal certificate and Halal logo was practiced. MS 1500:2004 (Malaysian Standard: Halal Food Production, Preparation, and Storage General Guidelines) was introduced in 2004. It was revised in 2009 with the addition of GMP and Good Hygiene Practices (GHP)." (Mazlan and Hamzah, 2015). Besides, JAKIM's roles were certifying Halal standards and issuing Halal certificates to four types of products and services likewise food and beverages products, consumer goods, food premises, and slaughterhouses. A Halal logo was exposed on the product labels the industries or products have been certified. A study by Azam and Abdullah (2020) mentioned that Malaysia's JAKIM has extended Halal certification to prescriptive medicines in 2017. This is because halal products becoming global demand and certifying bodies need to perform their responsibilities including testing, inspection, and certification services. Besides, with the Halal certificate and Halal logo, the products being exported are more trusted by the customers because quality guarantee (Lee and Lee, 2020).

2.5 Distance and Halal Export

Distance is a measure between trading pairs. If the distance is larger, thus higher transportation costs are incurred. Karagoz and Saray (2022) mentioned that the notion of distance does not only relate to the geographical distance which included transportation costs, but also transaction costs. Besides, there are variables employed as a dummy variable for each of the variables of having a common language, common border, being in the same territory, and same free trade arrangement. In addition, there are numerous inclusions of distance as an explanatory variable (Batra, 2004). Firstly, distance is a proxy for costs. Next, distance is an indicator of the time elapsed during shipment where perishable goods need to secure during transit time. Then, synchronization costs which involved when factories combine multiple inputs, the timing of these needs to be synchronized to prevent the emergence of bottlenecks. Hence, synchronization costs increase with distance. Other than that, transaction costs where distance may be correlated with the costs of searching for trading opportunities and the establishment of trust between potential trading partners. Also, cultural distance is affected by geographical distance and cultural differences. Cultural differences can impede trade in many ways such as inhibiting communication, clashes in negotiating styles, and others. The nexus between distance variable and Halal trade was proved by past studies in Malaysia such as Zainal et al., (2013); Masron et al., (2014); Mazlan and Hamzah (2015).

3. METHODOLOGY

This research takes a qualitative approach by systematically reviewing all related literature from multiple databases. Two research questions were formulated to provide a clear and specific framework for examining the literature. To begin, what are the critical variables affecting Malaysian halal exports? Second, what is the proposed conceptual model for the Malaysian halal export determinants? The literature searched was randomly chosen from several databases for detailed review.

4. DISCUSSION

A conceptual model for the determinants of Malaysian halal export is developed based on a review of relevant literature. This study suggests that several factors, including Malaysia's gross domestic product (GDP), Muslim population, halal certificate, and distance, all play a role in determining the Malaysian halal export industry. The following is the proposed model for this study, as illustrated in Figure 1:

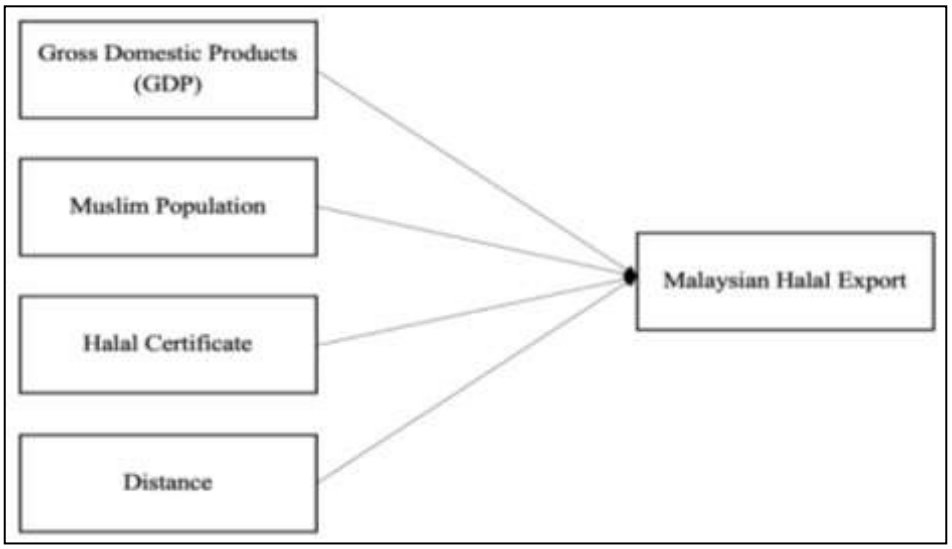

Figure 1: The proposed conceptual framework of Malaysian halal export

Thus, based on the proposed conceptual framework illustrated above, the study postulates the following hypotheses:

H1: Gross domestic product (GDP) has a direct positive and statistically significant relationship with Malaysian halal export.

H2: Muslim population has a direct positive and statistically significant relationship with Malaysian halal export.

H3: Halal certificate has a direct positive and statistically significant relationship with Malaysian halal export.

H4: Distance has a direct positive and statistically significant relationship with Malaysian halal export.

Essentially, this study used a gravity model to assess the relationship between two distant trading partners. Empirically, the gravity model, which has been used in many previous studies, is quite effective (Obashi, 2009). Gravity models are incredibly effective at explaining trade patterns and testing hypotheses, as the empirical component of using gravity models is to test hypotheses about bilateral trade flows between countries. Therefore, based on the gravity model, the value of halal exports into host country j from Malaysia i can be expressed as follows:

$$\mathrm{In}HalExp_{ij},t = \alpha_0 + \beta_1\mathrm{In}(GDPi,t * GDPj,t) + \beta_2\mathrm{In}MP_j,t + \beta_3\mathrm{In}HalCert_i,t + \beta_4\mathrm{In}Dis_{ij},t + \varepsilon_t$$

Where all variables are presented in natural logarithms. The dependent variable, $HalExpij,t$ represents the value of halal exports into the host country j from Malaysia. Independent variables include Malaysia's GDP ($GDPi,t$) times host countries' GDP ($GDPj,t$), the number of Muslim populations in the host countries (MPj,t), the number of the produced halal certificate ($HalCerti,t$) and the distance between Malaysia and host countries in kilometre ($Disij,t$).

We apply the static effect model with a small sample size, which entails selecting the best model from several competing models, including the fixed-effect model (FEM) and the random-effect model (REM). Although the pooling model is also worth considering, we predict that the final model will be either FEM or REM in most cases when there is a heterogeneous issue underlying the data. As a result, the Hausman test will be used to determine the final option. REM is preferred over FEM when the null hypothesis of orthogonality is true. In other words, REM will be chosen over FEM if the Hausman test is not rejected (Masron et al., 2014).

5. FINDINGS AND CONCLUSION

This paper aims to propose a conceptual framework by identifying a set of determinants of Malaysian halal export. According to an extensive review of available literature, there are four possible influences on Malaysian halal exports which were GDP, Muslim population, Halal certificate, distance. Further empirical research is required to determine whether all these factors significantly affect the study's dependent variable by applying a quantitative method. The finding of the future research expected to have positive relationship between the critical factors proposed. This is because, as before, factors of Gravity Model influence export, thus we aimed to prove the Gravity Model affect halal export. The limitation of this study is that we have limited ourselves to published articles, both academic and practitioner, that are accessible through the databases we have chosen. There may be articles that we are unaware of, and thus our interpretation of the proposed model for Malaysian halal export may be somewhat limited.

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