

Customer's Responses to Changes in Islamic Banking Service Post Covid-19 Pandemic in Indonesia

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Abstract

This research focuses on identifying customers' responses to the changes that limit direct service and implementing online-based Islamic banking services. This study uses a mix-method approach and results of interviews with Islamic bank staff and questionnaires to 260 respondents, showed that the changes that accommodate Covid-19 protocol in CARTER were received positively by customers as a form of empathy and response to their complaints. It also emphasizes that the pandemic is not an entirely negative phenomenon. Instead, it gives momentum for business development through a transformation toward the digital banking services that trend in financial business.

Keywords: *Islamic banking, Service quality, Customer response, Change, Innovation.*

INTRODUCTION

The Covid-19 pandemic that has hit the world, including Indonesia, has brought fundamental changes in various aspects of human life, including Islamic banking services. The most significant regulatory changes in this sector occur in its service quality. The service quality that previously highly relied on human resources and direct interaction must adjust to the high risk of Covid-19 transmission and spread. For this reason, the standard and pattern of Islamic banking service quality, known as CARTER, must be modified to follow the Covid-19 health protocol. Further study on how customers of Islamic banks responded to the adjustment that aims to minimize direct interaction through a series of procedures is needed.

The main idea of this study is to investigate how banking institutions respond to health protocol policy by reorganizing service infrastructure and developing new service procedures (Sihotang & Hasanah, 2021). The issues regarding this aspect and the Covid-19 protocol consist of three major studies. First, the study analyzes banking institutions' infrastructural adjustments, which emphasizes service procedures changes (Zouari & Abdelhedi, 2021). Second, the study that is the response of human banking resources to the implementation of CARTER policy along with health protocol highlights how service providers view the new regulation (Hasan, 2020). Third, is the study regarding customers' responses to the new regulation implementation (Maryani, 2019).

This article examines customers' responses analytically as the primary point to see banking service transformation from a broader perspective. By putting the Covid protocol in context, this article shows that service change that accommodates health protocol is necessary. This study has three substantial focuses: *First*, to identify the service quality of Islamic banking post the Covid-19 pandemic; *Second*, to determine the online-based service quality in Islamic banking post the Covid-19 pandemic; *Third*, to analyze the customer response and satisfaction with changes in service quality of Islamic banking post the Covid-19 pandemic.

The pandemic has had a crucial impact on the service quality of Islamic banking. Adjustment to the service form eliminates direct contact between the staff and customers. A human-to-human direct contact should be avoided post the pandemic as it causes Covid-19 transmission and breakout. Therefore, two predictions regarding the outcome of this study are: *first*, the change of banking service quality form involves eliminating

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direct service to customers, and *second*, the customers respond negatively, which means that they are unsatisfied with and oppose the change.

LITERATURE REVIEW

Islamic Bank

Bank Syariah, or sharia bank, another name for an Islamic bank in Indonesia, develops due to the prohibition of usury (interest) in banking transactions according to Islamic laws. Usury is additional charges put on loan principal in a contract. The basic idea of this prohibition is to help and protect borrowers who do not have sufficient funds to pay back the lender. Profit sharing and community losses contracts, as well as *Mudharabah*, are the essential parts of Islamic banking implementation that eliminate usury (Azmat, Hassan, et al., 2020: 3). The application of a profit-sharing system causes the surplus gained by each party to depend on the economic situation. If the business that supports it is profitable, both the revenue provider and the company will divide the profits based on the negotiated rates and vice versa (Azmat et al., 2020). Besides usury, Islamic law also forbids *Gharar*, a form of uncertain contract material, such as financial derivatives in conventional banks that do not conform with Islamic law (Miah et al., 2020: 13). Nevertheless, there are no significant differences between Islamic and the conventional banks in terms of competition, efficiency, and risk features (Abedifar et al., 2015: 637).

An Islamic bank is a form of sharia economy or Islamic economy that ultimately aims to improve people's welfare (Hassan & Aliyu, 2018: 34). Thus, it can contribute to developing a sustainable economy and nature utilization, decreasing social discrepancy, and decreasing the long-term effect of pollution (Aysan & Ozturk, 2018: 23). This Islamic bank has become the fastest growing global financial segment in developing countries with seven dimensions used in its transactions, namely adherence to Islamic divine principles, wisdom, balance, justice and equality, sincerity, trust, and responsibility (Imam & Kpodar, 2016; Widana et al., 2014). The variables of Islamic banks (Islamic bank loans, net loans, and bank deposits and size) positively impact economic growth post normal financial development. Still, they have negative correlations with solid economic development because Islamic bank loan reduces Islamic countries' economic growth as a result of higher risk sharing post economic overheating or disposition for real estate investment which transaction is less productive (Mensi et al., 2020: 12). Even structurally, Islamic banks also face challenges such as the lack of security and privacy, expert staffs, and trust from the targeted markets (Naeem, 2019: 676).

Public Service

Public service aims to improve the welfare of the community. Public services are duties and responsibilities that the government should carry out for its people (Chen et al., 2020). The government refers to a public service practitioner that helps the community meet their general needs by regulating and establishing regulations of public services (Powell & Osborne, 2020). The government cannot guarantee a successful public service implementation without the contribution of other practitioners from the private sector. Hence, practitioners and government cooperation are needed to improve public service. One of these improvement processes is creating a public service platform that extensively and adequately supports the process of public service (Ranerup et al., 2016). Public service will succeed if it prioritizes public interest and does not take sides for some reasons that are not mutually beneficial.

The government serves the needs of the general public. There are four public service forms: administrative, goods, assistance, and regulatory. First, the administration handles documenting and other related things (Opanasiuk & Romanchenk. Second, the public interest service manages the procurement and distribution of these necessities. Third, assistance service is the service that aids the procurement of supporting facilities and infrastructure, such as health services. Fourth, regulatory service contributes by establishing policies and laws regulating public life aspects (Wang et al., 2020). The provision of public services varies greatly depending on the area's composition and the community's needs (Levine & Gershenson, 2014). The objective of these four forms of the public is to fulfil public necessities.

Covid-19

Covid-19 has become one of the deadliest infectious diseases in the last two years. This disease adversely impacts people with a low immune system (Dogra et al., 2021). It transmits pretty efficiently, and the pattern constantly changes, making people vulnerable to sudden infection. The Covid-19 pandemic has become a new burden for the community because it restricts their movement. This situation has prompted the state to issue policies limiting physical contact, prohibiting crowds, advising to wear masks and protection, implementing online learning, closing public spaces and worship places, and closing regional or state entrances (O. A. Ataguba & Ataguba, 2020). Since the pandemic, people have started to carry out their activities while adapting to the new normal that pays attention to health aspects to prevent Covid-19 transmission Covid-19 (Corpuz, 2021a).

Covid-19 has increased digital media use for buying and selling transactions, banking, and public services. The pandemic has led to the increasing trend of shopping on e-commerces (Elrhim & Elsayed, 2020). These increases are significantly affected in traditional markets and are also available on e-commerces (Guthrie et al., 2021; Sayyida et al., 2021). Many banks offered online services post the pandemic in the banking sector, and conventional banks improved their service by utilizing the internet (Acharya et al., 2021; Hasan et al., 2020). In line with those phenomena, consumers' trust in online banking services grows (Hameed, 2021). Subsequently, the government may offer public service through the available digital technology. In this case, social media has reached more community members (Agostino et al., 2020).

METHODOLOGY

Service quality is an essential issue in public service. A good level of service can significantly influence users' responses and eventually improve the performance of the service providers. This study focuses on the reactions of Islamic bank customers to service system changes to follow the government policies regarding Covid-19 prevention. Thus, this study observed service changes in ten Indonesian Islamic banks in East Java. There are two in Surabaya City and eight in four regencies on Madura Island. Those banks are: BSI KC Darmo Surabaya, BSI KC Darmawangsa, BSI KC Bangkalan, BSI KC Sampang, BSI KC Pamekasan, BSI KC Sumenep, BPRS Bhakti Sumekar KP Sumenep, BPRS KC Pamekasan, BPRS SPM KP Pamekasan, BPRS KC Bangkalan. These locations directly influence the customer's responses due to their other characteristics. Thus, their responses to the adjustments might also be dissimilar.

Post the pandemic, the changes in Islamic banking service patterns in East Java, Indonesia, were analyzed using a mixed-method approach that combines qualitative and quantitative research techniques. The qualitative process involves observing various service information displayed on the glasses or walls of the bank office, rearrangement of the waiting room, treatment of work equipment, and verbal communication and directions given by banking staff (security officers). In-depth interviews were also conducted with three chairpersons of Islamic Banks since they have most of the data and information that the researchers need. The three informants are informant 1 (R1, Head of BSI Darmo Surabaya), informant 2 (R2, Head of BSI Pamekasan Madura), and informant 3 (R3, Director of BPRS Sarana Prima Mandiri Pemakasan Madura). The BSI is the most prominent Islamic bank in Indonesia. In Surabaya, the head office is on Jalan Darmo, while in Madura, the head office is in Pamekasan Regency. BPRS Sarana Prima Mandiri is an Islamic bank from Madura with a head office in Pamekasan regency.

Meanwhile, questionnaires were distributed to 260 customers through proportionate random sampling to figure out the customer's responses. However, not all questionnaires were responded to and returned by the customers. The number of customers who responded and returned the questionnaires to each bank are as follows: BSI KC Darmo Surabaya: 39 respondents, BSI KC Darmawangsa: 39 respondents, BSI KC Bangkalan: 31 respondents, BSI KC Sampang: 23 respondents, BSI KC Pamekasan: 23 respondents, BSI KC Sumenep: 23 respondents, BPRS Bhakti Sumekar KP Sumenep: 23 respondents, BPRS Bhakti Sumekar KC Pamekasan: 16 respondents, BPRS SPM KP Pamekasan: 23 respondents, and BPRS KC Bangkalan: 12 respondents. Thus, the total number of respondents is 260.

The survey assesses customers' satisfaction with the services using CARTER dimension indicators post the pandemic. The results were then analyzed using Structure Equation Modeling (SEM). The steps for conducting SEM are as follows: *first*, developing a theory-based model; *second*, designing a flow chart (path diagram); *third*, converting flowcharts into equations; *fourth*, choosing the input matrix and model estimation; *fifth*, identifying problems; *sixth*, evaluating the goodness of fit criteria; and *seventh*, interpreting and modifying the model. The last step was conducted by analyzing the model and modifying other models that did not meet test requirements. After the model is estimated, the residual must be small or close to zero, and the residual covariance frequency distribution must be symmetrical. The limit to consider whether or not to modify a model is a residual value of 5%.

RESULTS AND DISCUSSION

The Covid-19 pandemic has forced the banking sector to modify its service quality. The adjustment separated from the government's PPKM (*Pemberlakuan Pembatasan Kegiatan Masyarakat* or Enforcement of Community Activity Restrictions) regulation to tackle the transmission and spread of Covid-19. In this case, we identify the responses to the modification into three approaches: *firstly*, changes in face-to-face customer service post the Covid-19 pandemic; *secondly*, the development of online services post the Covid-19 pandemic; and *lastly*, customers' satisfaction with the services post the Covid-19 pandemic.

Direct Service Post the Covid-19 Pandemic

There has been a significant change in Islamic banking services post the Covid-19 pandemic. Service quality assessment usually employs the CARTER approach (Compliance, Assurance, Reliability, Tangible, Empathy and Responsiveness), which generally uses direct face-to-face service. To comply with government regulations for Covid-19 prevention, Islamic banks made fundamental changes to their services by considering social distancing and interaction restrictions into three primary practices. First the limitation of banking operational hours. Several offices are closed in some regions, especially with more than one similar Islamic bank. They take turns in providing service on a daily or weekly basis. Second, service restriction cuts operational hours, from 08.00 - 15.00 on regular days to 08.30 – 14.00 post the pandemic. The closing and reduction of operating hours are some efforts to prevent Covid-19 transmission. The Informants statement via phone is as follows:

"To prevent the transmission and spread of Covid-19 and to prove BSI's compliance with micro PPKM rules, BSI has restricted its direct services to customers. This restriction involves closing some of the BSI branch offices in Surabaya and providing service alternately between the offices. Second, reducing branch offices' service hours which previously operated from 08.00-15.00 to 08.30-14.00 post the pandemic" R1 (Informant 1, BSI Kacab Darmo).

In addition to providing staff with standard anti-Covid equipment (temperature check, mask, face shield, etc.), the banks also limit the risk of virus exposure through the following filtering: 1) controlling customer queues indoors; 2) facilitating outdoor queues; 3) filtering customers who need direct services by measuring their body temperatures first, and 4) directing customers to use online services on banking activities are online, and 5) prohibiting customers who do not queue to enter the office buildings. They are secondly limiting the direct service by implementing health protocols. This direct service post the pandemic is as described by the Director of BPRS Sarana Prima Mandiri Pamekasan as follows:

"The procedures for direct service are: 1) Islamic banks allocate two outdoor spots for queues (in the yard/parking lot), and indoor queues with some distances and the customers have to wear masks; 2) the queue numbers are distributed outdoor; 3) When a customer gets his/her turn, he/she has to enter the building first and join the indoor queue based on the available seats; 4) before entering the indoor queue, customers have to use hand sanitizer first and check their body temperatures; 5) Those with high body temperature will not be served and have to go home" R3 (Informant 3, Director of BPRS-SPM Pamekasan).

They are third, limiting the number of staff/employees through two methods. First, the number of permanent staff is restricted by terminating some less productive employees or those whose job desk is replaced with other activities. Second, a temporary restriction is done by scheduling employees' work hours by turns. This scheduling complies with the regulation that only allows 50% to 70% of employees to work from the office, while the rest has to work remotely. Besides implementing the Covid-19 health protocol, these methods also

increase the efficiency of Islamic banking service management. Those restrictions are as stated by R2 (Informant 2: the Head of BSI Pamekasan branch office) as follows:

"According to the company regulation, a minimum of 70% of employees must work from home, and a maximum of 50% of employees must work from office" R2 (Informant 2, Head of BSI Pamekasan branch office).

This statement shows how Islamic banks care and comply with health regulations post the pandemic. Besides, the service restriction is a form of service quality commitment from Islamic banks for its customers.

The Development of Online Services Post the Covid-19 Pandemic

The pandemic has stimulated Islamic banks to make an innovation to an online service called Islamic Banking Electronic Channel (E-Channel). This service includes Mobile Banking (M-Banking), SMS banking, internet banking, business internet, and ATM. Those online services aim for more effective and efficient services and minimize direct interaction with the customers since it poses a risk of virus infection. This service was implemented before the pandemic but was still limited to specific services. However, due to the pandemic, its implementation has become more intensive.

Table 1. Online service quality that replaces direct service quality in Islamic banking post the Covid-19 pandemic.

Service Quality	Online	Direct
Cash withdrawal	ATM withdrawal/cash deposit	Teller
Cash deposit	ATM cash deposit	Teller
Transferring between banks	ATM, M-Banking	Teller
Opening account	M-Banking, Internet banking	Customer Service
Payment	M-Banking	Customer Service
Banking information	SMS Banking, Internet Banking, ATM, M-Banking	Customer Service

The result of an interview with R2 (Respondent 2: Head of BSI Pamekasan Branch Office) about the shift to online-based service is as follows:

"Some of the adaptations are shifting the offline service at the bank office to digital services, such as opening a bank account via M-banking, depositing cash through cash deposit machine, and transfer via ATM and M-banking" (Informant 2: Head of BSI Pamekasan branch office).

In addition, to support good service quality, the banks also improve their network facilities and capacities for better service efficiency, speed, and reliability by using a more stable internet network to support digital transactions. In this case, the pandemic has become a catalyst for digital innovation among Islamic banks with the introduction of the Fast Transfer (BI Fast) feature on M-Banking and manual transactions of the National Clearing System at teller counters; as well as the implementation of Shifting Transactions (Digital Branch Services) by optimizing the roles and functions of ATMs, M-Banking, and *sharia* banking web form (Islamic banking websites). Those services aim to optimize the effectiveness and efficiency of service quality management post the pandemic by minimizing the role and function of branch and cash offices. Therefore, these online services align with the modern and digitalization era. The interview results with R2 (Informant 2, Head of BSI Pamekasan branch office) are as follows:

"To prevent the transmission and spread of Covid-19, we encourage transactions via E-Channel such as Mobile Banking, ATM, etc. Some transactions should transform into digital services via mobile banking and ATM. An example of a new facility from BI is the fast transfer (BI Fast) that replaces manual transactions via National Clearing System at the teller counter." R2 (Informant 2, Head of BSI Pamekasan branch office)

The above statement indicates that customer concern is the priority of service quality in Islamic banking. When face-to-face service is not feasible due to the risk of Covid-19 transmission, Islamic banking offers a solution for a safer, faster, and more accessible service quality through online service.

The Customers' Responses to Service Quality Post the Covid-19 Pandemic

The customers' responses to the service adjustment with health protocol indicate how far the implemented new procedures influence the image of Islamic banks. The survey answers are to explain: *First*, how good customers' satisfaction index is on Islamic banking service quality post the pandemic by employing the CARTER

dimension indicator; and *second*, the implication of this service quality to the image of Islamic banking. Through these two objectives, the study obtained insights: *First*, how the customers perceive the pandemic and the whole health protocol regulations; and *second*, how the customers respond to the service quality of Islamic banking post the pandemic.

The change to the CARTER dimension as a satisfaction indicator toward Islamic banking service quality was implemented post the pandemic, as in Table 1.

Table 2. Implementation of CARTER *service quality* dimension in Islamic banking post the Covid-19 pandemic.

CARTER Dimensions	The implementation post the Covid-19 pandemic
<i>Compliance</i>	We adhere to Covid-19 health protocol regulations by accommodating the whole service policy, obeying Islamic laws and operating based on Islamic banking and economic principles.
<i>Assurance</i>	They are showing politeness in verbal and written communication with customers and following Covid-19 health protocol standards by wearing masks and applying physical distancing. Besides, transmission should use ATMs, M-Banking, and Islamic banking Webforms.
<i>Reliability</i>	They are providing services that adhere to the standard Covid-19 health protocol. The benefits include physical distancing, customer service restriction, service hours reduction, and temporary closure of customer service offices.
<i>Tangible</i>	Protecting against the spread of Covid-19 by providing masks and hand sanitizers, limiting queues, and protecting customer-employee contacts
<i>Empathy</i>	The feeling and spirit to take care of each other to prevent the transmission and spread of Covid-19
<i>Responsiveness</i>	It is shifting and replacing face-to-face services with online digital-based services.

The descriptive statistics of the satisfaction survey with 260 customers in 10 Islamic banks yield an average score of 3.919. Score 1 means very unsatisfied, while five means very satisfied. Thus, a score of 3.919 indicates that the customers are pretty satisfied with the banking services post the pandemic. A satisfactory result is mainly in the aspects of compliance and empathy.

Table 3. Analysis of Islamic banking service satisfaction post the pandemic using CARTER indicators.

CARTER dimensions	Average Values	Description
<i>Compliance</i>	4.108	Satisfactory
<i>Assurance</i>	3.964	Satisfactory
<i>Reliability</i>	3.948	Satisfactory
<i>Tangible</i>	3.584	Satisfactory
<i>Empathy</i>	4.069	Satisfactory
<i>Responsiveness</i>	3.844	Satisfactory
Average Service Quality	3.919	Satisfactory

Source: Descriptive test results of processed data.

More detailed information regarding the responses is in Table 4.

Table 4. Path coefficient of service quality in Islamic banking image post the pandemic.

Relationship Structure	Path coefficient	CR value	Prob.	Description
Service quality → image of Islamic banking	0.523	3.279	0.001	Significant

Source: Processed by researchers.

Table 5. Direct, indirect, and total effects of service quality on the image of Islamic banking post the pandemic.

Effect	Direct Effect	Indirect Effect	Total Effect
Service quality → image of Islamic banking	0.523	0.000	0.523

Source: Processed by researchers.

The SEM analysis reveals service quality significantly affects the image of Islamic banking post the pandemic. A probability value less than 0.05 means that implementing Islamic banking service quality post the pandemic still contributes positively to the bank's image. In this case, the performance yields a good and satisfactory response from the customers; *Second*, service quality contributes to the Islamic banking image at 0.523 or 52,3%, as presented in Table 4. A good service quality provided to customers will improve the appearance of Islamic banking by 52,3%. Those results conclude that the customers received the service quality of Islamic banking post the pandemic well.

The Covid-19 pandemic has fundamentally changed the service quality of Islamic banks in East Java. Some adjustments to comply with the health regulations that prevent the transmission and spread of Covid-19 are perceived positively and enable the banks to improve their service through digitalization. The social distancing policy that requires people to wear protective equipment and demands the banks to reorganize their service halls, conduct strict screening, and shift to online service does not seem to cause inconvenience to the customers. They consider those steps suitable to be carried out post the pandemic. Additionally, customers' good literacy also keeps the bank's image from declining.

This outcome signifies that the community is ready to enter a new normal situation marked by increased daily activities that conform to health protocols (Corpuz, 2021b). The changes in service quality are based on distancing policies) and the utilization of personal protective equipment is no longer considered a burden or trouble that interferes with public service (Ataguba, 2020). These factors become a fundamental aspect for Islamic banks to develop financial business because they have a solid base that combines seven dimensions in their transactions, namely adherence to Islamic divine principles, wisdom, balance, justice and equality, sincerity, trust and responsibility (Imam & Kpodar, 2016; Widana, 2020). As a result, Islamic banking can overgrow in developing countries.

The policies initially directed to tackling the pandemic have gained a new inspiration for banks to improve their service efficiency and create innovations. They can maintain customer satisfaction and trust through online services (Agostino et al., 2020). In this context, the Covid-19 pandemic has positively given momentum to Islamic banks to make some more effective, efficient, fast and safe service innovations that go in line with the current global trend of internet-based financial business (Ahmed et al., 2021); (Syed et al., 2020), (Levy, 2021); (Sayyida et al., 2021)). This finding answers some structural issues in Islamic banking development, such as the lack of security, privacy, expert staff, and trust among the targeted markets (Naeem et al., 2019).

This outcome confirms previous research on the impact of Covid-19, which is not entirely negative (Yu et al., 2020). This research reveals their readiness, as shown by how the customers accept the new service procedures that 'minimize' the interaction between staff and customers and how the customers' level of satisfaction does not decrease (Alharthi et al., 2021). For example, in the educational sector, online learning policies have enhanced people's technology literacy (Lee, 2019). In other words, the pandemic policies are the catalysts for transformation into a digital community that relies on their activities on the virtual network. This policy is a foundation for developing Islamic banking business in the future.

CONCLUSION

The result of this study indicates that the adjustment of the CARTER standards and patterns to health protocols does not influence the customers' review of Islamic banking services. They consider the adjustment as a form of empathy from the banks to protect their customers from virus transmission risk in the banking cluster. They also see the technological innovation in the transaction process as an answer to their complaint all this time. This finding highlights that service quality adjustment is a necessity in a pandemic.

This study presents some instances from the Islamic banking sector that the Covid-19 pandemic complemented with a series of restriction policies from the government will not cause the banking industry to collapse. Instead, the service quality reconstruction has allowed the banks to advance their business. Adjusting to health protocol and technological innovation is perceived as a part of improvement toward faster, easier, and safer customer service than trouble.

The customers' characteristics, including their literacy of Covid-19 and service quality, become the keywords in their response to Islamic banking service quality change. It means that a good understanding of Covid-19 and its transmission risk and public standards are the reason for this positive response. However, this finding still needs further confirmation from similar studies involving a larger population. Likewise, the broader location scope can hypothetically influence the literacy level and response to the service quality change.

REFERENCES

- Abedifar, P., Ebrahim, S. M., Molyneux, P., & Tarazi, A. (2015). Islamic banking and finance: Recent empirical literature and directions for future research. *Journal of Economic Surveys*, 29(4), 637–670. <https://doi.org/10.1111/joes.12113>
- Acharya, M., Biswas, S., Das, A., Dave, A., & Mathur, U. (2021). Resuming eye bank services post the Covid-19 pandemic: Experience and inferences. *Indian Journal of Ophthalmology*, 69(4), 391-394. https://doi.org/10.4103/ijo.IJO_2617_20
- Agostino, D., Arnaboldi, M., & Lema, M. D. (2020). New development: Covid-19 as an accelerator of digital transformation in public service delivery. *Public Money and Management*, 41(1), 69-71. <https://doi.org/10.1080/09540962.2020.1764206>
- Ahmed, I., Hu, X., Ben, Acharya, M. P., & Ding, Y. (2021). Neighbourhood structure assisted non-negative matrix factorization and its application in unsupervised point-wise anomaly detection. *Journal of Machine Learning Research*, 22(34), 1-32.
- Alharthi, M., Hanif, I., Ur Rehman, H., & Alamoudi, H. (2021). Satisfaction of Pakistan's Islamic banking system post the Covid-19 pandemic Logistic model-based identification of the determinants to improve customer. *Journal of Islamic Marketing*. <https://doi.org/10.1108/JIMA-06-2020-0189>,
- Ataguba, J. E. (2020). Covid-19 Pandemic, a War to be Won: Understanding its Economic Implications for Africa. In *Applied Health Economics and Health Policy*, 18(1), 325-328. <https://doi.org/10.1007/s40258-020-00580-x>
- Ataguba, O. A., & Ataguba, J. E. (2020). Social determinants of health: the role of effective communication in the Covid-19 pandemic in developing countries. *Global Health Action*, 13(1), 320-327. <https://doi.org/10.1080/16549716.2020.1788263>
- Aysan, A. F., & Ozturk, H. (2018). Does Islamic banking offer a natural hedge for business cycles? Evidence from a dual banking system. *Journal of Financial Stability*, 36, 22-38. <https://doi.org/10.1016/j.jfs.2018.02.005>
- Azmat, S., Hassan, M. K., Ghaffar, H., & Azad, A. S. M. S. (2020). State contingent banking and asset price bubbles The case of the Islamic banking industry. *Global Finance Journal*. 50(C). <https://doi.org/10.1016/j.gfj.2020.100531>
- Chen, J., Walker, R. M., & Sawhney, M. (2020). Public service innovation: a typology. *Public Management Review*, 22(11), 1674-1695. <https://doi.org/10.1080/14719037.2019.1645874>
- Corpuz, J. C. G. (2021a). Correspondence: Adapting to the culture of "new normal": An emerging response to Covid-19. *Journal of Public Health (United Kingdom)*, 44(2), 293e-294e. <https://doi.org/10.1093/pubmed/fdab057>
- Corpuz, J. C. G. (2021b). Covid-19 and the rise of social activism in Southeast Asia: a public health concern. *Journal of Public Health (Oxford, England)*. 43(2), 364e-365e. <https://doi.org/10.1093/pubmed/fdab063>
- Dogra, P., Ruiz-Ramirez, J., Sinha, K., Butner, J. D., Peláez, M. J., Rawat, M., Yellepeddi, V. K., Pasqualini, R., Arap, W., Sostman, H. D., Cristini, V., & Wang, Z. (2021). Innate Immunity Plays a Key Role in Controlling Viral Load in Covid-19: Mechanistic Insights from a Whole-Body Infection Dynamics Model. *ACS Pharmacology and Translational Science*. 4(1), 248-265. <https://doi.org/10.1021/acspsci.0c00183>
- Elrhim, M. A., & Elsayed, A. (2020). The Effect of Covid-19 Spread on the E-Commerce Market: The Case of the 5 Largest E-Commerce Companies in the World. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3621166>
- Guthrie, C., Fosso-Wamba, S., & Arnaud, J. B. (2021). Online consumer resilience post a pandemic: An exploratory study of e-commerce behavior before, post and after a Covid-19 lockdown. *Journal of Retailing and Consumer Services*. 61(C). <https://doi.org/10.1016/j.jretconser.2021.102570>
- Hameed, J. (2021). Influence of Online Banking on consumers and its perception and acceptance post Covid-19. *KIET Journal of Computing and Information Sciences*. 4(1), 1-14. <https://doi.org/10.51153/kjicis.v4i1.53>
- Hasan, I., Politsidis, P. N., & Sharma, Z. (2020). Bank Lending post the Covid-19 Pandemic. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3711021>
- Hassan, M. K., & Aliyu, S. (2018). A contemporary survey of Islamic banking literature. *Journal of Financial Stability*. 34(2), 12-34. <https://doi.org/10.1016/j.jfs.2017.11.006>
- Herianingrum, S., Ratnasari, R. T., Widiastuti, T., Mawardi, I., Amalia, R. C., & Fadhilillah, H. (2019). The impact of Islamic bank financing on business. *Entrepreneurship and Sustainability Issues*. 7(1), 133-145. [https://doi.org/10.9770/jesi.2019.7.1\(11\)](https://doi.org/10.9770/jesi.2019.7.1(11))
- Imam, P., & Kpodar, K. (2016). Islamic banking: Good for growth? *Economic Modelling*, 59, 387–401. <https://doi.org/10.1016/j.econmod.2016.08.004>
- Lee, H. W. (2019). Applying online educational technology to foster financial literacy: Financial-institution leaders' insights. In *Qualitative Report*. 24(10), 2625-2654. <https://doi.org/10.46743/2160-3715/2019.3605>
- Levine, J. R., & Gershenson, C. (2014). From Political to Material Inequality: Race, Immigration, and Requests for Public Goods. *Sociological Forum*. 29(3), 607-627. <https://doi.org/10.1111/socf.12106>
- Levy, H. L. (2021). Robert guthrie and the trials and tribulations of newborn screening. *International Journal of Neonatal Screening*. <https://doi.org/10.3390/ijns7010005>
- Maharani, S. (2020). The Beyond Challenges Of Indonesia Sharia Banking In The Digitalization Era. *Annual International Conference on Islamic Economics and Business (AICIEB)*.
- Mensi, W., Hammoudeh, S., Tiwari, A. K., & Al-Yahyaee, K. H. (2020). Impact of Islamic banking development and major macroeconomic variables on economic growth for Islamic countries: Evidence from panel smooth transition models. *Economic Systems*. 44(1) <https://doi.org/10.1016/j.ecosys.2019.100739>
- Miah, M. D., Kabir, M. N., & Safiullah, M. (2020). Switching costs in Islamic banking: The impact on market power and financial stability. *Journal of Behavioral and Experimental Finance*. 28(C). <https://doi.org/10.1016/j.jbef.2020.100409>

- Naeem, M. (2019). Understanding the role of social networking platforms in addressing the challenges of Islamic banks. *Journal of Management Development*. 38(8), 664-680. <https://doi.org/10.1108/JMD-04-2019-0107>
- Naeem, M., Imran, M., Ahmad, S., & Siddiqui, M. K. (2019). Zero-sum flow number of octagonal grid and generalized prism. *Proyecciones*. 38(5), 1027-1038. <https://doi.org/10.22199/issn.0717-6279-2019-05-0066>
- Opanasiuk, Y., & Romanchenko, Y. (2020). Public Management Of Administrative Services. *Vіsnik Sums'kogo Deržavnogo Universitetu*, 18(2), 163-173. <https://doi.org/10.21272/1817-9215.2020.2-18>
- Powell, M., & Osborne, S. P. (2020). Social enterprises, marketing, and sustainable public service provision. *International Review of Administrative Sciences*. 86(1), 62-79. <https://doi.org/10.1177/0020852317751244>
- Ranerup, A., Henriksen, H. Z., & Hedman, J. (2016). An analysis of business models in Public Service Platforms. *Government Information Quarterly*. 33(1), 6-14. <https://doi.org/10.1016/j.giq.2016.01.010>
- Sayyida, S., Hartini, S., Gunawan, S., & Husin, S. N. (2021). The Impact of the Covid-19 Pandemic on Retail Consumer Behavior. *Aptisi Transactions on Management (ATM)*. 5(1), 79-88. <https://doi.org/10.33050/atm.v5i1.1497>
- Sihotang, M. K., & Hasanah, U. (2021). Islamic Banking Strategy in Facing the New Normal Era Post the Covid-19. *International Seminar on Islamic Studies*. 2(1), 479-485
- Syed, M. H., Khan, S., Rabbani, M. R., & Thalassinou, Y. E. (2020). An artificial intelligence and NLP based Islamic FinTech model combining zakat and Qardh-Al-Hasan for countering the adverse impact of COVID 19 on SMEs and individuals. *International Journal of Economics and Business Administration*. 8(2), 351-364. <https://doi.org/10.35808/IJEBA/466>
- Wang, T. M., van Witteloostuijn, A., & Heine, F. (2020). A Moral Theory of Public Service Motivation. *Frontiers in Psychology*. 11(1), 1-15. <https://doi.org/10.3389/fpsyg.2020.517763>
- Widana, G. N. O., Wiryono, S. K., Purwanegara, M. S., & Toha, M. (2014). Measuring Islamic business ethics within Indonesia Islamic banks. *Global Journal Al-Thaqafah*. 7(1), 306-311. <https://doi.org/10.7187/gjat622014.04.02>
- Widana, I. W. (2020). The effect of digital literacy on the ability of teachers to develop HOTS-based assessment. *Journal of Physics: Conference Series*. 19(1), 1-9
- Yu, X., Liu, C., Wang, H., & Feil, J. H. (2020). The impact of Covid-19 on food prices in China: evidence of four major food products from Beijing, Shandong and Hubei Provinces. *China Agricultural Economic Review*. 17(3), 1-15. <https://doi.org/10.1108/CAER-04-2020-0054>
- Zouari, G., & Abdelhedi, M. (2021). Customer satisfaction in the digital era: evidence from Islamic banking. *Journal of Innovation and Entrepreneurship*. 10(9), 1-18. <https://doi.org/10.1186/s13731-021-00151-x>