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Muslim Consumer Behavior amidst the COVID-19 Pandemic; Case Study in Kota Jayapura, Papua Province*

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Abstract

This study discusses the Muslim consumer behavior in the pandemic of COVID-19 in Indonesia. The study is a quantitative research using an online survey with a questionnaire to collect the data. The sample is 100 respondents in Jayapura, the capital city of Papua Province, Indonesia. There are 20 items of statements built related to consumer behavior in the questionnaire. Data analyzed using Exploratory Factor Analysis (EFA) to construct Muslim consumer behavior during COVID-19 pandemic. The result found that there are six consumer behaviors shaped from the extraction of the 20 variables, namely Changes in Needs and Consumption Patterns, More Selective and Well-Informed before Purchasing Goods, Adopting Digital Application in Purchasing Goods, Hoarding Behavior, Oriented to Priority, Brand and Quality, and Consult Doctor Online. These findings suggest the retailers to maintain the production for the essential products needed in the Pandemic, and for the governments to set a regulation for balancing the demand and supply of the essential products during the pandemic, and for the Muslim consumer itself to comply with the Islamic ethical consumption to achieve well-being both in the world and hereafter.

Keywords: Consumer Behavior, COVID-19, EFA.

Abstrak

Penelitian ini membahas mengenai perilaku konsumen Muslim ditengah pandemi COVID-19 di Indonesia. Penelitian ini merupakan penelitian kuantitatif dengan menggunakan survei online berupa kuesioner dalam mengumpulkan data. Sampel dalam penelitian ini adalah 100 orang responden di Jayapura, Ibu Kota Provinsi Papua, Indonesia. Dalam kuisisioner, terdapat 20 item pernyataan yang dirancang terkait dengan perilaku konsumen yang harus dijawab oleh responden. Analisis data dilakukan dengan menggunakan *Exploratory Factor Analysis* (EFA) untuk menyusun perilaku konsumen Muslim selama masa pandemi. Hasil penelitian menemukan bahwa terdapat enam perilaku konsumen yang terbentuk dari ekstraksi 20 variabel yaitu Perubahan Pola Kebutuhan dan Konsumsi, Penelusuran Informasi Produk dan Lebih Selektif Sebelum Membeli Barang, Penggunaan Aplikasi Digital dalam Pembelian Barang, Perilaku Menimbun Barang, Berorientasi pada Prioritas, Merek, dan Kualitas, serta Penggunaan Jasa Konsultasi Dokter Online. Temuan penelitian ini merekomendasikan para produsen untuk mempertahankan produksi barang-barang yang penting selama masa pandemi, dan kepada pemerintah agar menetapkan kebijakan yang bertujuan untuk menjaga keseimbangan permintaan dan penawaran barang selama pandemi, serta kepada konsumen Muslim agar dapat menerapkan etika konsumsi sesuai dengan ajaran Islam agar tercapai kesejahteraan baik di dunia maupun di akhirat.

Kata Kunci: Perilaku Konsumen, COVID-19, PUS.

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A. INTRODUCTION

The outbreak of Coronavirus (COVID-19) first emerged in Wuhan City, a large area in Hubei Province, China in December 2019. The disease caused by a novel coronavirus which is originally called as 2019 novel coronavirus (2019-nCoV)³. However, afterward, the World Health Organization (WHO) officially named it severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and announced this outbreak as an International concern and public health emergency in January 2020⁴. Currently, there are 216 countries experience the pandemic of COVID-19, and more than 14 Million people around there globe were confirmed to be infected, while more than 600 thousand people died because of the virus. The COVID-19 pandemic has caused a global health crisis and could not be predicted at any time. At this time, the United States has been the country with the highest transmission rates (Sheth, 2020). The confirmed case in the US currently is more than 1 million with almost 150 thousand people have died. Besides, other developed countries such as Brazil, Italia, England, Japan, South Korea, as well as developing countries in Asia such as Indonesia became also experienced the spread of the COVID-19 virus.

Data released by the COVID-19 Task Force for the Acceleration of Countermeasures stated that Indonesia ranked 24th out of 216 countries with 84,882 people were exposed to the virus and 4,016 were killed. It proves that Indonesia still has a high level of COVID-19 transmission⁵. The COVID-19 has distributed to 34 provinces in Indonesia. East Java Province, Jakarta Province, South Sulawesi, and Central Java Province become the highest provinces with the total number of COVID-19 cases. Meanwhile, other provinces such as West Java, South Kalimantan, South Sumatera, North Sumatra, Bali, including Papua Province also have a large number of COVID-19 cases respectively.

Generally speaking, Papua Province which is located in the Eastern part of Indonesia is initially unexpected to have high confirmed cases of COVID-19. The virus appeared first on March 16⁶, precisely two weeks after the first case was confirmed in Jakarta. Based on the data released by the Government of Papua Province, currently, there are more than 2.600 confirmed cases in Papua Province in which Jayapura City as the capital of Papua Province has the highest number of COVID-19. This pandemic has significantly changed various aspects of human life ranging from social aspects, cultural aspects, education aspects, health aspects, to the complexity of the economic aspects. Goodell (2020) stated that COVID-19, directly and indirectly, gives influence on the social and economic aspects. Since the obligation to apply the protocol of health standards such as wearing masks, washing hands, maintaining distance, and work

³ Zhou, P., Yang, X. L., Wang, X. G., Hu, B., Zhang, L., Zhang, W., ... & Chen, H. D. (2020). A Pneumonia Outbreak Associated With A New Coronavirus Of Probable Bat Origin. *Nature*, vol. 579, no. 7798, pp. 270-273.

⁴ Zheng, Y., Ma, Y., Zhang, J. (2020). COVID-19 and The Cardiovascular System. *Nat Rev Cardiol*, vol. 17, pp. 259-260, <https://doi.org/10.1038/s41569-020-0360-5>.

⁵ <https://covid19.go.id/>

⁶ <https://covid19.papua.go.id/>

from home, it leads to the changing of people's life behavior especially the economic and consumer behavior directly from normal to "new normal".

Several previous studies have been done to explain the impact of COVID-19 especially in the behavior of the consumers such as Sheth (2020)⁷ who summarize the direct implication of COVID-19 pandemic on consumer behavior. Donthu, N & Gustafsson, A (2020)⁸ who conducted research about the COVID-19 influence on business and research, while Beker et al. (2020)⁹ and Jribi et al. (2020)¹⁰ investigated the impact of COVID-19 on household behavior. Furthermore, Hasanat et al. (2020)¹¹ analyzed the effect of Coronavirus on E-marketing in Malaysia, and ¹²¹³ investigated the odd consumer behavior due to the outbreak of COVID-19.

Therefore, this research is conducted to determine the impact of COVID-19 pandemic on the behavior of Muslim consumers in Jayapura city, the capital of Papua Province Indonesia. Since the concept of consumption in the Islamic perspective is very important and being the guidance of worship to bring the blessings from Allah SWT then it is essential to investigate how Muslims behave when consuming goods and services in response to the pandemic of COVID-19.

B. LITERATURE REVIEW

1. Consumption in Islam

According to Al-Arif and Amalia, Islam has taught Muslims about rules or Sharia in all aspects of life, including consumption. Islam also provides guidelines for consumption to benefit humans. Consumption is an activity to utilize the resources available on earth. In the Islamic view, the utilization of the earth's resources has been regulated along with certain restrictions, so that it does not harm others¹⁴.

⁷ Sheth, J. (2020). Impact Of Covid-19 On Consumer Behavior: Will The Old Habits Return Or Die? *Journal of Business Research*.

⁸ Donthu, N., & Gustafsson, A. (2020). Effects Of COVID-19 On Business And Research. *Journal of Business Research*, vol. 117, pp. 284.

⁹ Baker, S. R., Farrokhnia, R. A., Meyer, S., Pagel, M., & Yannelis, C. (2020). How Does Household Spending Respond To An Epidemic? Consumption During The 2020 Covid-19 Pandemic. *National Bureau of Economic Research*, No. w26949.

¹⁰ Jribi, S., Ben Ismail, H., Doggui, D., & Debbabi, H. (2020). COVID-19 Virus Outbreak Lockdown: What Impacts On Household Food Wastage? *Environment, Development and Sustainability*, vol. 22, pp. 3939-3955.

¹¹ Hasanat, M. W., Hoque, A., Shikha, F. A., Anwar, M., Hamid, A. B. A., & Tat, H. H. (2020). The Impact of Coronavirus (Covid-19) on E-Business in Malaysia. *Asian Journal of Multidisciplinary Studies*, vol. 3, no. 1, pp. 85-90.

¹² Colleen P. Kirk dan Laura S. Rifkin, "I'll trade you diamonds for toilet paper: Consumer reacting, coping and adapting behaviors in the COVID-19 pandemic," *Journal of Business Research* 117 (September 2020): 124–131, <https://linkinghub.elsevier.com/retrieve/pii/S0148296320303271>.

¹³ Kirk, C. P. dan Rifkin, L. S. (2020). I'll Trade You Diamonds For Toilet Paper: Consumer Reacting, Coping And Adapting Behaviors In The COVID-19 Pandemic. *Journal of Business Research*, vol. 117, pp. 124–131. doi: 10.1016/j.jbusres.2020.05.028.

¹⁴ Chandra, O. B. (2016). Consumption Behavior Of University Students In Islamic Economics Perspective. *Journal of Islamic Economics Lariba*, vol. 2, no. 1.

Consumption in Islam aimed as a tool for worshiping Allah SWT and it has consequences that should be accounted for by every Muslim. The existence of the law about *halal*, *haram*, *mubah*, and *makruh* is guidance for every Muslim to get closer (*Taqarrub*) to Allah SWT. Furthermore state that there are five principles of consumption in Islam, as follows¹⁵: 1). Justice Principle; 2). Hygiene Principles; 3). Modesty Principle; 4). Generosity Principle; 5). Morality Principle.

Muslim consumer behavior also should be based on the priority of needs. The concept of needs is more valuable than desire because desire is based on the concept of satisfaction or utility which tends to be related to lust. Needs-based on the concept of *Maslahah* which brings benefits for humans¹⁶. Needs should be fulfilled to achieve human well-being. Al-Syathibi stated that human necessities classify on primary needs (*Dharuriyat*), secondary needs (*Hajiyat*), and tertiary needs (*Tahsiniyat*)¹⁷.

2. Consumer Behavior

Before purchasing goods and consuming services, consumers have several preferences particularly in response to the pandemic of COVID-19. A study conducted by Hashem (2020)¹⁸ suggested that there is a shift in consumer behavior especially in the way they purchase goods and services by using online media. Therefore, the study recommended the companies to construct effective strategies in marketing and increase their existence in the e-business sector. Sheth (2020)¹⁹ also figured out that the global pandemic has intruded the consumer attitude in purchase which leads to generating a new behavior in purchasing and consuming goods and services.

Kotler and Keller (2007) explained that consumers experience some process before decided to purchase things that are initiated by introducing the consumers' needs. In this stage, the consumers realize their needs and problems based on internal and external stimulation. The next stage is information searching. In this process, consumers push to research the information regarding their needs from all sources before purchasing the things. Furthermore. in the next stage of the purchase decision, the consumers conduct an evaluation regarding the information about the products and services based on their needs and other preferences, as well as the utility of the products. After that, the consumers will decide whether to buy the product or not. In addition to this process of consumer behavior, in the last stage, the consumer will experience several stages of satisfaction that affect their next attitude towards the product such as to repurchase or not. Therefore, based on this theory, this research

¹⁵ Firmansyah, F., & Prajawati, I. M. (2019). Toward Ethical Consumer Behavior: Islamic Perspective (A Theoretical Framework Of Investigating The Determinants. *International Journal of Engineering & Technology*, vol. 8, no. 1.

¹⁶ Suharyono. (2018). Perilaku Konsumen Dalam Perspektif Ekonomi Islam. *Jurnal AL-INTAJ*, vol. 4, no.2

¹⁷ Sada, H. J. (2017). Kebutuhan Dasar Manusia Dalam Perspektif Pendidikan Islam. *Al-Tadzkiyyah: Jurnal Pendidikan Islam*, vol. 8, no. 2, pp. 213-226

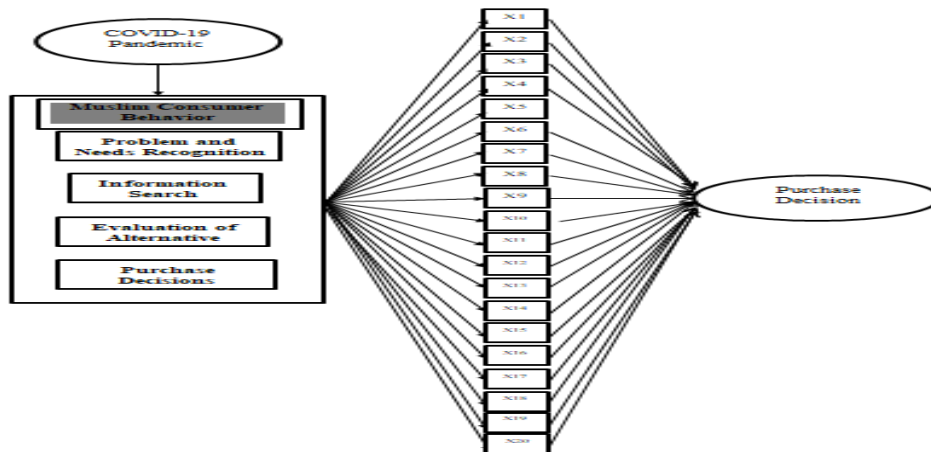
¹⁸ Hashem, T. N. (2020). Examining The Influence Of COVID 19 Pandemic In Changing Customers' Orientation towards E-Shopping. *Modern Applied Science*, vol. 14, no. 8.

¹⁹ Sheth, J. (2020). Impact Of Covid-19 On Consumer Behavior: Will The Old Habits Return Die? *Journal of Business Research*.

constructs 20 variables to identify the Muslim consumer behavior due to the COVID-19 pandemic as presents by Picture 1.

Figure 1.

The Research Framework



C. METHODS

1. Type and Data Sources

The research is a quantitative research using survey method. The tool for collecting the data is an online questionnaire. Items in the questionnaire for measuring the variables were defined from the operationalization of the theory²⁰. Therefore, based on the theory, there were 20 statements in this study that indicated the consumer behavior related to the pandemic of COVID-19. The scale from 1 to 5 was used in the questionnaire which is reflected Strongly Disagree to Strongly Agree for the answer of each statement. There were 100 Muslim respondents in Jayapura City, the capital of Papua Province, Indonesia used in this study.

2. Method of Analysis

Exploratory Factor Analysis (EFA) was used in this study as a method of analysis. EFA is one of the statistical methods functioned to decrease the large set of data into a summary variable. The minimum sample size with N=50 is considered to be reasonable, but if the N<50, it is also found to be reliable when the data are well-conditioned. Meanwhile, Gorsuch (1983) suggested using an absolute minimum of 100 subjects²¹. EFA is appropriate for this study because it is distinguishable from other types of latent variable analysis. EFA is used as a tool for building a theory because the

²⁰ Widhiarso, W. (2009). *Prosedur Analisis Faktor Dengan Menggunakan Program Komputer. Handsout Mata Kuliah Psikometri*, Fakultas Psikologi Universitas Gajah Mada.

²¹ de Winter, J., Dodou, D., & Wieringa, P. (2009). Exploratory Factor Analysis With Small Sample Sizes. *Multivariate Behavioral Research*, vol. 44, pp. 147-181. 10.1080/00273170902794206.

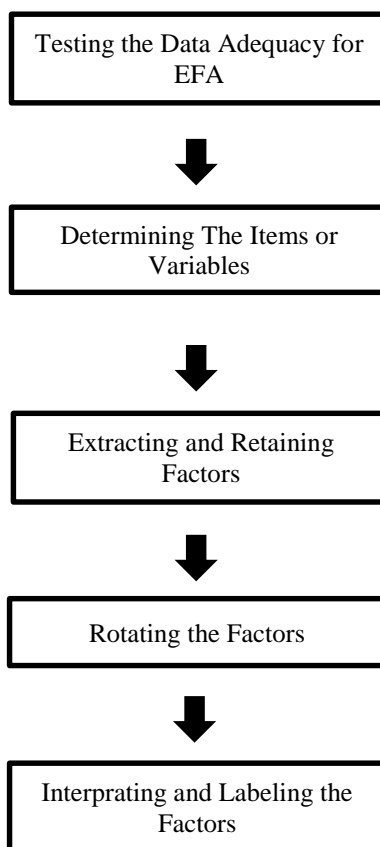
theory of measurements has not yet available, or the theory of measurement has been updated²².

3. Technical Analysis

In this study, there are 20 items related to consumer behavior and each of them will indicate the important manifestations of factors formed. In the first step, the method would be the evaluation of whether EFA is a suitable statistical method with the purpose of the study. Secondly, measure the determination of each item or variable. Thirdly, extraction to get the retain constructs or factors. Fourthly, use the rotational method to load each variable that is correlated to their belonging constructs or factors. And the last step is to interpret and name the factors or constructs. There is no theory for measuring these factors, therefore in the last step, each factor formed will be named following the variables that built them up. Figure 1 illustrates the EFA procedures one by one and based on the explanation above according to Taherdoost et al. (2014)²³.

Figure 2.

The Procedures of Exploratory Factor Analysis Method



²² Sakaluk, J., & Short, S. (2017). A Methodological Review of Exploratory Factor Analysis In Sexuality Research: Used Practices, Best Practices, And Data Analysis Resources. *The Journal of Sex Research*, vol. 54, no. 1, pp. 1-9. 10.31234/osf.io/c8zk2.

²³ Hamed Taherdoost, "Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research," *SSRN Electronic Journal*, no. September (2016), <https://www.ssrn.com/abstract=3205035>.

D. RESULTS

1. Characteristics Demography of the Respondents

Table 1 illustrates the demographics characteristics of the respondents. There are 100 respondents in this study consisted of 76% female respondents and 24% male respondents. Based on the characteristics of age, there were 84% of the respondents aged below 25 years old and 16% of the respondents aged 26-40 years old. Meanwhile, according to their education level, there were 43% of respondents with high school education, 38% of respondents were bachelor degrees, 8% were postgraduates, and 11% were others. Also, 8% of the respondents were government officers, 11% were entrepreneurs, 71% of the respondents were students, while 10% of others were not working.

Table 1.
Characteristics Demography of Respondents

	Frequency	Percentage
Gender		
Male	24	24%
Female	76	76%
Age		
<25 Years old	84	84%
26 – 40 Years old	16	16%
41 – 50 Years old	0	0%
>50 Years old	0	0%
Education		
High School	43	43%
Bachelor Degree	38	38%
Postgraduates	8	8%
Others	11	11%
Employment		
Government Officer	8	8%
Entrepreneur	11	11%
Students	71	71%
Not Working	10	10%
Income		
<Rp1,5 Million	68	68%
Rp1,5 Million – Rp3 Million	17	17%
Rp3 Million – Rp5 Million	9	9%
>Rp5 Million	6	6%

Source: Data Processed (2020)

2. Kaiser Meyer Olkin (KMO) and Bartlett’s Test

The first requirement that should be fulfilled in EFA is the adequacy of the sample. Regarding this, the Kaiser-Meyer-Olkin (KMO) and Bartlett’s test can be used to assess the sampling adequacy for continuing the data analysis using EFA (Taherdoost, et al, 2014)²⁴. If the value of KMO is higher than 0.5, then it is adequate for the next step of the analysis. Meanwhile, the value of KMO above 0.60 to 0.70 is considered to be qualified for analyzing with EFA²⁵. On the other hand, Bartlett’s test indicates the factor analysis is suitable if the significant value is < 0.05. In addition to the next requirements, all the variables used in EFA should be qualified. Therefore, the result of *the anti-image matrix* should indicate that all the variables have the value of *anti-image correlation* higher than 0.5. In this study, the score of the KMO test is 0.774 which is greater than 0.5, while the significance value of Bartlett’s test of Sphericity is 0.000 which is smaller than 0.05 (Table 2). Besides, the value of the anti-image correlation for all the variables is above 0.5. Therefore, the first requirement has been met and it can continue to the next step.

Table 2.
MO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.774
Bartlett's Test of Sphericity	
Approx. Chi-Square	844.046
df	190
Sig.	0.000

Source: Data Processed (2020)

3. Communalities

According to Hair et al. (2006)²⁶, communality test is a tool for measuring the percentage of variable variation that explains the factors. The value of communality is 0 – 1, which means that when the communality value is 1, it indicates the variance of variable correlates perfectly with other variables due to shared factors²⁷ (Wijaya, 2020). Table 3 figures out the result of Communalities test and from the extraction table it can be seen that the percentage of variable variation ranged between 50,8% to 87,5%.

²⁴ Hamed Taherdoost, “Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research,” *SSRN Electronic Journal*, no. September (2016), <https://www.ssrn.com/abstract=3205035>.

²⁵ Netemeyer, Richard & Bearden, William & Sharma, Subhash. (2003). *Scaling Procedures. Issues and Applications*. Sage. 10.4135/9781412985772.

²⁶ Hair, J.F., Black, W. C., Babin, N. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis*. New Jersey: Pearson University Press.

²⁷ Wijaya, T. (2020). *Factor Analysis Of Panic Buying During The Covid-19 Period In Indonesia*. *SSRN Electronic Journal*, 10.2139/ssrn.3603750.

Table 3.
Communalities

Factors	Initial	Extraction
X1	1.000	0.763
X2	1.000	0.748
X3	1.000	0.549
X4	1.000	0.585
X5	1.000	0.571
X6	1.000	0.508
X7	1.000	0.660
X8	1.000	0.527
X9	1.000	0.696
X10	1.000	0.577
X11	1.000	0.751
X12	1.000	0.468
X13	1.000	0.513
X14	1.000	0.740
X15	1.000	0.787
X16	1.000	0.741
X17	1.000	0.763
X18	1.000	0.875
X19	1.000	0.863
X20	1.000	0.770

Source: Data Processed (2020)

4. K1-Kaiser's Eigenvalue

The next step for EFA is factor retention. According to several studies, K1-Kaiser's Eigenvalue is widely known and most used in practice. This method is also the least accurate method for selection of factor retention. If the score of K1-Kaiser's Eigenvalue is larger than 1, then the component should be retained for interpretation²⁸. Also, it can be done by using the Scree plot, by keeping all factors before the breaking point or elbow. Table 4 shows the result of factors retention using the score of K1-Kaiser's Eigenvalue. It indicates that there are only six components with K1-Kaiser's Eigenvalue score are higher than 1. Besides that, the Scree plot graphic also illustrates that six factors should be retained. It can be shown from the table that factor 1 has 29,573% of the variance, factor 2 has 11,146% of the variance, factor 3 has 8,824% of the

²⁸ Hamed Taherdoost, "Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research," *SSRN Electronic Journal*, no. September (2016), <https://www.ssrn.com/abstract=3205035>.

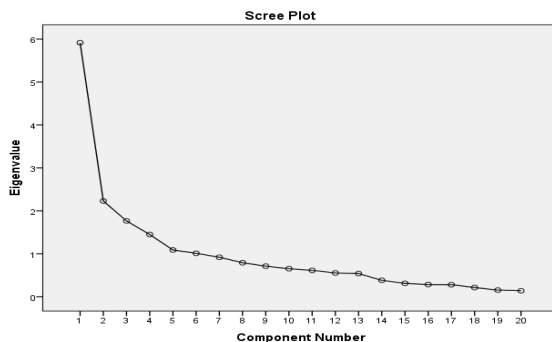
variance, factor 4 has 7,244% of the variance, factor 5 has 5,440% of the variance, and factor 6 has 5,056% of the variance. The total variance of these factors is 67,283% which indicates that the factors can determine all variables as much as 67,283%, while 32,717% is explained by other factors exclude in this research.

Table 4.
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.915	29.573	29.573	5.915	29.573	29.573	2.912	14.562	14.562
2	2.229	11.146	40.720	2.229	11.146	40.720	2.734	13.669	28.231
3	1.765	8.824	49.543	1.765	8.824	49.543	2.466	12.328	40.559
4	1.449	7.244	56.787	1.449	7.244	56.787	2.222	11.111	51.670
5	1.088	5.440	62.227	1.088	5.440	62.227	1.903	9.515	61.185
6	1.011	5.056	67.283	1.011	5.056	67.283	1.220	6.098	67.283
7	0.919	4.594	71.878						
8	0.792	3.959	75.837						
9	0.711	3.557	79.394						
10	0.652	3.260	82.653						
11	0.614	3.068	85.721						
12	0.553	2.767	88.489						
13	0.539	2.695	91.183						
14	0.382	1.910	93.093						
15	0.310	1.552	94.645						
16	0.285	1.423	96.067						
17	0.280	1.402	97.469						
18	0.214	1.071	98.540						
19	0.154	0.769	99.309						
20	0.138	0.691	100.000						

Source: Data Processed (2020)

Graphic 1. Scree Plot



5. Rotated Component Matrix

The next step in EFA is interpreting the factors. The factor rotation helps the data analysis to produce a more interpretable result of interpretation by maximizing high item loadings and minimizing low item loadings²⁹. In the case of EFA, Varimax rotation developed by Thompson (2004)³⁰ is the general method for factor rotation.

Table 5 presents the result of factor rotation after the retention of six factors. The factor retention used to classify the variables onto each factor. From table 5, it can be seen that X1, X2, X4, X5, and X20 are grouped on factor 1, while factor 2 was composed of X6, X7, X8, x9, X12, and X13. Factor 3 consists of X14, X15, and X16, while X18 and X19 were clustered in factor 4. Furthermore, factor 5 composed by X3, X10, and X11, while factor 6 is interpreted by X17.

Table 5.
Result of Rotated Component Matrix

Factors	Component					
	1	2	3	4	5	6
X1	0.785	0.292	0.101	0.151	-0.114	0.127
X2	0.789	0.329	-0.015	-0.013	0.062	0.113
X3	0.137	0.209	-0.165	-0.011	0.487	0.472
X4	0.651	0.280	0.105	0.207	0.171	-0.015
X5	0.734	0.031	0.056	-0.095	0.087	0.106
X6	0.259	0.626	0.048	0.165	-0.131	0.050
X7	0.210	0.621	0.134	-0.146	0.205	0.387
X8	0.201	0.680	0.033	0.118	0.088	-0.037
X9	0.121	0.777	0.105	-0.092	0.236	0.051
X10	0.047	0.300	0.337	0.140	0.578	0.133
X11	0.081	0.058	0.088	-0.023	0.849	-0.107
X12	0.201	0.400	0.182	0.299	0.304	-0.230
X13	0.141	0.510	0.177	0.198	0.395	0.080
X14	0.126	0.075	0.836	0.125	0.058	-0.030
X15	0.081	0.171	0.837	0.185	0.128	0.004
X16	0.020	0.054	0.837	0.016	0.068	0.179
X17	0.171	0.038	0.200	0.115	-0.074	0.821
X18	0.025	0.091	0.142	0.915	0.071	0.070
X19	0.117	0.053	0.123	0.911	-0.011	0.030

²⁹ Hamed Taherdoost, "Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research," *SSRN Electronic Journal*, no. September (2016), <https://www.ssrn.com/abstract=3205035>.

³⁰ Thompson, B. (2004). *Exploratory and Confirmatory Factor Analysis: Understanding Concepts and Applications*. Washington, DC: American Psychological Association.

X20	0.626	0.096	0.142	0.445	0.389	-0.014
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Source: Data Processed (2020)

E. DISCUSSION

Impact of COVID-19 Pandemic on Muslim Consumer Behavior

Based on the result of factor rotation, each variable has been attributed to each factor based on their correlation. Next, it is the time for labeling the six constructs where there is no specific provision in giving the name of each construct³¹. However, entitle the new construct should reflect the overall variables that load on the factor. The process of labeling the construct of factors should be logical and general. It is also subjective based on individual interpretation³².

The result of this study found that the pandemic of COVID-19 gives implication on Muslim consumer behavior, as follows:

1. Changes in Needs and Consumption Patterns

Factors	Component					
	1	2	3	4	5	6
My necessities change during the COVID-19 pandemic (X1)	0.785					
My necessities differ before and after the COVID-19 pandemic (X2)	0.789					
Because of the Social Distancing and Lockdown, my necessities are changing (X4)	0.651					
I postponed buying the things I wanted because there was COVID 19 (X5)	0.734					
My consumption patterns change during the COVID-19 pandemic (X20)	0.626					

During the outbreak of COVID-19, the community has experienced a shifting of consumption patterns due to the situation resulted from the pandemic. The health protocol such as using masks, washing hand regularly, social distancing, even several areas have been shut down leads to the change of consumer needs. The necessities changes to be different from the previous situation before the pandemic. The study conduct by Varade (2020) figured out that the situation resulted from the COVID-19 pandemic such as lockdown, working from home and social distance affect customer

³¹ Anggraini, D., Al Mahkya, D., Fitriawati, A., & Siahaan, R. M. (2020). Analisis Faktor Untuk Menganalisis Variabel Penduduk Miskin. *MAp (Mathematics and Applications) Journal*, vol. 2, no. 1, pp. 28-33.

³² Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*, sage.

behavior in purchasing their needs. Meanwhile, Jribi et al. (2020)³³ found in their study that the lockdown gives an impact on household grocery shopping habits. Sheths (2020)³⁴ also stated that since the pandemic results in the uncertainty, people liable to suspend buying noncompulsory goods and services.

2. More Selective and Well-Informed before Purchasing Goods

Factors	Component					
	1	2	3	4	5	6
I buy and consume goods during the COVID-19 pandemic for staying healthy (X6)		0.626				
Initially, I search for information regarding the products before purchasing and consuming during the COVID-19 pandemic (X7)		0.621				
During the COVID-19 pandemic, I always search for information regarding the stock of the products in the market (X8)		0.680				
During the COVID-19 pandemic, I become more selective in purchasing and consuming goods (X9)		0.777				
If a product with a brand that I want is not available in the market, I will look for alternative products with other brands as a substitute (X12)		0.400				
During the COVID-19 pandemic, I create a schedule for purchasing my necessities (X13)		0.510				

The result of this study also revealed that due to the COVID-19 pandemic, the consumer tends to be more selective in purchasing goods. Therefore, they liable to be more active for gathering information regarding the products, such as the benefits for health, the stock in the market, the availability and the substitutive product. Widayat (2020)³⁵ argued in his study that in response to the COVID-19, the consumer becomes more accurate in choosing and paying attention to care for the food producers and where the foods made in.

³³ Jribi, S., Ben Ismail, H., Doggui, D., & Debbabi, H. (2020). COVID-19 Virus Outbreak Lockdown: What Impacts On Household Food Wastage? *Environment, Development and Sustainability*, vol. 22, pp. 3939-3955.

³⁴ Sheth, J. (2020). Impact Of Covid-19 On Consumer Behavior: Will The Old Habits Return Or Die? *Journal of Business Research*.

³⁵ Widayat, W. (2020). Attitude And Behavior To Eating In The Time Of COVID-19; A Case Study Of Adolescent Consumer In Indonesia. *Jurnal Inovasi Ekonomi*, vol.5, no.3. <https://doi.org/10.22219/jiko.v0i0.11866>

3. Adopting Digital Application in Purchasing Goods

Factors	Component					
	1	2	3	4	5	6
I use online media, online applications, or social media to buy the goods during the COVID-19 pandemic (X14)			0.836			
I use delivery service provide by the stores for purchasing during the COVID-19 pandemic (X15)			0.837			
I use online payment transaction during the COVID-19 pandemic (X16)			0.837			

The use of the online application in shopping has occurred even before the pandemic. However, the implication of the COVID-19 outbreak brings the adoption of e-commerce applications more intensive. This is due to the situation caused by the pandemic such as social distancing, restriction of physical contact, and lockdown. During this outbreak, people must stay at home and cannot go shopping, therefore they prefer to buy their essential goods online by using social media such as Facebook, Instagram, and Whatsapp. In this way, the consumers only need to stay at home, make an order from home, purchase, and make a payment transaction from home, then their groceries come home.

4. Hoarding Behavior

Factors	Component					
	1	2	3	4	5	6
When I found out about the COVID-19 outbreaks in my area, I immediately bought goods in large quantity (X18)				0.915		
During the COVID-19 pandemic, I bought more of my necessities than usual for the purpose of stocking (X19)				0.911		

This study also figures out that COVID-19 pandemic affects consumer hoarding behavior. And, it is the most frequently impact discussed by previous studies such as Miri, et al (2020)³⁶; Wijaya (2020)³⁷; Sheth (2020)³⁸; Yau, et al (2020)³⁹; Shadiqi, et al

³⁶ Miri, S. M., Roozbeh, F., Omranirad, A., & Alavian, S. M. (2020). Panic Of Buying Toilet Papers: A Historical Memory Or A Horrible Truth? Systematic Review Of Gastrointestinal Manifestations Of COVID-19. *Hepatitis Monthly*. Kowsar Medical Publishing Company. <https://doi.org/10.5812/hepatmon.102729>

(2020)⁴⁰; Keane and Neal (2020)⁴¹, and Kirk, et al (2020)⁴². According to Chu (2018)⁴³, hoarding behavior is the action for saving and securing a large number of goods for the ultimate needs. Regarding the COVID-19 pandemic, the consumers mostly act hoarding behavior due to their fear of the lack of essential items needed in the pandemic, such as foods, medicines, and medical equipment (masks, hand sanitizers, antibacterial soap, gloves, etc). The sudden increase of demand in the time of COVID-19 outbreak for certain items, while the product availability does not enough to cover the demand causing scarcity of certain items which is essential during the COVID-19 pandemic. Therefore, it drives consumers to hoarding behavior.

5. Oriented to Priority, Brand and Quality

Factors	Component					
	1	2	3	4	5	6
I only buy and consume goods and services based on my priority necessities during the COVID-19 pandemic (X3)					0.487	
I buy and consume products with certain brands during the COVID-19 pandemic (X10)					0.578	
I buy and consume quality products even though they were more expensive during the COVID-19 pandemic (X11)					0.849	

This research reveals that consumer behavior and consumption patterns change during the period of the pandemic. Furthermore, they also turn into more selective

³⁷ Wijaya, T. (2020). Factor Analysis Of Panic Buying During The Covid-19 Period In Indonesia. *SSRN Electronic Journal*, 10.2139/ssrn.3603750.

³⁸ Sheth, J. (2020). Impact Of Covid-19 On Consumer Behavior: Will The Old Habits Return Or Die? *Journal of Business Research*.

³⁹ Yau, E. K. B., Ping, N. P. T., Shoesmith, W. D., James, S., Hadi, N. M. N., & Lin, L. J. (2020). The Behaviour Changes In Response To COVID-19 Pandemic Within Malaysia. *Malaysian Journal of Medical Sciences*, vol. 27, no. 2, pp. 45–50. <https://doi.org/10.21315/mjms2020.27.2.5>

⁴⁰ Shadiqi, M. A., Hariati, R., Fadhli, K., Hasan, A., Noor, I., & Istiqomah, W. A. (2020). Panic Buying Pada Pandemi COVID-19 : Telaah Literatur Dari Perspektif Psikologi. *Psikologi Sosial*, vol. 18, no. xx, <https://doi.org/10.7454/jps.2020.xx>

⁴¹ Keane, M. P., & Neal, T. (2020). Consumer Panic In The COVID-19 Pandemic. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3600018>.

⁴² Kirk, C. P. dan Rifkin, L. S. (2020). I'll Trade You Diamonds For Toilet Paper: Consumer Reacting, Coping And Adapting Behaviors In The COVID-19 Pandemic. *Journal of Business Research*, vol. 117, pp. 124–131. doi: 10.1016/j.jbusres.2020.05.028.

⁴³ Chu, C. K. (2018). Psychological Ownership In Hoarding. *In Psychological Ownership And Consumer Behavior*, pp. 135-144. Springer, Cham.

buyers who prefer to purchase their necessities based on their priority. During the pandemic, there is a shift in consumer needs, especially primary needs. For example, before pandemic masks and hand sanitizers generally were not the consumer primary needs. However, these items shifted to be the basic needs during the pandemic. Furthermore, the brand and quality also turn into essential attributes before buying products. Currently, the healthy behavior of consumers also influences their consumption behavior. They tend to choose the product based on the quality and brand because they assume that it can maintain their health during the pandemic. Therefore, they prefer more expensive goods, rather than goods at a lower price but cannot guarantee their health during this pandemic.

6. Consult Doctor Online

Factors	Component					
	1	2	3	4	5	6
I consult with the doctors using online media during the COVID-19 pandemic (X17)						0.821

During the pandemic, many people prefer to stay at home even when they are sick due to preventing the spread of coronavirus caused by physical contact and also because many hospitals are full of treating people infected with COVID-19. Therefore, many doctors and hospitals were turning their service to online consultations for the patients. The research conducted by Gong (2020)⁴⁴ found that internet hospitals in China that offered online services consultation and provided medical support to the public could play an important role during the pandemic.

F. CONCLUSION

The purpose of this study is to determine the impact of COVID-19 pandemic on the behavior of Muslim consumers. Using survey method to 100 respondents in Jayapura City, Papua Province, Indonesia, and Exploratory Factor Analysis as the data analysis method, the results of this research find that there are six behaviors of the Muslim consumers in response to the COVID-19 pandemic, namely Changes in Needs and Consumption Patterns, More Selective and Well-Informed before Purchasing Goods, Adopting Digital Application in Purchasing Goods, Hoarding Behavior, Oriented to Priority, Brand and Quality, and Consult Doctor Online. These findings suggest the retailers or the production companies for evaluating the goods manufacturing since there is a shift in consumption patterns of the consumers during

⁴⁴ Gong, K., Xu, Z., Cai, Z., Chen, Y., & Wang, Z. (2020). Internet Hospitals Help Prevent And Control The Epidemic Of COVID-19 In China: Multicenter User Profiling Study. *Journal of Medical Internet Research*, vol. 22, no. 4. <https://doi.org/10.2196/18908>

the COVID-19 pandemic. Also for the sellers, it is better to improve the promotion and sales methods using online tools. Furthermore, for the government, there is a need for regulation regarding the production and consumption to maintain the balance in the demand and supply of the essential products during the pandemic in order to fulfill all the consumer needs. Meanwhile, Islam also has set up the behavior for mankind including the consumption behavior based on the Shariah principles. Therefore, Muslims should comply with Islamic ethical consumption to achieve well-being both in the world and hereafter.

This research limited in the narrow research location as well as a specific and small number of respondents. Therefore, future studies can be done with a more extensive amount of samples and research areas. In addition, the pandemic of COVID-19 also has implication on the consumer preference which is lead to their purchase decision. This side also should be noticed for the upcoming studies. In addition, further research can be done to investigate whether the consumption patterns of the Muslim consumers in the pandemic period are in accordance with the Islamic consumption ethics or the concept of *Maslahah*.

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