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Research Article

Impact of Agricultural Land and the Output of Agricultural Products Moderated with Internet Users toward the Total export of Agricultural Product in Three Islamic South East Asian Countries

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ABSTRACT
Agriculture was the key to preserving the main supply of food. Internet users could moderate the output of agricultural product. This study has a purpose to observe if agricultural land and its products moderated with internet users could affect the total exports of agricultural materials in. This study used secondary data collected from sesric.org and fao.org from three OIC countries, Idonesia, Malaysia, and Brunei. This study used the number of internet users as a moderating variable on the effect of agricultural production which was divided into several types toward exports.The endogenous variable was total export, a moderating variable was the total of internet users, while the agricultural products were exogenous variables. The data were analyzed using moderated regression analysis to observe if the moderating variable affected exogenous variables. The result showed that before the variables such as width of agricultural land, total output of cow's meat, chicken's meat,and freshwater fish were being moderated by number of internet users, all of them had no significant effect to total export. It could be concluded that number of internet users could strengthen the effect of two exogenous variables, which was agricultural land and cow's meat output toward total export.
Keywords: *Agriculture; Export; Internet Users; Output*

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1. Introduction

Agriculture was important to be managed carefully to make sure that the supply of raw material for food in society was sufficient. Food security become an important issue because insufficient food supply could impede economic growth and many health problems in society would arise. Food security is a multidimensional and very complex issue, covering social, economic, political, and environmental aspects (Surahman, Soni, & Shivakoti, 2019). The political aspect is often the dominant factor in the decision-making process to determine food policy. Realizing sustainable food security is an issue and priority agenda in various meetings held by various countries and international institutions (Silva, de Moraes, & Molin, 2011).

Food security could be achieved through inside and outside pathways a country. Through inside, a country could use technological advances in helping farms to grow more plants in a shorter period with more resilience against disease. For livestock, the government could use genetic engineering and artificial insemination to produce better variants that could grow faster. The example of broiler chicken which could grow fast in a short amount of time to meet the national meet demand, especially for the fast-food industry was the example of technological advances in agriculture. Technological advances could also tackle the problem of reducing land for agriculture by creating artificial farms inside building, such as a greenhouse, hydroponic, and garden inside building (Mafruchati, 2020).

Farm livestock and freshwater fishery were th example of agriculturals sectors as source of supply of raw material of food in market. Farm lievstock also called as meat plantation, beacsue they provide meat to be supplied into market. study by stated that The more population in a country, the higher demand for protein, which could be attained by consuming meat and fasih as a source of protein. But a huge number of livestocks along with the fish from pond need feeder to maintain their live. Feeder for livestock such as cow and chicken was supplied from farm. Similar to livestock, fish also needfeeder which was also supplied from farm field. In other

words, the demand of feeder have to be balanced with the number of livestock and fish (McKendree, Tonsor, Schroeder, & Hendricks, 2020)

Besides using technological advances, the government in a country should implement a policy which fully supports the sustainability of agriculture to continue to grow, by using land reform regulation, an incentive for the farmer, placing more venture of village cooperation to distribute or buy the product from farmers with understandable price, and obliterate hoarder (Rizou, Galanakis, Aldawoud, & Galanakis, 2020). If the supply for national demand did not reach the quota, the government could use import policy, but only for food supply needed for main necessity which was a lack in market. Import also has to consider the effect toward the farmer which have the same varieties of product, so that they would not suffer great loss (Huo, 2014).

Technological advances not only created the invention of technological devices, but also a huge number of internet users. Internet users in Indonesia according to the report by internetworldstats data, had reached 212.35 million in 2021. Indonesia was in the third place with the highest number of internet users in Asia region. Malaysia had 29,03 millions internet users in 2021, while Brunei had 417,5 thousands in 2021. Indonesia had the highest number because it also ahd the total of population exceeded270 millions in 2021. Study by Soedjana & Priyanti stated that a huge amount of internet users in the country could boost the penetration of information to be faster than before. Thus, it could help society who focused in agricultural sectors to communicate with each other to maintain the supply-chain of products. Moreover, the huge number of internet users could also enhanced the promotion of agricultural product, so that the farmers and industries could get more revenue from selling (Soedjana & Priyanti, 2017).

According to the previous study by Wani & Dhami, Southeast Asia was known as the granary of Asia. That was because most of the countries in South East Asia consisted of agricultural land which has contributed as the biggest exporter of grains. There were six countries known as the rice granaries of Southeast Asia. This term arose because of the high level of rice production (Wani & Dhami, 2016). Those countries were Thailand, Laos, Vietnam, the Philippines, Myanmar, and Indonesia. But, only Indonesia was included as OIC member (Angkuraseranee, Somboonsuk, Sukhabot, & Nimsai, 2019).

OIC or organization of Islamic cooperation was the gourp of Islamic countries to coperate in socio-economic factors. The differences between OIC and ASEAN was the OIC emphasized the importance of sharia rule to be encated in every trade and agreement between each OIC member, so that could create mutual prosperity. OIC members should also follow any rule of Islamic economy principle in conducting the business and social activity which involved billateral or multilateral agreement (Kayaoglu, 2015).

Islamic economy system has organized such situation since the age of caliph and Rasulullah. Because the Islamic economy used Al-Qur'an and hadith as the legal foundation of the system's implementation, economic activity must be beneficial for all or maslahah. In economic practice, Islam prohibited gharar/impose danger to other, maysir/gambling/speculation, and riba/involved in interest rate. By doing so, economic activity could achieve good distribution of wealth along with sustainable economic growth (Wardhana, 2021). In the case of agriculture as a vital sector in ensuring human life through food, the Islamic economy emphasized that the practice of the agricultural sector would follow the sharia law. Moreover, the government as policymakers must prioritize public interest by making sure that the supply block chain of the agricultural product would be safe until reached the market (Choudhury & Malik, 2016).

Islamic economy system was only implemented in the Muslim country or a country with Muslims as the majority. Organization of Islamic Cooperation (OIC) is an international organization consisting of 57 member countries spread all over the world. OIC is the second biggest organization in the world after United Nations. OIC has been formed for several propose, which are to increase Islamic solidarity among member countries, to support international peace and security, to protect Islamic holy places, to assist in the struggle for the establishment of an independent and sovereign Palestinian state. Among 57 members of countries, only 3 were from southeast Asia/ASEAN (Office, 2016).

This study was diferent from previous study because this study used number of internet users to moderate the effect of total agricultural product toward total export. Based on that background, this study has a purpose to observe if the number of agricultural products of three OIC members in South East Asia affected to total export of agriculture. The implication of this study is to be hoped used as references for local government or international Islamic organization which was interested in researching agriculture in Islamic countries.

2. Methodology

2.1 Variables

Table 1. List of variables and indicators

Variable	Definition	Indicator	Reference
Agricultural area (exogenous)	Indicator of width of the area for agricultural practices	Land width (thousands Ha)	(Struik & Kuyper, 2017)//law of diminishing theory
Suppy of seafood (exogenous)	Total catches of marine and freshwater products for a year	Total caught (Tonnes)	(Keen, 2013)/Keynesian
Meat production (exogenous)	Amount of meat produced from carcass in a year	Total carcass (Tonnes)	(Keen, 2013)/keynesian
Internet user (mediator)	Number of internet users for a year	Internet users per 100 people	(Muslichah, Abdullah, & Razak, 2019)/Solow Swan Growth Model
Export of agriculture (endogenous)	Toal of agricultural output exported each year	Total value of raw food exports in USD	(Huo, 2014) /Keynesian

2.2 Samples and Data Analysis Technique

This study uses a purposive sampling technique by specializing the sample in only OIC member countries. The data were micro panel type of data. The data is taken specifically for agricultural products during 2015-2020 from sesric.org. The data were only taken from 2015-2020, and could not be continued to next year, such as in 2021 was because there was a limitation of data sharing, since COVID-19 impeded the data collection led by OIC experts into public. Indonesia, Malaysia, and Brunei were chosen because the Southeast Asian country is known as the largest producer of agricultural products in Asia. The three countries are also safe from conflict compared to other OIC member countries in the Middle East. The three countries also have agricultural areas that are predominantly green, not deserts. The data is downloaded in the form of a CSV file (Prabowo, Rahman, & Rahman, 2012).

This study used secondary data. According to Espinosa et al, secondary data is a collection of primary data stored in the agency's repository, both in print and digitally, and used for research purposes (Espinosa et al., 2021). Besides secondary, other sample characteristics of the data were panel data, each exogenous variable comes from Organization of Islamic Cooperation (OIC), namely sesric.org, and each sub-type of exogenous variable comes from Food and Agriculture Organization (FAO), namely fao.org (Pratama, Wardhana, & Nugroho, 2020).

The exogenous variables of this study were the Agricultural area (thousand Ha), total output of cow's meat, total output of chicken's meat, and total output of freshwater fish caught. The moderator variable was the number of Internet users. The endogenous variable was the total value of raw food exports in USD (Asnawi, Sukoco, & Fanani, 2018). This study analyzed the data using moderated regression analysis (MRA) (Aguinis, 2004). The model of analysis is as follows:

$$Y = a + b1.X1 + b2(X1*Z) + b3(X2*Z) + b4(X3*Z) + b5(X4*Z) + e$$

Y: exogenous variable

X1: endogenous 1

X2: endogenous II

X3: endogenous III

A: constant value

B: coefficient regression

Z: number of internet users (moderating variable)

E: error coefficient

Hypotheses

H1: The area of agriculture has a significant effect on the total exports of three OIC member countries

H2: Total output of cow's meat had a significant effect on total exports of three OIC member countries

H3: Total output of chicken's meat had a significant effect on total exports of three OIC member countries

H4: Total of freswater fish output had a significant effect on total exports of three OIC member countries

H5: Internet users could moderate the influence of agricultural area on total exports of three OIC member countries

H6: Internet users could moderate the influence of cow's meat output to total exports of three OIC member countries

H7: Internet users could moderate the influence of chicken's meat output to total exports of three OIC member countries

H8: Internet users could moderate the influence of freshwater fish output to total exports of three OIC member countries

3. Result

Result in table 2 showed that there was no outlier of the data, means that the data could be processed into classical assumption test. The test result showed that all of the variables were normal because the mean score of the variables either were not below the minimum score nor above the maximum score.

Table 2. Result of descriptive statistic

	N	Minimum	Maximum	Mean	Std. Deviation
X1_agriland	15	13	62300	23155	27873
X2_CowMeat	15	418	35410	12201	12985
X3_ChickenMeat	15	23228	3495091	1503641	1262613
X4_freshwaterfish	15	591	932600	285915	392068
Z_Internet_Users	15	71	95	86	10
Y_TotalExport	15	1698750	10156884489	4215815182	3706093307
Valid N (listwise)	15				

Source: Data processed using SPSS version 25

3.1 Result of Classical Assumption Test

a. Normality Test

Normality test was conducted to see if the residual variables in the regression are normally distributed (Ghozali, 2018). Kolmogorov-Smirnov normality test was used to test the residual data. Based on the table below, the residual distribution was normal because each of the variables significance was more than 0.05

Table 3. Result of Kolmogorov-Smirnove test

	X1_agri land	X2_Cow Meat	X3_Chicken Meat	X4_freshwater fish	Z_Internet_Users	Y_Total Export
N	15	15	15	15	15	15
Asymp. Sig. (2-tailed)	,27[c]	,200[c,d]	,200[c,d]	,200[c,d]	,73[c]	,172[c]

Source: Data processed using SPSS version 25

b. Multicollinearity Test

Table 3. Result of Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
X1_agriland	0,393	2,546
X2_CowMeat	0,169	5,904
X3_ChickenMeat	0,131	7,626
X4_freshwaterfish	0,355	2,820
Z_Internet_Users	0,424	2,358
X1_Z	0,391	2,559
X2_Z	0,256	3,904
X3_Z	0,173	5,794
X4_Z	0,212	4,713

Table 3 showed that all variables had the tolerance value above 0,1. Thus, they also had and the VIF value is less than 10. It means that they had no no multicollinearity in the regressor variable. It was in accrdance with what Wang said in his study that a variable had a high level of multicollinearity if it had a Tolerance value of 0.1 and had a VIF value exceeding 10 (Q. Wang, 2015).

3.3 Heterocedasticity Test

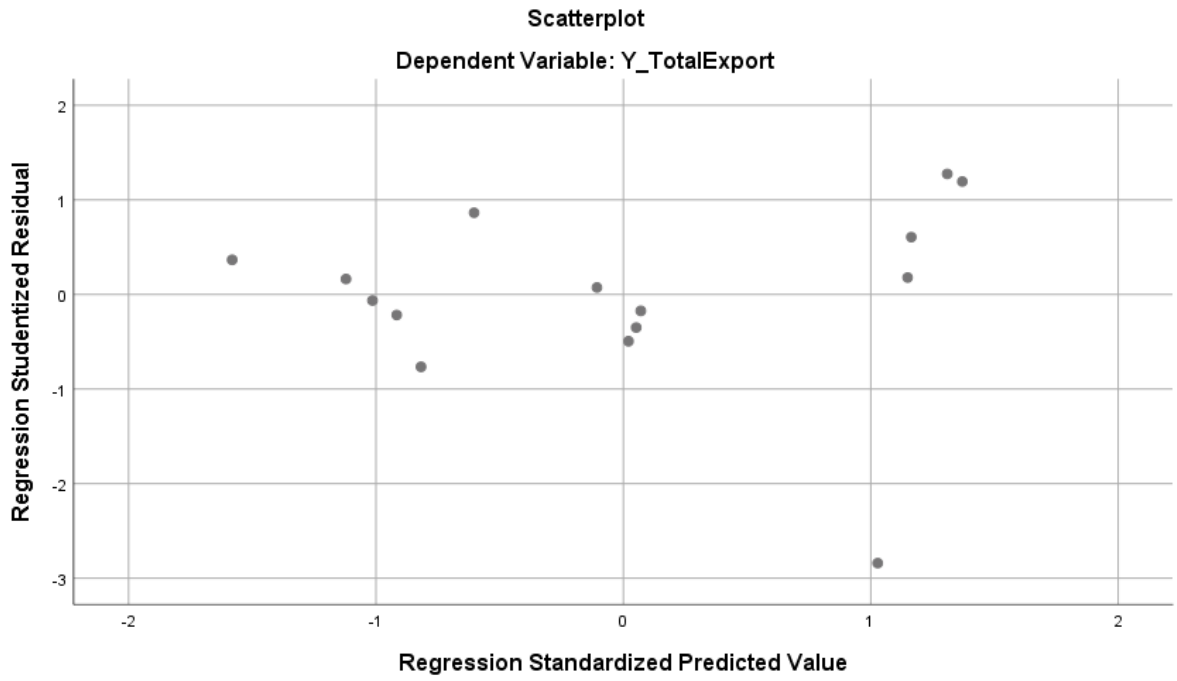

Figure 2. Heteroscedasticity Test Results using scatterplot Source: SPSS Data

3.4 AutoCorrelation Test

Table 4. Result of Durbin Watson auto correlation test

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	,545[a]	0,297	0,239	16	1,779
a. Predictors: (Constant), Lag_res1					
b. Dependent Variable: Unstandardized Residual					

Table 4 showed that the Durbin-Watson value was 1.779, which number is between the Durbin Watson value -2 and also 2. It means that the data had no autocorrelation in the equation of regression analysis.

3.5 T- Test and hypotheses Test

Table 5. Result of T- test

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
constant	76,819	40,785		1,884	0,089
X1_agri land	4,940	6,561	5,733	0,753	0,480
X2_Cow Meat	-1,207	7,737	-0,790	-0,156	0,881
X3_Chicken Meat	7,933	8,251	1,934	0,961	0,373
X4_freshwater	14,547	17,207	11,845	0,845	0,430

fish					
X1_Z	0,009	0,003	0,929	3,058	0,012
X2_Z	-0,014	0,006	-0,887	-2,347	0,041
X3_Z	0,007	0,015	0,186	0,482	0,640
X4_Z	-0,005	0,005	-0,413	-0,972	0,354

Dependent Variable: Y Total Export

3.6 Coefficient Determination Test

Table 6. Result of coefficient determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	,754[a]	0,568	0,395	0,94576
a. Predictors: (Constant), X4_Z, X1_Z, X2_Z, X3_Z				
b. Dependent Variable: Y_TotalExport				

4. Discussion

Table 5 showed that Agricultural land width was significant to total export. Meanwhile cow's meat and chicken's meat output was significant to total export. Similar think was happened to freshwater fish caught output, which was also not significant to total export. All of them had significat score>0,05. It means that H1, H2, H3, and H4 were all rejected.

Table 5 showed that a variable, agricultural land as variabel which was moderated by total of internet users had significant impact to the total export of agricultural product. It was shown with the P-value <0.05, which was significant, which means that H5 was accepted. This was in line with the the study by Raimi et al which stated that Brunei, Malaysia, and Indonesia was a rich country with abundant natural resources. With a huge supply of non-renewable natural resources in Brunei like oil, it could be relatively easy to funding a country with small population like Brunei.

For Malaysia, the abundant of renewable resurces such as agricultural products could enhance the Malaysia GDP. Indonesia that had both abundant agricultural land area nor abundant natural resources and rich soil could fed up the huge number of its population. (Raimi, Olowo, & Shokunbi, 2021). Moreover, the advancement of technology in Brunei utilized for monitoring of agricultural land could supervise the condition of land to better, so that the measurement could be implemented faster and more efficently (Wani & Dhami, 2016). A small change in the number of production could directly affected the total number of commodities that would be exported overseas (Hamzah, 2017).

Between those 3 countries, Indonesia had a big number population, consisting of mainly young ages. According to the study by Moeis et al, a huge number of young ages led to the demand for digital devices and internet providers. Based on the national census of the population led by the Center of Statistic Institution of Indonesia, in 2020, Indonesia had 75.49 of Z generation. It was equivalent to 27.94 percent of the total population in Indonesia (Moeis, Dartanto, Moeis, & Ikhsan, 2020).

Meanwhile, Indonesia also had 69.38 million millennial generations as the second most dominant population. It was equivalent to 25.87 percent of the total population in Indonesia. In fact, based on the National Labor Force Survey conducted by the Central Statistics Agency (BPS), 20.62% of Indonesian youth worked in the agricultural sector in August 2020, up from 18.43% in the previous period. The increase in the number of young people in the agricultural sector during this pandemic can be a momentum to expand it. As many as 85.62% of them are internet users and have the opportunity to become early adopters of digital technology in the agricultural sector (Moeis et al., 2020).

Study by Baba et al also stated that Indonesia has a demographic bonus in the early 21st century. Moreover, the Indonesian population in old age also being decreased each year. Thus, the productive age population has increased. Indonesia itself was an agricultural country with very vast agricultural land. The humid temperature and soil with rich minerals for planting crops made Indonesia recognized as an emerald country of the equator. It won't be surprised if many young generations involved in agricultural sectors use technological advancement to increase production and create an easier supply chain (Baba, Dagong, Sohrah, & Utamy, 2019).

Table 5 also showed that an exogenous variable, which was total production of cow meat has p-value <0.05 after being moderated with a variable total of internet users. It means that H6 was accepted and in line with the study by H. H. Wang et al which explained that the socila media could become the line for internet users to share the tips in maintaining cow's health. Thus, social media also digital transaction used by internet users boosted the supply chain process of cow's meat, not only because the supply was bigger, but also the transaction was also faster using mobile banking and e-banking (H. H. Wang, Chen, Bai, & Lai, 2018).

Table 5 also showed that some exogenous variables which was chicken meat had P-value>0.05 after being given with a moderating variable. Based from the result, H7 was rejected, which means total output of chicken had no significant effect to total export.

The exogenous variable, total output of freshwater fish caught alos had P-value>0.05, which means that it had no significant effect to total export, and H8 was also rejected. According to the study by Karbalaei et al, Malaysian prioritized types of other seafood such as mollusks and crustaceans, because they had more capital value than freshwater fish. Malaysians consumed 58 kilograms of fish per capita, and alot of them came from seawater fish (Karbalaei et al., 2019). Malaysia was placed near Indonesia which was between the Indian Ocean and the South China Sea which provided natural sources of seawater fish and other types of sea creatures such as squid, octopus, types of clam, and sea-urchin (Hamid-Mosaku, …, & 2017, n.d.).

Inline with the study by Karbalaei et al, a study conducted by Sany et al also stated that the marine fishery sectors in Malaysia also provided income and employment opportunities, particularly for rural villages in Malaysia. Malaysia produced over 1.5 million fisheries products each year. Malaysia produced about 85 percent of the total fisheries' national product from the Marine (Sany, Tajfard, Rezayi, Rahman, & Hashim, 2019). Malaysia had two types of dominant marine fish caught for consumption, which were Pelagic and demersal fish. Pelagic fish make up the majority of the marine catches by Malaysians. Those type of pelagic fish consists of round scad, squid, tuna, Indian mackerel, and bream being among the most common. Coastal/inshore fisheries and deep-sea fisheries are the two main forms of marine capture fisheries, based on the information from the Department of Fisheries Management in Malaysia in 2010 (Rais, Khairi, Zahid, & Ramli, 2019).

One of the offshore fish which was the concern for the aquaculture industry in Malaysia was Sea bass. Sea bass (Lates calcarifer) is one of the most important high-value fish species recognized in Malaysia's National Key Economic Area (NKEA). Sea bass production in the aquaculture sector is expected to rise in the amount harvested as well as become more productive, competitive, and knowledge demanding under this initiative. Following the success of private hatcheries producing vast amounts of artificial fish seed, sea bass output in Malaysia has increased tremendously over the last decade. Sea bass was reached 30.440 tons in 2014 (Hashim, Azra & 2021, 2020), which was recognized as reaching the peak of productivity in Malaysia.

Moreover, sea bass contributed to a national income of at least 39 Million Ringgit at that time (Rais et al., 2019). To make sure that this project of aquaculture of sea bass as marine fish could accomplish without fail, the government through the Department of Fisheries Malaysia (DOFM) has introduced several economic incentives to the industry. Those were given proper training to improve farmer skills, giving subsidies in the form of farm equipment and infrastructure facilities, and establishing a center as a facility in controlling the quality of fish seed (Karbalaei et al., 2019). It could be inferred that marine fisheries sectors was more popular than freshwater fish sector in Malaysia.

Meanwhile, according to the study by Duggan & Kochen, the development of the aquaculture sector or freshwater fish in Indonesia was currently considered far behind from the captured marine fisheries sector. This indication can be seen from the amount of production carried out throughout the year since the aquaculture sector was developed in Indonesia in 20th century (Duggan & Kochen, 2016). The lack of technological development and lack of incentive for aqualucture of freshwater fish sectors became the reason of the slow development. Moreover, the treatment of freshwater fish sector was moredificult than treatment of poultry as one of the biggest protein providers in Indonesia (Duggan & Kochen, 2016).

Technological adnavnce such as internet along with the other tchnology in adjusting the agricultural sector to be better were bery helpful in maintaining the supply of output. Islam also stated about the effort of society in adjusting their life based on the current situation, in this case the usage of technology for economic activity.

ذٰلِكَ بِاَنَّ اللّٰهَ لَمْ يَكُ مُغَيِّرًا نِّعْمَةً اَنْعَمَهَا عَلٰى قَوْمٍ حَتّٰى يُغَيِّرُوْا مَا بِاَنْفُسِهِمْۙ وَاَنَّ اللّٰهَ سَمِيْعٌ عَلِيْمٌۙ

"That is because Allah will not change a favor which He has bestowed upon a people until they change what is in themselves. Verily Allah is All-Hearing, All-Knowing".

Table 6 showed that coefficient of determination (R2) was 0.568 (56.8%). It can be inferred that the total export as variable could be explained by exogenous variables in this study was 56,8%, while the remaining 43,2% was explained by outer variables which was not included in this study. This was according to the study by Mazhangara et al where R2 which was more than 50% was consiedered as moderate and could be indicated that the coefficient was quiet good in explaining the variables (Mazhangara, Chivandi, Mupangwa, & Muchenje, 2019)

5. Conlusion

Based on the result above, it can be concluded that width of agricultural lands moderated by number of internet users affected the total export of agricultural product. Total output of cow's meat which was moderated with number of internet users affected the total export of agricultural product. Meanwhile, such thing would not happened to total output of chicken's meat and freswater fish, even though after being moderated by number of internet users.

Before the variables such as width of agricultural land, total output of cow's meat, chicken's meat,and freshwater fish were being moderated by number of internet users, all of them had no significant effect to total export. It could be concluded that number of internet users could strengthen the effect of two exogenous variables.

The practical impication of this research was to be hoped to be a reference that chicken's and fershwater fish should be increased more in output, so that national supply could met the demand of international trade. A new regulation from OIC comittee should be validated to help Indonesia, Malaysia, and Brunei to increase their output of chicken's meat and freshwater fish.

This study also had limitations in using the secondary data for three cuntries which were limited to the range of time from 2015-2020. This was because the data were heavily reduced to make the normality test result become normally distributed. This study als had limitation in using only thre Islamic countries from south east asian region, because they were the only Islamic countries in tropical areas.

References

Aguinis, H. (2004). *Regression analysis for categorical moderators*. Guilford Press.

Angkuraseranee, T., Somboonsuk, B., Sukhabot, S., & Nimsai, S. (2019). Market opportunities for Thai beef cattle exports to Yunnan province, China. *International Journal of Agricultural Technology*, *15*(6), 807–822.

Asnawi, N., Sukoco, B. M., & Fanani, M. A. (2018). Halal products consumption in international chain restaurants among global Moslem consumers. *International Journal of Emerging Markets*, *13*(5), 1273–1290.

Baba, S., Dagong, M. I. A., Sohrah, S., & Utamy, R. F. (2019). Factors affecting the adoption of agricultural by-products as feed by beef cattle farmers in Maros regency of South Sulawesi, Indonesia. *Tropical Animal Science Journal*, *42*(1), 76–80.

Choudhury, M. A., & Malik, U. A. (2016). *The foundations of Islamic political economy*. Springer.

Duggan, D. E., & Kochen, M. (2016). Small in scale but big in potential: Opportunities and challenges for fisheries certification of Indonesian small-scale tuna fisheries. *Marine Policy*, *67*, 30–39.

Espinosa, C. A., Pineda, J., Ortega, O., Jaime, A., Sarmiento, R., & Archibold Taylor, G. W. (2021). Trends, Challenges and Opportunities for IoT in Smallholder Agriculture Sector: An Evaluation from the Perspective of Good Practices. *World Conference on Information Systems and Technologies*, 293–301. Springer.

Hamid-Mosaku, I., … M. M.-I. J. of, & 2017, undefined. (n.d.). An application of fuzzy inference system to marine fish landings for west coast of Malaysia. *Inderscienceonline.com*. Retrieved from https://www.inderscienceonline.com/doi/abs/10.1504/IJIDS.2017.088106

Hamzah, H. (2017). *A Study on Promoting Land Readjustment in Support of Compact Strategy for Efficient Urban Development in South East Asia: Case Study of Brunei*. PhD thesis, Mie University.

Hashim, Z., Azra, M., … M. N.-A. in F., & 2021, undefined. (2020). Impact of COVID-19 on marine fisheries supply chains: Case study of Malaysia. *Researchgate.net*, *24*(1), 102–121. https://doi.org/10.1080/13657305.2019.1661045

Huo, D. (2014). Impact of country-level factors on export competitiveness of agriculture industry from emerging markets. *Competitiveness Review*.

Karbalaei, S., Golieskardi, A., Hamzah, H. B., Abdulwahid, S., Hanachi, P., Walker, T. R., & Karami, A. (2019). Abundance and characteristics of microplastics in commercial marine fish from Malaysia. *Marine Pollution Bulletin*, *148*, 5–15.

Kayaoglu, T. (2015). *The organization of islamic cooperation: Politics, problems, and potential*. Routledge.

Keen, S. (2013). Predicting the “Global Financial Crisis”: Post-Keynesian Macroeconomics. *Economic Record*, *89*(285), 228–254.

Mafruchati, M. (2020). Broiler Chicken vs. Turkey Meat; which One Has the Least Bad Fat to Avoid Positive Case of COVID-19? *Systematic Reviews in Pharmacy*, *11*(10).

Mazhangara, I. R., Chivandi, E., Mupangwa, J. F., & Muchenje, V. (2019). The potential of goat meat in the red meat industry. *Sustainability*, *11*(13), 3671.

McKendree, M. G. S., Tonsor, G. T., Schroeder, T. C., & Hendricks, N. P. (2020). Impacts of retail and export demand on United States cattle producers. *American Journal of Agricultural Economics*, *102*(3), 866–883.

Moeis, F. R., Dartanto, T., Moeis, J. P., & Ikhsan, M. (2020). A longitudinal study of agriculture households in Indonesia: The effect of land and labor mobility on welfare and poverty dynamics. *World Development Perspectives*, *20*, 100261.

Muslichah, M., Abdullah, R., & Razak, L. A. (2019). The effect of halal foods awareness on purchase decision with religiosity as a moderating variable: A study among university students in Brunei Darussalam. *Journal of Islamic Marketing*.

Office, C. C. (2016). *Muslim Friendly Tourism: Understanding the Demand and Supply Sides In the OIC Member Countries*. (February).

Prabowo, S., Rahman, A. A., & Rahman, S. A. (2012). *Halal culinary: Opportunity and challenge in Indonesia*. 4–5. Retrieved from https://repository.unmul.ac.id/handle/123456789/4657

Pratama, Y. B., Wardhana, A. K., & Nugroho, P. A. (2020). Hubungan Antara Artikel Mengenai Game Dan Teknologi Informasi Pada Scopus: Studi Bibliografi. *Visi Pustaka: Buletin Jaringan Informasi Antar Perpustakaan*, *22*(1).

Raimi, L., Olowo, R., & Shokunbi, M. (2021). A comparative discourse of sustainable finance options for agribusiness transformation in Nigeria and Brunei: implications for entrepreneurship and enterprise development. *World Journal of Science, Technology and Sustainable Development*.

Rais, A. A. A., Khairi, S. S. M., Zahid, Z., & Ramli, N. A. (2019). Efficiency of Fishery Production in Malaysia Using Data Envelopment Analysis. *Proceedings of the Third International Conference on Computing, Mathematics and Statistics (iCMS2017)*, 325–332. https://doi.org/10.1007/978-981-13-7279-7_40

Rizou, M., Galanakis, I. M., Aldawoud, T. M. S., & Galanakis, C. M. (2020). Safety of foods, food supply chain and environment within the COVID-19 pandemic. *Trends in Food Science & Technology*, *102*, 293–299.

Sany, S. B. T., Tajfard, M., Rezayi, M., Rahman, M. A., & Hashim, R. (2019). The west coast of Peninsular Malaysia. In *World seas: An environmental evaluation* (pp. 437–458). Elsevier.

Silva, C. B., de Moraes, M. A. F. D., & Molin, J. P. (2011). Adoption and use of precision agriculture technologies in the sugarcane industry of São Paulo state, Brazil. *Precision Agriculture*, *12*(1), 67–81.

Soedjana, T. D., & Priyanti, A. (2017). Competitiveness of Indonesian livestock production among ASEAN countries. *Indonesian Bulletin of Animal and Veterinary Sciences*, *27*(1), 1–14.

Struik, P. C., & Kuyper, T. W. (2017). Sustainable intensification in agriculture: the richer shade of green. A review. *Agronomy for Sustainable Development*, *37*(5), 1–15.

Surahman, A., Soni, P., & Shivakoti, G. P. (2019). Improving strategies for sustainability of short-term agricultural utilization on degraded peatlands in Central Kalimantan. *Environment, Development and Sustainability*, *21*(3), 1369–1389.

Wang, H. H., Chen, J., Bai, J., & Lai, J. (2018). Meat packaging, preservation, and marketing implications: Consumer preferences in an emerging economy. *Meat Science*, *145*, 300–307.

Wang, Q. (2015). Fixed-effect panel threshold model using Stata. *The Stata Journal*, *15*(1), 121–134.

Wani, N. U. H., & Dhami, J. K. (2016). Indo-Asean Trade: A Study with reference to Agriculture Sector. *Asian Journal of Research in Social Sciences and Humanities*, *6*(2), 1–21.

Wardhana, A. K. (2021). The Application of Waqf and Endowment Fund Based on the Principles in the Sharia Maqashid Pillar Society. *Prosperity: Journal of Society and Empowerment*, *1*(2), 107–119. https://doi.org/10.21580/prosperity.2021.1.2.8829