

A Review on Trade Performance: Influence of Distance and Muslim Population on Halal Exports

Anis Mardiana Abdullah*, Arlinah Abd Rashid** and Harlina Suzana Jaafar***

Malaysia has a very open economy and economic growth depends highly on trade. In order to stay relevant in the global supply chain to trade, the Malaysian Government has identified halal industry as a niche sector to drive growth. Although halal exports are growing steadily, the growth is still very far from the targeted growth. Thus, understanding the determinants of halal exports is important to further boost exports growth and help achieve the targeted growth. This is a concept paper to investigate the influence of distance and Muslims population to the demand of halal exports. The robustness of gravity model will be used to measure the influence of selected variables. Studies on halal economy, particularly halal export are rather scarce, thus this study will add on the body of knowledge on the halal industry. Analyzing the trend in the data, inference could be made that the shorter the distance between two trading partners, more trade will occur with an exception for Malaysia's major trade partners. Whereas, Muslims populations do not seem to exert a strong influence on halal export demand. Further investigations need to be done to measure the influence of both variables on halal exports demand.

JEL Codes: F14, L69 and Z10

1. Introduction

Malaysia has always been an open economy with its economic growth highly dependent on trade. It has become a preferred location for value chain in the global supply chain by offering low cost of labour and capital through fiscal incentives. As Malaysia's economic growth depends highly on trade, any risk that interferes with trade will have an impact on the growth. Thus, in order to remain competitive in the international market, Malaysia needs to stay relevant in the global supply chain or find a niche sector that it has an advantage in.

The emergence of Halal industry presented the perfect opportunity for Malaysia to position itself strongly in the value chain while growing a niche sector that it has already an advantage in. AT Kearney's in their report pointed out that "*Muslims are the fastest growing consumer segment in the world. Any company that is not considering how to serve them is missing a significant opportunity to affect both its top and bottom line growth.*" (A.T.Kearney 2007). Muslim's spending across sectors for 2015 was

*Ms Anis Mardiana Abdullah, Malaysia Institute of Transport, Universiti Teknologi MARA Selangor, Malaysia, Email: anismardiana@gmail.com

**Arlinah Abd Rashid (PhD), Arshad Ayub Graduate Business School, Universiti Teknologi MARA Selangor, Malaysia, Email: arlinah@salam.uitm.edu.my

***Harlina Suzana Jaafar (PhD), Director of Malaysia Institute of Transport, Universiti Teknologi MARA Selangor, Malaysia, Email: harlinas@salam.uitm.edu.my

Abdullah, Rashid & Jaafar

estimated at USD 1.9 trillion with food and beverages leading other categories at USD 1.17 trillion. This trend is expected to continue with an average increase of 8 per cent annually to reach USD 3.0 trillion worth of industry, according to the latest Global Islamic Economy Report 2016/17 (Thomson Reuters 2015).

A study by Pew Research Center, titled *The Future of World Religions: Population Growth Projections, 2010-2015* supported the projection by AT Kearney. The study reported that Islam will be the fastest growing religion in the world (Pew Research Center 2015). In the year 2050, Islam will become the second dominance religion in the world and will overtake Christianity and be the world's dominance by the year 2070. It is a rule in Islam that Muslims must adhere to halal requirement especially in their dietary consumption, and more than 70 percent of the Muslim population in the United States of America adhere to this regulation (Hussaini 2004; Minkus-McKenna 2007). Muslim must consume halal and practices it in everyday life, thus, a growing population of Muslim signal the potential increase in demand for halal products and services in the future.

Malaysia is the only country to date, that regularized and develops its halal industries as a state matter compared to other countries, where the authority of halal accreditation is under a non-governmental organization (NGOs) (Bergeaud-Blacker 2016). The Government starts to regularize the halal industry under the Trade Descriptions Act 1972 with two Regulations made under the act, namely, the Trade Descriptions (Use of Halal Expression) Order 1975 and Trade Descriptions (Marking of Food) Order 1975 which consider false label of halal as an offense (Zakaria 2008). The first halal certification in the form of halal logo was introduced in 1994 under the Department of Islamic Development Malaysia (JAKIM), and since then the demand for halal certification continue to increase. Malaysia's certification system is recognized internationally and has high weightage in maintaining Malaysia as the leader in the annual Global Islamic Economy Indicator (GIEI) produces by Thomson Reuters.

Acknowledging the great potential in developing and promoting halal products in the global market and leveraging on the existing well-developed infrastructure of Malaysia's halal industry, the Malaysian Government has identified halal industry as the main driver to propel growth for Malaysia as stipulated in the Third Industrial Masterplan (IMP3) 2006-2016. With the aim to become the world halal hub, the government has tasked Standards Malaysia to develop the standard for halal. The first halal standard in the world, MS 1500:2004 Halal Food Production, Preparation and Storage General Guidelines were introduced in 2004 and as of May 2015, Malaysia has 13 halal and halal-related standard. Malaysian halal standards were recognized by the United Nation and used by Codex Alimentarius Commission as the foundation for drafting their General Guidelines for Use of the Term Halal in 1997 (Abdullah 2006).

The establishment of Halal Industry Development Corporation (HDC) on 18 September 2006 is an attempt by the Malaysian Government to manage halal industry in a more coordinated effort. HDC envisage to become the one-stop centre for halal industry development and coordination in Malaysia which complement the other agencies involved in halal industry development. The Halal Industry Master Plan 2008-2020 (HIMP) was launched by HDC in 2008 to ensure that halal industry develops in an integrated and comprehensive manner as the first step in its role as the coordinator for halal industry development.

While the performance of halal exports is positive and growing steadily, the growth is still very far from the targeted growth of the HIMP and the Eleventh Malaysia Plan (11th MP). Halal Development Corporation (HDC) targeted the value of halal exports to be RM100 billion by the year 2020 in their 2015 report. Currently, the compound annual growth rate (CAGR) for the period of 2011 to 2015 is only 13.4 per cent and the historical annual growth rate trend although always positive would not be sufficient as a baseline projection to provide the quantum needed to achieve the targeted growth in the year 2020. According to the current growth trend, halal exports will only reach RM74 billion with its current growth momentum, far from the targeted RM100 billion. The performance of exports has to be double the current rate in order to achieve the target set for it in the year 2020. Specific strategies and initiatives need to be formulated to push the growth rate higher, in order to fill in the quantum needed to achieve the targeted RM100 billion exports by the year 2020.

In addressing the issue of meeting the targeted growth, the question to consider is, where and why? Knowledge of the directions of trade and factors that could help boost halal exports to achieve the targeted growth. Before venturing into the directions and factors that could influence demand for halal exports, knowledge of Malaysia international trade is vital in understanding reasons to why Malaysia needs to grow its halal industry. The knowledge would help in identifying factors that could push growth and formulating better and effective strategy to increase halal exports.

Recent studies on halal mostly focused on the theoretical, consumer behavior, logistics and traceability of halal. Studies on halal economy, particularly, halal export and trade flows are rather scarce (Bergeaud-Blacker et al. 2016). This is mostly due to halal being a new field of study and availability of data for halal industry. This study will add to the body of knowledge in the halal economy field providing empirical evidence on international demand of halal products, it also would provide verification of whether religiosity and distance have an influence of halal exports demand. Previous studies and reports would state that demand will increase with higher Muslim's populations (Thomson Reuters 2015; Zulkarnain & Ooi 2014). Thus, findings from this study would extend the boundary of halal study field. This study aims to identify the determinants, especially the influence of distance and Muslim's populations on halal export and helps to support the formulation of new strategies needed to meet the targeted growth for halal export.

This is a concept paper with some descriptive data on the volume of halal export to major destinations and Muslim's majority countries. The organization of this paper is as follow: The following section presents the background on Malaysia's involvement in international trade and the performance of halal export. Consequently, methodology and the proposed model for the study were discussed following the literature review. Finally, a section for some discussion on descriptive statistics before concluding the paper.

2. Background: Malaysia in International Trade

During colonialism, Malaysia has been exporting raw materials such as rubber and tin. After independence, industrialization phase in Malaysia started with import substitution, however, exports still largely consisted of primary commodities, as shown in Table 1. The economic recession in the 1980s triggered by the US high-interest rate

policy has resulted in a massive collapse of world commodity trade (Athukorala 2010). Malaysia's GDP slumped to record negative growth in 1985 and this together with other development has compelled the Malaysian Government to transform its economy. The structural economic transformation was being done under the First Industrial Masterplan (IMP) 1986-1995 with the objective to make the manufacturing sector as the leading sector of the economy and accelerate growth through the continuation of the export-led industrialization strategy.

Table 1: Share of Malaysia's Exports

	1970	1990	2010	2015
Agriculture	56.8	19.0	11.2	8.6
Mining	26.6	17.8	15.3	10.6
Manufacturing	11.9	58.8	72.1	80.2
Others	4.7	4.4	1.4	0.6
Total	100.0	100.0	100.0	100.0

Source: Malaysia, Economic Report (various year)

Malaysia has successfully transformed its economy from an agriculture-based economy into a manufacturing based, through the implementation of Industrial Masterplan 1 and 2 (Ling & Sing 2007). High degree of openness to international trade has boosted economic growth for Malaysia. As a small and open economy, trade played a vital role in promoting growth as confirmed by several studies (e.g. Thaker, Tan and Vaidik (2013); Ye and Mun (2013) and Ridzuan *et al.* (2016)). Malaysia's external sectors are double the size of its GDP and its merchandise trade to GDP ratio are ranked 7th in the world (UN ESCAP 2015). Nevertheless, exports are mostly commodities with a notable share of intermediate goods and assembled products which centred on few major exports destination namely Singapore, Japan, and the USA (Masron, Fujikawa, et al. 2014; UN ESCAP 2015).

In the past, international trade consists mostly of finished goods and raw materials, however, the current trend in international trade show an increasing trade of intermediate goods (Grossman et al. 2008). Most of this trade is caused by huge individual firms (Clausing 2000), to a large extent, by Multinational companies (MNCs). MNCs have helped to create this global supply chain phenomenon, as the headquarters make use of transfer pricing mechanism to manage costs of resources and profits among their business unit in different geographies (Shelanski 2004). Malaysia being an open economy is not excluded from this trend and has become a preferred location for value chain in the global supply chain network dominated by MNCs. The development is exemplified in Table 2 of Malaysia's manufacturing exports, where almost half of the exports figure is contributed by Electric and Electronic (E&E) sector, consists mainly of intermediate input, largely due to the dependence of export on MNCs.

Table 2: Share of Manufactured Goods Exports (%)

	1980*	1990*	2000	2015
E&E	2.1	33.0	68.7	45.0
Non-E&E				
Petroleum products	3.0	2.7	3.0	9.0
Chemicals and chemicals products	3.0	4.0	4.5	9.0
Manufactures of metal	3.9	3.5	2.2	6.0
Machinery, appliances and parts	45.6	23.2	3.4	6.0
Optical and scientific equipment	-	-	2.1	5.0
Rubber products	1.3	2.9	1.5	4.0
Processed food	8.2	4.4	1.1	3.0
Wood products	7.4	3.3	3.5	3.0
Textiles, clothing and footwear	12.7	8.4	3.3	3.0
Manufactures of plastics	-	-	1.2	2.0
Transport equipment	3.5	4.7	0.2	2.0
Other manufactured goods ¹	9.3	9.9	4.5	3.0
Total	100.0	100.0	100.0	100.0

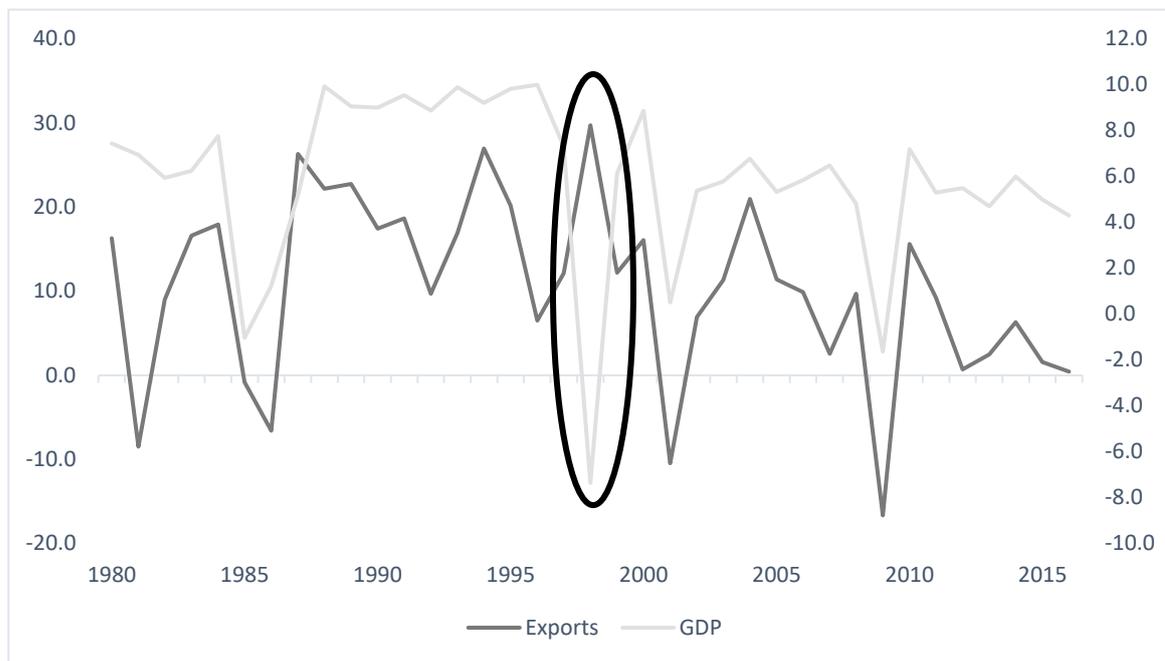
¹ Includes jewellery, non-metallic mineral products, beverage and tobacco, iron and steel products, paper and pulp products, animal feed, printed matter, miscellaneous manufactured articles, etc.

* Data has been reclassified in 1988, but 1980 & 1990 data used the previous classification

Note: Adapted from Malaysia Economic Statistics Time Series 2016 (Department of Statistics Malaysia 2016)

As Malaysia's economic growth depends highly on trade, any risk that interferes with trade will have an impact on growth. Figure 1 shows trends of Malaysia's export and GDP growth since the 1980s. The trend clearly shows that GDP is closely correlated with export, highlighting the dependence of Malaysia's economy to trade. In 1998, however, the difference between GDP and exports trend was mainly due to the steep drop of GDP as a result of massive short-term capital outflow which happens regionally, as highlighted by the circle in Figure 1.

Figure 1: Relation between Exports and GDP



Data from Malaysia Economic Statistics Time Series 2016 (Department of Statistics Malaysia 2016)

Maintaining the export-led growth strategy for future growth and sustainability, Malaysia needs to remain competitive and stay in the global supply chain or find a niche sector that it has an advantage in. Endowed in both capital, knowledge and expertise in the halal industry particularly the certification niche, as a result of investment and development focused made since the 1970s, IMP3 outlined strategies to establish Malaysia as a leading supplier of halal products and services globally (MITI 2006).

The development of halal industry was given a spotlight again, in 11th MP that was launched in May 2015, with a vision to position Malaysia as the Global Reference Centre for Halal Integrity and centre for innovation, product and trade (EPU 2015).

Halal Export Performance

In its early stage, halal industry is primarily linked with food as many still make that connection now. In actuality, halal industry now has evolved and expanded to other sectors which include cosmetics, ingredients, pharmaceutical, chemicals, livestock, logistics, tourism and most notably the Islamic finance and banking sector (Muhammad et al. 2008).

Since the launch of the HIMP, the halal industry has grown significantly with halal export recording an average annual growth of 18 per cent (HDC 2015). HDC has classified Malaysian Halal export into six main categories namely food and beverages, halal ingredients, palm oil derivatives, cosmetics and personal care, industrial chemical, and pharmaceutical. Largest exports products come from the food and beverages categories which recorded a 49.5 per cent share of total halal export in 2015; this was followed by halal ingredients with 28.0 per cent and palm oil derivatives at 12.7 per cent. The share of halal exports is shown in Table 3.

Table 3: Share of Malaysia’s Halal Exports by Categories

	2010	2012	2014	2015
Food and Beverages	39.7	38.4	41.1	49.5
Halal Ingredients	32.8	33.2	32.3	28.0
Palm Oil Derivatives	14.0	15.8	14.1	12.7
Industrial Chemical	8.9	6.0	6.1	5.5
Cosmetic and Personal Care	2.4	5.4	5.1	3.8
Pharmaceutical	2.2	1.2	1.4	0.5
Total	100.0	100.0	100.0	100.0

Note: Retrieved from <http://halaldatawarehouse.hdcglobal.com/>(HDC 2017)

Food and beverages category continue to hold the largest share of total halal exports in the past five years. This is not surprising as halal is always associated with food. The introduction of halal certificate classifications which includes non-food items by JAKIM, indicate that products that are considered as non-food items are also well demanded by consumers. This is exemplified in the table that shows industrial chemical and cosmetic with halal certifications hold a marginal share of the total halal exports. The positive share suggests that the awareness of halal products beyond food items is increasing among consumers.

On the destinations of exports, the top two destinations for Malaysia’s halal export are China and Singapore. Demand from China is largely due to the scale of their market which correlates with the significant size of their populations. As for Singapore, most of the exports are for re-exports, concurrent with their role as a trading nation hub. The top 10 destinations for Malaysian halal exports are as listed in Table 4. However, they are not the same as the primary targeted market in the HIMP. The primary target for Malaysia’s halal exports is the South East Asian countries and the Gulf Cooperation Council (GCC) regions while the secondary target is Canada and the European Union countries. Sizeable Muslims populations, as well as relatively high purchasing power, is the main characteristic for the selections of halal targeted market (HDC 2015).

Table 4: Top 10 Destinations for Malaysia’s Halal Exports

Rank	Country
1	China
2	Singapore
3	The United States of America (USA)
4	Netherland
5	Japan
6	Indonesia
7	Thailand
8	India
9	South Korea
10	Australia

Note: Adapted from <http://halaldatawarehouse.hdcglobal.com/>(HDC 2017)

The top export destinations bring about questions whether distance and Muslims majority population plays any role in influencing the demand for Malaysia's halal products.

3. Does Distance Matter? What about Muslims Majority?

Distance is recognised as important gravity variable that influences trade. Previous studies that used gravity model employ variety of variables to represent distance. Distance represents an obstacle that impedes trade and the most common would be the physical distance in kilometres and transport cost. The longer the distance, the higher the cost, thus lower trade (Anderson 1979; Baier & Bergstrand 2009; Matolo et al. 2016). The physical distance is usually measured by the total distance between the bilateral trade partner's economic centres; which is, the distance calculated by the longitudes and latitudes between the centres. While, transport cost includes the actual freight cost, tariff and trade infrastructure (Martinez-Zarzoso & Nowak-Lehmann 2003).

Previous studies on halal trade found mix results as to the influence of distance to halal exports demand. Distance was found to be statistically significant and have a huge impact on lowering halal exports demand between Malaysia and the Western Asian countries (Masron et al. 2015). However, another study found that distance is not a significant influence on exports of halal food to Middle Asian countries (Masron, Azman, et al. 2014). Masron's studies are among the pioneers which provide some empirical evidence in the field of halal economy, however, the studies are faced with data constraints and conclusion are drawn from a very short sample size. Apart from that, total export data was used as a proxy for total halal export. Both constraints could create biased in the findings of the studies. There is a need to further investigate the influence of distance to halal export using actual halal export figure in order to have better results. We hypothesise that distance will affect exports negatively, consistent with the expected sign proposed in gravity equations.

The HIMP listed countries with Muslims majority as its primary target market for halal exports products. The focus on Muslims majority countries as the primary market is a natural choice as studies found that Muslim are requesting halal-certified products and halal certification is seeming to be more important than other quality standards (Riaz & Chaudry 2004; Shafie & Othman 2006). According to the latest Global Islamic Economy Report 2016/17, Muslim's spending across the sector for 2015 was estimated at USD 1.9 trillion with food and beverages leading other categories at USD 1.17 trillion. This trend is expected to continue with an average increase of 8 per cent annually to reach USD 3.0 trillion worth of industry (Thomson Reuters 2015). However, the top 10 destinations for Malaysian Halal exports included countries where the majority of its population are non-Muslims. Therefore, there is a need for further study to investigate the influence of Muslims majority countries demand for halal products compared to Muslims minority countries. The hypothesis for this variable is that Muslim's majority country will influence exports positively.

4. The Methodology and Model

In determining these hypotheses, we will be adopting the gravity model of international trade, a well-established model and describe as the power house for bilateral trade

Abdullah, Rashid & Jaafar

flows study. Inspired by Newton's gravity law, gravity model has been proven theoretically and empirically as the most successful tools in predicting bilateral trade (Caporale et al. 2015). The gravity model was first applied to international trade analysis by Tinbergen in 1962. Tinbergen assumed the following relationship in his model

$$X_{ij} = A \frac{Y_i^\alpha Y_j^\beta}{D_{ij}^\gamma} \dots\dots (1)$$

According to Tinbergen (1962), economic masses are represented by economic size (as cited in Anderson, 1979). The amount of supply for exports in country *i* depends on its economic size (Y_i) and the volume of products demanded by country *j* also depends on size of country *j* (Y_j). Economic size characterized the supply and demand of a country and essential in determining trade flows. Tinbergen exerts that distance (D_{ij}) can be the geographical distance between two countries. Thus, the formula estimated that volume of trade is an increasing function of the national incomes of both trading partners, and a decreasing function of the distance between them.

Although gravity model could explain trade pattern, it faced a lot of criticism for not being well grounded theoretically (Caporale et al. 2015). However, several researchers have tried to provide theoretical foundation for gravity model with the first notable attempt made by Anderson (1979) under the increasing return of scale hypothesis. This is followed by Bergstrand (1985) and Eaton and Kortum (2002) with imperfect competition theory and geographic barrier hypothesis. The model has been proven theoretically and empirically to be the best tools to explain the behaviour of bilateral trade (Masron, Fujikawa, et al. 2014).

The idea behind gravity model is that trade flows depends on the relative sizes of trade partners in relation to the distance between them and other factors that can affect trade (Anderson & Wincoop 2003). The flexibility of the model to incorporate all these factors has made it a powerhouse in the empirical trade studies (Krugman et al. 2015). The factors that could be incorporate in the model include commonality characteristics (e.g. border, culture, language; see Anderson and Wincoop, 2003; Masron, Azman and Hassan, 2014), event (e.g., economic crises, natural disasters; see Papazoglou, Pentecost and Marques, 2006), and regional factors (e.g. members of an economic regions, such as OIC and ASEAN; linkages through trade agreements, such as TPS-OIC; see Ismail and Said, 2008; Masron, Fujikawa and Azman, 2014).

The robustness of gravity model will be leverage in this study to measure whether there is a difference in demand between Muslim majority and minority country. Previous studies found that 70 per cent of Muslim globally adhere to the halal requirement in their daily life (Minkus-McKenna 2007) and Muslims regards the halal certification higher than other quality standards (Riaz & Chaudry 2004; Shafie & Othman 2006). Thus, empirically there should be a higher demand for halal products in the Muslims majority countries compare to the Muslim minority population. The proposed model is as below:

$$HEX_{ij} = f(GDP_m, GDP_j, GDPC_m, GDPC_j, DIS_{mj}, MP_j) \dots\dots (2)$$

Abdullah, Rashid & Jaafar

Where:

GDP_m ; GDP_j	=	GDP of Malaysia; GDP of trade partner;
$GDPC_m$; $GDPC_j$	=	GDP per capita of Malaysia; GDP per capita of trade partner
DIS_{mj}	=	the distance between Malaysia and trade partner in kilometre;
MP_j	=	Dummy variable for Majority Muslim population

The proposed model will measure the effects of distance (DIS_{mj}) and having a majority Muslims population to the demand of Malaysia's halal exports. All data are secondary data in a quarterly observation covering the period of 2010: Q1 through 2016: Q4, obtained from Department of Statistics Malaysia (DOSM), Halal Development Corporation (HDC), Department of Islamic Development Malaysia (JAKIM), and various trusted data providers. The timeframe is because Malaysia only started to compile halal trade data at end of 2009. The variables considered in this study are the nominal exports of Malaysia's halal products, nominal GDP and GDP per capita of Malaysia (GDP_m , $GDPC_m$), nominal GDP and GDP per capita of top 10 Malaysia's halal export destinations and selected Middle East countries (GDP_j , $GDPC_j$). The dummy for Muslims population (MP_j) will be 1 when the majority population of that country is Muslims and 0 if its otherwise, this will help differentiated the influence of majority Muslims populations.

Distance will be measured by the physical distance between the main capital of Malaysia and main capital of the destination country. All series are converted to natural logarithms form as the log-linear form is best to measure the relative change in the statistical model (Tornqvist et al. 1985). Data for halal exports were in Ringgit term in monthly frequency and need to be converted to USD to make it comparable with other data. All data will then be tested to determine its linear relationship, randomness and probability distributions.

This study will use panel data regression model because it gives more informative data, more efficiency, more variability and better suited to study the dynamics of change in economy compare to analysis using either time-series or cross-sectional data (Gujarati & Porter 2009).

5. Discussion

This study will cover the top 10 halal export destinations and selected trading partners with Muslim majority populations that fulfils some basic characteristic such as strategic position, adequate population size, and income group rank. The characteristic sets were to ensure that the selected countries could garner enough demand and help promote Malaysia's halal products to Muslims globally.

Table 5, shows the distance between Malaysia and selected trading partners. Comparing the data in table 5 and table 6, it could be inferred that distance played important role in influencing exports of halal products. As an example, export value to China is much higher than to Australia, the same trend is repeated for export to Singapore and Indonesia. However, the halal exports value recorded for the USA is much higher than the value exported to Saudi Arabia given the distance of both

countries to Malaysia. These facts are illustrated in Table 6. Thus, these mix trends need to be investigated and the hypothesis for the negative influence of distance to trade need to be tested by this study.

Table 5: Distance between Malaysia and Trade Partners in halal

Country	Distance (KM)
China	4,355
Singapore	315
The United States of America (USA)	15,130
Netherland	18,046
Japan	5,329
Indonesia	1,174
Thailand	1,187
India	3,842
South Korea	4,614
Australia	6,617
Iran	6,300
Saudi Arabia	6,347
Egypt	7,962
Turkey	8,344

Note: Adapted from CEPII retrieved from http://www.cepii.fr/CEPII/en/bdd_modele/

Based on Table 5 also, the top 5 of halal export destination consists of Muslims minority countries. Exports of halal products to Muslims minority is much larger compared to Muslims majority countries, which could be inferred as Muslims populations seem not to have great influence on halal product demand. These inferences need to be explored further as previous studies found that more than 70% of the Muslim population in the United States of America adhere to halal requirement (Hussaini 2004; Minkus-McKenna 2007) in their dietary intake. Studies also reveal that Muslim are requesting halal-certified products and halal certification is seeming to be more important than other quality standards (Riaz & Chaudry 2004; Shafie & Othman 2006). The hypothesis of the positive influence of Muslim's population to export demand needs to be tested since the data suggested different results from previous studies conclusions.

Table 6: Malaysia’s halal Exports to Selected Countries (USD mill)

Country	2010	2013	2016
China	675.1	1,331.8	1,203.6
Singapore	340.3	946.5	1,078.3
The United States of America (USA)	625.3	829.4	651.1
Netherland	560.2	483.0	519.1
Japan	310.7	573.3	595.1
Indonesia	185.3	67 4.0	417.7
Thailand	156.7	497.1	336.3
India	271.1	373.5	299.9
South Korea	188.7	363.2	285.1
Australia	105.2	350.6	319.7
Iran	48.1	-	-
Saudi Arabia	-	108.2	130.2
UAE	70.6	166.5	163.2
Turkey	-	-	269.2

Note: Adapted from <http://halaldatawarehouse.hdcglobal.com/>(HDC 2017)

Analysing the reasons Muslims minority countries make up the top 10 destinations of Malaysia’s halal products, it could be explained by numbers of previous studies on intention to purchased halal that found halal also has increasing appeal for non-Muslim (Golnaz et al. 2010; Haque et al. 2015). Apart from that, globalization, geopolitical tension and increased in Muslim tourists has created awareness and higher demand for halal products in Muslims minority countries.

6. Conclusions

This a concept paper on the determinants of halal exports particularly, influence of distance and Muslims populations on demand. According to international trade theory, distance have negative influence on bilateral trade, however, past studies in halal trade give mix result. From the literature, growth of Muslims population have a huge impact on halal exports, thus there is need to investigate this further. Based on descriptive analysis, distance seems to have an influence on exports demand and act as a natural barrier to trade. From the analysis done, it seems that the shorter the distance between two trading partners, more trade will occur. However, there seem to be an exception for Malaysia’s major trade partners (e.g. the USA and Japan) where distance does not impede trade. As for Muslims population, from the data presented, Muslims populations do not seem to exert a strong positive influence on halal export demand. Nevertheless, further investigation is needed to support these findings.

References

- AT Kearney 2007, Addressing The Muslim Market, Chicago.
- Abdullah, J 2006, 'Malaysia Hub Pengeluaran Produk Halal: Potensi dan Cabaran', Jurnal Halal, 1, pp.27–37.
- Anderson, JE 1979, 'A Theoretical Foundation for the Gravity Equation', The American Economic Review, 69(1), pp.106–116.

Abdullah, Rashid & Jaafar

- Anderson, JE & Wincoop, E van 2003,'Gravity with Gravititas : A Solution to the Border Puzzle',*The American Economic Review*, 93(1), pp.170–192.
- Athukorala, P 2010,'Malaysian Economy in Three Crises', Crawford School of Economics and Government Working Paper No. 2010/12 Arndt-Corden, ANU.
- Baier, SL& Bergstrand, JH 2009,'Bonus vetus OLS: A simple method for approximating international trade-cost effects using the gravity equation', *Journal of International Economics*, 77(1), pp.77–85.
- Bergeaud-Blacker, F 2016,'Who owns halal? Five international initiatives of halal food regulations', in Bergeaud-Blacker, F, Ficher, J & Lever, J (eds), *Halal Matters : Islam, Politics and Markets in Global Perspective*, Routledge, New York, p. 192-197.
- Bergeaud-Blacker, F, Ficher, J & Lever, J 2016,'Introduction: Studying the politics of global halal markets', in Bergeaud-Blacker, F, Ficher, J& Lever, J (eds), *Halal Matters : Islam, Politics and Markets in Global Perspective*, Routledge, New York,pp. 1–18.
- Bergstrand, JH 1985,'The Gravity Equation in International Trade: Some Microeconomic Foundations and Empirical Evidence', *The Review of Economics and Statistics*, 67(3), pp.474–481.
- Caporale, GM, Sova, A & Sova, R 2015,'Trade flows and trade specialisation: The case of China', *China Economic Review*, 34, pp.261–273.
- Clausing, K a 2000,'Does multinational activity displace trade?', *Economic Inquiry*, 38(2), pp.190–205.
- Department of Statistics Malaysia 2016,*Malaysia Economic Statistics Time Series*, DOSM, Malaysia.
- Eaton, J & Kortum, S 2002,'Technology, Geography, and Trade', *Econometrica*, 70(5), pp.1741–1779.
- EPU 2015,*Eleventh Malaysia Plan 2016-2020 : Anchoring Growth On People*, EPU, Malaysia.
- Golnaz, R et al. 2010,'Non-Muslim perception awareness of halal principle and related food products in Malaysia', *International Food Research Journal*, 17, pp.667–674.
- Grossman, GM et al. 2008,'Trading Tasks : A Simple Theory of Offshoring',*American Economic Review*, 98(5), pp.1978–1997.
- Gujarati, DN & Porter, DC 2009,*Basic Econometrics*, 5th ed., McGraw Hill International, Singapore.
- Haque, A et al. 2015,'Non-Muslim consumers' perception toward purchasing halal food products in Malaysia', *Journal of Islamic Marketing*, 6(1), pp.133–147.
- HDC 2017,*Halal warehouse data*,HDC, accessed April 17, 2017, <<http://halaldatawarehouse.hdcglobal.com/>>
- HDC 2015,*Malaysia Halal Industry Report 2015*, HDC,Kuala Lumpur.
- Hussaini, MM 2004,'Why halal haram lists do not work ?', Sound Vision Foundation, Viewed January 1, 2017, <[A http://www.soundvision.com/article/why-halal-haram-lists-do-not-work](http://www.soundvision.com/article/why-halal-haram-lists-do-not-work)>
- Ismail, NW & Said, R 2008,'Explaining Malaysian Bilateral Trade with OIC Members', *The Empirical Economic Letters*, 7(8), pp.811–818.
- Krugman, P, Obstfeld, M & Melitz, JM 2015,*International Economics Theory and Policy*, 10th ed., Pearson, Essex, England.
- Ling, SY & Sing, YT 2007,'Role of government and its agencies in promoting industrialization', inWM Har (ed.), *Malaysian Economics: Issues and Debates* pp. 1–16. Available at: <http://www.harwaimun.com/>

Abdullah, Rashid & Jaafar

- Martinez-Zarzoso, I & Nowak-Lehmann, F 2003,'Augmented gravity model: an empirical application to MERCOSUR-European Union trade flows',*Journal of Applied Economics*, 6(2), pp.291–316.
- Masron, TA, Azman, NHN & Hassan, SH 2014,'Halal development and food exports: Evidence from Malaysia and the Middle Eastern Asian Countries', *Jurnal Ekonomi Malaysia*, 48(2), pp.61–69.
- Masron, TA, Fujikawa, T & Azman, NHN 2014,'Malaysian exports to middle Eastern Asian countries: Trends and the role of trade agreements', *Asian Academy of Management Journal*, 19(2), pp.141–159.
- Masron, TA, Nik Azman, NH & Fujikawa, T 2015,'Halal development and Malaysian exports to Western Asian countries', *Malaysian Journal of Economic Studies*, 52(1), pp.55–73.
- Matolo, L et al. 2016,'Determinants of South Africa's Orange Trade Flows in the Top European and Asian Importing Countries', *Journal of Agricultural Science*, 8(7), p.38.
- Minkus-McKenna, D 2007,'The pursuit of Halal', *Progressive Grocer*, p.86(17),42.
- MITI 2006,Third Industrial Master Plan 2006-2020, MITI,Kuala Lumpur.
- Muhammad, Z, Md. Salleh, M & Mahmood, AM 2008,'Halal : Antara Tuntutan Agama dan Strategi Ekonomi', paper presented to Seminar Pentadbiran Hal-Ehwal Islami Di Malaysia: Cabaran Semasa dan Perancangan Masa Depan, Institut Kefahaman Islam Malaysia (IKIM), 6-7 August
- Papazoglou, C, Pentecost, EJ& Marques, H 2006,'A gravity model forecast of the potential trade effects of EU enlargement: Lessons from 2004 and path-dependency in integration', *World Economy*, 29(8), pp.1077–1089.
- Pew Research Center 2015, *The Future of World Religions : Population Growth Projections, 2010-2050*, Pew Research Center, Washington.
- Riaz, MN & Chaudry, MM 2004,'Halal Food production', CRC Press LLC, Florida,USA.
- Ridzuan, AR et al. 2016,'ASEAN4 prospective of export-led economic growth', *Journal of Business Management and Economics*, 7(1), pp.1–12.
- Shafie, S& Othman, M 2006,'Halal Certification : an international marketing issues and challenges', *The International IFSAM VIIIth World Congress*, German Association of University Professors of Management, Berlin, Germany, pp. 1–11.
- Shelanski, HA 2004,'Transaction-level determinants of transfer-pricing policy: Evidence from the high-technology sector', *Industrial and Corporate Change*, 13(6), pp.953–966.
- Thaker, HMT, Tan, SE & Vaidik, S 2013,'Export-led growth hypothesis: econometric evidence from Malaysia', *Journal of International Business and Economy* (2013), 14(2), pp.95–112.
- Thomson Reuters 2015, *State of the Global Islamic*, Thomson Reuters, Dubai.
- Tornqvist, L, Vartia, P & Vartia, YO 1985,'How Should Relative Changes Be Measured?', *The American Statistician*, 39(1), pp.43–46.
- UN ESCAP 2015, *Asia-Pacific Trade Briefs Russian Federation*, UN ESCAP, Thailand.
- Ye, S & Mun, C 2013,'Nonlinearity in ASEAN-5 export-led growth model : Empirical evidence from nonparametric approach', *Economic Modelling*, 32, pp.136–145.
- Zakaria, Z 2008,'Tapping Into the World Halal Market : Some Discussions on Malaysian Laws and Standards', *Shariah Journal*, 16, pp.603–616.

Abdullah, Rashid & Jaafar

Zulkarnain, MNA & Ooi, SK 2014, 'Tapping into the Lucrative Halal Market : Malaysian SMEs Perspective', International Journal of Business and Innovation, 1(6), pp.12–22.