

# THE IMPACT OF ISLAMIC ACCOUNTING INSTRUMENTS ON THE SUSTAINABILITY OF IRAQI BANKS

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## ABSTRACT

*This research aims to evaluate the role of Islamic Accounting Instruments for Investment in enhancing sustainable development in banks by studying and analyzing the financial statements and reports of a number of Islamic banks in Iraq and determining the developmental role of these instruments in the developing the Iraqi economy. The main problem of the research is the evaluation of the investment instruments of the Islamic accounting and their role in the light of the global economy and the dominance of the commercial banks on most financial transactions, in addition to obtain real evidences which indicate to the impact of these instruments on sustainable development in Islamic countries. The researchers concluded that the Islamic Accounting Instruments for Investment are capable to enhance the Islamic economy and to create a qualitative leap in the field of sustainable development if they applied in a scientific and correct manner. Also, the researchers found that strong correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development. We recommend establishing a specialized organization to measure the quality of financial services offered by Islamic banks, in addition to the need for establishing an Islamic financial system capable of keeping pace with the global financial system by encouraging the adoption of investment instruments for the Islamic economy.*

**Keywords:** Islamic Accounting, Islamic Banks, Islamic Accounting Instruments for Investment, Sustainable Development

## INTRODUCTION

Banks play an important role in the national and international economy through its importance as one of the most important financing and investment engines (Rahman & Rahim, 2020). Therefore, many studies have been published which seek to enhance the role of banks, maintain their operational efficiency, and raise the level of public confidence in them to encourage for investing (Mehmet, 2017; Ata & Ali, 2017). As one of the most important ways to enhance the role of banks in protecting the national economy and raising its efficiency is sustainable development. Many scholars mentioned that the Islamic accounting instruments can be the best results to enhance the sustainability in banks and to improve the role of banks in society.

Especially in Islamic countries (Caraiiani et al., 2012; Mahmood, 2005) Islamic accounting has developed many instruments to achieve the objectives of sustainable development according to the principles of Islamic law (Zubair, 2007). These tools are the tools of Islamic accounting for investment, which can enhance the effectiveness of investment in banks and work to increase the level of sustainable development, in spite of some obstacles from which can reduce the efficiency of these tools because of the uncertainty of the effectiveness of these tools in enhancing the efficiency of the banks operations (Munawar et al., 2005). One of the most important objectives of Islamic accounting is to achieve sustainable development by preserving the available wealth and providing future opportunities to generate future wealth in

order to sustain it (Harris, 2015). Therefore, Islamic accounting can be considered one of the most important engines of sustainable development because of its characteristics which depend on fair and equal distribution of risks and profits between parties and its principles that can reduce risks which lead to financial crises. So, the principles of Islamic law can reduce the efficiency of sustainable development in banks but the Islamic accounting instruments for investment can solve most of the problems and find results to finance the projects and enhance the local and foreign investments in addition to promote the suitability in banks, therefore the users of Islamic accounting instruments for investment should have a good level of knowledge about these instruments and their impact on the operational activities in banks.

## METHODOLOGY

The use of Islamic accounting instruments for investment can be useful to increase the benefits of the operational activity of the banks, so the applying of these instruments can enhance the sustainable development of the banks. Based on what has been mentioned the research deals with the following questions: Are Islamic accounting Instruments for Investment able to enhance the sustainable development of the banks? Are the users of Islamic accounting Instruments for Investment can measure their impact on the bank's operational activity? Which Islamic accounting Instrument for Investment is the most significant one to impact of the bank's operational activity?

Mainly, the research is based on the following hypotheses:

*H1: There is statistically significant correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development*

*H2: The impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness.*

## The Concept of Islamic Accounting

Islamic Accounting involves the set of laws of dealing finance or other economic action in a Sharia compliant manner, the manner conforming to Quran and Sunnah (Harris, 2015). The Islamic Fiqh has basically dealt with locating what is wanted, forbidden, promoted, disappointed, or just allowable according to the main two resources of Islam (Quran and Sunnah) (Khan et al., 2008). This can be applied to matters like royalty, currency, labor, taxes, and everything else. On the other hand, the social science of Islamic accounting, works to characterize, analyze and describe production, allocation, and consumption of outputs, and studied the best ways to achieve policy goals, like complete employment, stability of prices, equity of economic and growth of productivity (Akram, 2013). There are different definitions of Islamic accounting according to the researchers' opinions, (Enver et al., 2007) defined Islamic accounting as "one of the social sciences that is mandated to extract the necessary unknowns of numerical information, in accordance with the concepts, terminology and rules derived from Islamic law, which constitute an accounting system to handle the financial operations in firm". But (Timur, 2004) defined it as "the discussion of financial transactions which involves by the rules of the Islamic Sharia". And other researchers *i.e.*, (Marifa, 2014) explained it as "the accounting processes that goes beyond the Western economics practice for providing standard policy impositions to supply a positive analysis which can help to achieve positive transformations of individuals from followers for their desires to achievers". Ismail, et al., (2018) presented a modern interpretation of the Islamic accounting as "a revolutionary ideology to modify the unethical reality into a pure one". So, the Islamic accounting can be defined as "an accounting framework which proposes to provide customers with useful information empowering them to run their firms as indicated by Islamic law". The main source of Islamic accounting is Islamic law. Accordingly, the principles of Islamic accounting must conform to

the principles of Islamic law. So, the most important principles of Islamic accounting can be identified as follows (Yusuf, 2010):

- a) **Charging Interest:** The main principle in Islamic finance according to Islamic law is all the forms of interest (Riba) are prohibited.
- b) **Investing in Forbidden Activities:** The Islamic law doesn't allow investing in the forbidden activities such as trading in alcohol, pork and producing pornography.
- c) **The Speculation:** In Islamic finance the speculation can be referred to gambling. That means the participation in deals where the ownership of a good relies on the occurrence of a predetermined, uncertain event in the future are forbidden.
- d) **The Ambiguity in Business:** The Islamic finance researches these involve in high level of risk and may enhance the uncertainty and behavior of fraud as can be found in commercial banks derivatives.
- e) **Participation in Deals Lacking of Material Finality:** All deals should be directly connected to a real underlying economic deal.
- f) **Sharing of Risk:** Equal risk and return on distribution to participants so that no one benefits disproportionately from the transaction.

The Islamic accounting instruments for investment developed a broad range of Islamic law-compliant financial products. To make sure that they meet this requirement, they make the using of contracts suitable for Islamic rules and in addition to adapt conventional financial contracts so that they conform to the doctrine of the Islamic law. There are three main kinds of instruments in Islamic accounting for investment; instruments of profit and loss sharing, instruments of mark-up contracts, and financial certificates or bonds which can be known also as (Ismail et al., 2018).

### The Instruments of Profit and Loss Sharing

Islamic doctrine believes that the instruments of profit and loss sharing are closer than other instruments to Islamic law because of they are based on risk participation, they are not forbidden, and they are preferable to other kinds of instruments. The most used instruments are (Mudarabah) and (Musharakah). (Musharakah) instrument is used to aid the joint ownership of property. (Musharakah) can be defined as "a contract between two parties to share in the capital of the project, the profits will be divided according to the terms agreed in the contract and losses will be allocated according to the capital shares" (Ismail et al., 2008) (Mudarabah) instrument is used to be a contract between the owner of capital (the bank, or the customer) and the applicant (the entrepreneur or the bank in case of indirect financing). The owner of capital will fund the applicant who will commit to manage the fund in order to make profits. So the profits will distribute between parties according percentage basis (Yusuf, 2010).

The other set of Islamic instruments are used in practice for customer credit, and short and medium-term financing. The most used instruments are (Murabahah), and (Ijarah). These kinds of instruments are also known as trade-based or assets-based contracts.

(Murabahah) instrument or sale term is the most commonly used. So, in this case there are two parties (buyer an asset, and seller the asset) the seller will purchase the asset at a higher price which is agreed upon conclusion of the contract and is payable at the future. There are sub-types of (Murabaha) such as (Bay 'al-mu'ajjal), (Bay 'al-salam), (Bay 'al-istisna'), and (Tawarruq) (Ismail et al., 2008).

(Ijarah) instrument or leasing contract can be explained as a party (the bank) will purchase an asset and will lease it to another party (the customer). So ownership of the asset will remain with the bank, it will bear the risk associated with lending for the duration of the contract. There is particular type of (Ijarah). It is known as the (ijarah wa iqtina) contract (Yusuf, 2010).

Last of all, there is also (Qard hasan) or financing free of charge which is designed for people or organizations in financial difficulties, and is simply a shape of charity (Stoddart, 2011).

### **The Sustainable Development in Bank**

The Brundtland Commission defined sustainable development simply as “the ability to create growth sustainable – to assure that it achieves all the needs of the current generation without compromising the capacity of aftertime generations to achieve their own needs”. The definition is certainly the standard introduction of this term when judged by its common usage and frequency of the citation. The employment of this definition has guided many individuals to view sustainable development as having a large focus on involving equity (Thabit et al., 2015). So, the main principle of sustainable development related to all others is the integration of the concerns of environment, society, and economy into all sides of decision making.

According to the Islamic law bases (Sharia principles), philosophy of sustainable development from the Islamic point of view, can be explained as sustainable growth requires establishing a balance among three dimensions (environment, economy and society). It means the stable welfare of consumer, economic efficiency, and realization of environmental balance in the framework of evolutionary knowledge-based and socially interactive sample realizing the social equity where charity and zakat are two main mechanisms to decrease poverty (Rodney, 2012).

The combination of sustainability into the sector of banking has taken two main ways (Tarik, 2004: Rahim et al., 2020) The follow up of environmental responsibility and social responsibility in the activities of a bank by environmental initiatives (such as the programs of recycling or improving energy efficiency) and socially responsible initiatives (such as help for educational events, improved the resource practices of person and charitable giving), 2) The integrate framework of sustainability into the core businesses of a bank by the emerging the considerations of environment and society into the design of product, policy of mission and strategies. Examples contain the emerging of environmental criteria into the strategy of lending and investment, and the growing of fresh products that supply environmental actions with easier incoming to the capital.

The interdependency between the environmental record and the profitability of a bank and of its customers has affected on the strategy of business of both banks and their corporate customers. This has occurred in many ways, specifically (Raquibuz, 2008): a) To reduce their exposure to ecological liability and to get risk management better, bankers began to explore more closely at the ecological achievement of their customers. They expanded mechanisms to evaluate the ecological risk exposure of their customers, and to keep themselves save from possible losses, b) This increasing concern about customers' ecological achievement, manifested in the decisions of lending and investments, began acting as an extra factor of sustainability in private sector. Organizations were given one more reason to keep track of environmentally and socially sound solutions.

### **Test Hypothesis**

The research population of this research is the professionals from 10 private Islamic banks in Iraq and recognized by the Central Bank of Iraq (CBI). These banks are:

AL-Arabiya Islamic Bank, AL-Bilad Islamic Bank for Investment and Finance, Al-Janoob Islamic Bank, Cihan Bank for Islamic Investment and Finance, Elaf Islamic Bank, Iraq Noor Islamic Bank, Iraqi Islamic Bank for Investment and Development, Islamic Regional Cooperation Bank for Development and Investment, National Islamic Bank and Taawen Islamic Bank. The financial reports of the ten private Islamic banks in Iraq which prepared for the period (Raquibuz, 2008; Bađun, 2009; Mahmood et al., 2018; Hussein et al., 2018; Hamad et al., 2021;

Khalaf et al., 2020; Thivagar et al., 2020; Antony et al., 2020; Thivagar et al., 2019; Thivagar et al., 2020). For testing the hypotheses of this research, the researchers designed a questionnaire according to the scientific following steps:

- a) Preparing the main questionnaire based on previous studies to use it for the research
- b) Assessing the items of the questionnaire by (3) experts to ensure their validity
- c) Providing a pilot study for the questionnaire to review and adjust it.
- d) Distributing (400) questionnaires on the employees of ten Islamic banks of Iraq (the sample of the research).
- e) Testing and analyzing the collected questionnaires to ensure reliability and validity.
- f) Analyzing the results and discussing the findings.

The researchers designed a questionnaire with two main parts, the first part (X1) was about correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development, which contained (15) paragraphs, and the second part (X2) was about the impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness, which contains (15) paragraphs too. Only (379) questionnaires were able to analyse, because (7) questionnaires were with missing data, (14) questionnaires were unable to be collected. The researchers used (Kolmogorov-Smirnov test) to assess the normality of distributing the questionnaires.

### Stability of Research Questions

The Researchers used (Split-Half) and (Cronbach's Alpha) to test the stability of questionnaire measures to adjust the approximate results.

#### Split – Half

Table (1) illustrates the value of correlation coefficients and the correct correlation coefficients for some paragraphs. So, the results of this test were positive and very good.

<b>Part</b>	<b>Content</b>	<b>No. of Paragraphs</b>	<b>Correlation Coefficients</b>	<b>The Correction</b>
1 <sup>st</sup> (X <sub>1</sub> )	The correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development	15	0.977	0.985
2 <sup>nd</sup> (X <sub>2</sub> )	The impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness	15	963	0.975

<b>Part</b>	<b>Content</b>	<b>No. of Paragraphs</b>	<b>Cronbach's Alpha coefficients</b>
1 <sup>st</sup> (X <sub>1</sub> )	The correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development	15	0.957
2 <sup>nd</sup> (X <sub>2</sub> )	The impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness	15	0.961

### The Questionnaire Analyzing

Using frequency in Table (3) shows the opinions of the research sample of the first part (The correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development) as follows:

- The materiality of paragraphs (1, 4, 8, 9, 15) is approximately more than (85%) and the frequency of their (agree, and strongly agree) scale is very high, thus confirming the strong positive impact of Islamic accounting on sustainable development in banks.
- The materiality of paragraphs (2, 3, 5, 7, 12) is approximately more than (75%) and the frequency of their (agree, and strongly agree) scale is high, thus confirming the positive impact of Islamic accounting on sustainable development in banks.
- The materiality of paragraphs (6, 10, 13, 14) is approximately more than (65%) and the frequency of their (agree, and strongly agree) scale is medium, thus confirming the ordinary impact of Islamic accounting on sustainable development in banks.
- The materiality of paragraph (11) is approximately more than (71%) and the frequency of their (agree, and strongly agree) scale is low, thus confirming the weak impact of Islamic accounting on sustainable development in banks.

<b>The Materiality</b>	<b>Positive Opinions</b>	<b>Neutral</b>	<b>Negative Opinions</b>	<b>Arithmetic mean</b>	<b>Variance</b>	<b>Standard deviation</b>	<b>The Variables</b>
0.88	3.02	1.05	0.99	3.19	1	17	V <sub>1</sub>
0.91	2.91	3.02	0.87	3.77	1	21	V <sub>2</sub>
0.67	2.84	2.04	0.72	3.37	0	15	V <sub>3</sub>
0.81	3.24	1.12	0.97	3.28	2	21	V <sub>4</sub>
0.72	2.47	2.57	0.95	3.50	0	23	V <sub>5</sub>
0.76	1.08	2.87	2.54	3.66	1	24	V <sub>6</sub>
0.8	2.06	1.97	1.01	3.18	4	13	V <sub>7</sub>
0.77	3.74	0.75	1.14	3.38	3	21	V <sub>8</sub>
0.88	4.01	0.94	0.54	3.33	1	20	V <sub>9</sub>
0.94	1.05	2.53	2.14	3.41	2	14	V <sub>10</sub>
0.71	0.97	1.99	2.07	3.18	4	20	V <sub>11</sub>
0.62	2.54	0.99	1.22	3.08	3	24	V <sub>12</sub>
0.9	1.92	2.01	0.95	3.13	1	21	V <sub>13</sub>
0.59	1.87	2.43	1.84	3.55	0	22	V <sub>14</sub>
0.78	3.09	1.03	0.91	3.18	2	29	V <sub>15</sub>

Generally, the arithmetic average of all paragraphs in part one (The correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development) equals (3.34), the average of materiality equals (0.78) which is more than the standard value of materiality (60%), and the frequency of positive opinions is (305), which means (80%) of total of the answers indicated to strong agreement of the 1st hypothesis of the research.

Therefore, the researchers accepted the first hypothesis which states that there is statistically significant correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development (Badun, 2009; Mahmood et al., 2018; Hussein et al., 2018).

Table (4) shows the opinions of the research sample of the second part (the impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness) as follows:

- a) The materiality of paragraphs (1, 2, 3, 4, 5) which belongs to environment is approximately more than (90%) and the frequency of their (agree, and strongly agree) scale is very high, thus confirming the strong positive impact of Islamic accounting tool on sustainable development in banks according to environment.
- b) The materiality of paragraphs (6, 7, 8, 9, 10) which belongs to type of investment is approximately less than (65%) and the frequency of their (agree, and strongly agree) scale is medium, thus confirming the positive impact of Islamic accounting tool on sustainable development in banks according to type of investment.
- c) The materiality of paragraphs (11, 12, 13, 14, 15) is approximately more than (75%) and the frequency of their (agree, and strongly agree) scale is high, thus confirming the ordinary impact of Islamic accounting tool on sustainable development in banks according to Islamic accounting awareness.
- d) The reason of the different among paragraphs of parts (2) is the variety of the three variables (environment, type of investment, and Islamic accounting awareness) and the uneven effect of the Islamic accounting tools on these variables.

<b>The Materiality</b>	<b>Positive Opinions</b>	<b>Neutral</b>	<b>Negative Opinions</b>	<b>Arithmetic mean</b>	<b>Variance</b>	<b>Standard deviation</b>	<b>The Variables</b>
0.92	4.12	0.12	0.87	3.20	3	12	V <sub>1</sub>
0.89	3.11	0.95	0.91	3.16	2	23	V <sub>2</sub>
0.86	3.93	1.07	0.41	3.30	4	17	V <sub>3</sub>
0.94	2.94	1.07	1.09	3.20	0	20	V <sub>4</sub>
0.92	3.14	0.98	1.04	3.22	1	23	V <sub>5</sub>
0.67	1.07	2.11	3.07	3.58	2	11	V <sub>6</sub>
0.62	0.85	1.82	3.57	3.58	1	21	V <sub>7</sub>
0.54	1.52	0.78	3.99	3.60	0	20	V <sub>8</sub>
0.59	0.98	0.55	4.15	3.39	2	13	V <sub>9</sub>
0.61	1.02	1.08	3.77	3.46	1	17	V <sub>10</sub>
0.72	1.11	1.87	2.87	3.45	0	18	V <sub>11</sub>
0.76	1.77	1.49	2.42	3.39	4	12	V <sub>12</sub>
0.80	1.73	1.82	2.19	3.41	3	23	V <sub>13</sub>
0.74	2.07	1.09	3.02	3.56	2	24	V <sub>14</sub>
0.72	1.75	0.98	3.11	3.45	0	30	V <sub>15</sub>

Generally, the arithmetic average of all paragraphs in part two (The impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness) equals (3.40), the average of materiality equals (0.75) which is more than the standard value of materiality (60%), and the frequency of positive opinions is (284), which means (75%) of total of the answers indicated to a good level

of agreement of the 2nd hypothesis of the research. Therefore, the researchers accepted the second hypothesis which states that the impact of each Islamic accounting tool can be differed on sustainable development according to environment, type of investment, and Islamic accounting awareness.

## CONCLUSION

Based on the theoretical framework of the research, the researchers concluded the follows: 1) The Islamic accounting has multi instruments and tools which are useful for many financial fields and these instruments can be capable for applying in any financial system with minimum changes. Based on the empirical part of the research, 2) The Islamic accounting instruments for investment can be useful in banks because they are providing wide range of options for the investors, preserving the invested capital, and increasing the level of confidence in banks especially after the financial crisis, 3) The Islamic accounting instruments for investment can be a fair solution for both the bank and the investor by assuring their rights equally, and distributing the risks of bank credit and the risks of investment risk on both parties (bank and investor), 4) On the other hand, according to the empirical part of the research. There are a strong correlation between applying the tools of Islamic accounting in banks and increasing the level of sustainable development. Islamic accounting tool can affect strongly on sustainable development according to environment, because the environment in Iraq is ready to use these tools and most of population of Iraq are Muslims. The Islamic accounting tool can affect weakly on sustainable development according to type of investment, because the culture of investment in Iraq is weak due to wars, political situations, and security instability. Islamic accounting tool can affect somewhat strongly on sustainable development according to Islamic accounting awareness, because of the delay of applying these tools locally, and the lack of attention by the government.

## REFERENCES

- Rahman, A., & Rahim, A. (2010). *An introduction to Islamic accounting: Theory and Practice*, Kuala Lumpur, Malaysia, Cert Publications.
- Mehmet, A. (2007). Conceptualization of the second best solution in overcoming the social failure of Islamic banking and finance: Examining the overpowering of the homoislamicus by homoeconomicus. *IJUM Journal of Economics and Management*, 15(2), 167-195.
- Ata, B., & Ali, H. (2017). *Introduction to accounting in Islamic thought*. Amman, Jordan: Dar Shahrazad for Publishing and Distribution.
- Lungu, C., Iuliana, C., Cornelia, D., Violeta, C.M., & Maria, D. (2012). Social and environmental performance indicators: Dimensions of integrated reporting and benefits for responsible management and sustainability, *African Journal of Business Management*, 6(14), 4990-4997.
- Mahmood, T. (2005). *The political thought of Ayatollah Murtaza Mutahhari: An Iranian Theoretician of the Islamic State (1st Edition)*. Routledge Ge/Bips, Persian Studies.
- Zubair, H. (2007). Fifty years of Malaysian economic development: Policies and achievements. *Review of Islamic Economics*, 11(2), 101-118.
- Munawar, I., & Philip, M. (2005). *Thirty years of Islamic banking: History, performance and prospects*. New York: Palgrave Macmillan.
- Harris, I. (2015). *Heaven's Bankers*. Overlook Press.
- Julia, T., Kassim, S., & Ali, E. (2018). *Are the Green Projects in Line with the Maqasid Shariah? An Assessment of Green Firms in Bangladesh*, e-Proceedings of the Global Conference on Islamic Economics and Finance, 317-335.
- Khan, M.N., & Bhatti, M.I. (2008). *Developments in Islamic banking: The Case of Pakistan*, Basingstoke and New York: Palgrave Macmillan.
- Muhammad Akram, K. (2013). *What is wrong with Islamic Economics?: Analysing the Present State and Future Agenda*. Cheltenham, UK: Edward Elgar Publishing.
- Enver, K.A., & Nihal, U.B. (2007). The importance of sustainable development in the field of education, Available online at: <https://www.researchgate.net>.
- Timur, K. (1986). The economic system in contemporary Islamic thought: Interpretation and Assessment, *International Journal of Middle East Studies*, 18(2), 135-164.



- Timur, K. (2004). *Islam and Mammon: The economic predicaments of Islamism*. Princeton, NJ; Princeton University Press.
- Marifa (2014). *Islamic banking and finance: principles and practices*, Marifa Academy.
- Ismail, M., & Yusof, I. (2008). A review of Fiqh al-Mua'malat subjects in economics and related programs at international Islamic University Malaysia and University of Brunei Darussalam. *Proceedings of the 7th International Conference in Islamic Economics*, 327-345.
- Yusuf, S. (2010). Methods and methodologies in Fiqh and Islamic economics. *Review of Islamic Economics*, 14(1), 103–123.
- Stoddart, H. (2011). *A pocket guide to sustainable development governance*. Stakeholder Forum.
- Thabit, H., & Mazen, M. (2015). *The relationship between commercial banks and microfinance institutions for sustainable development - Case of Iraq*, 14th Scientific Conference, Al-Mansour University College, Baghdad, Iraq.
- Rodney, W. (2012). *Legal, regulatory and governance issues in Islamic Finance*. Edinburgh University Press.
- Tarik, M. (2004). The Murabaha syndrome in Islamic Finance: Laws, institutions, and politics. In Henry, Clement M. & Wilson, Rodney (Eds.), *The Politics of Islamic Finance*, Edinburgh, Edinburgh University Press.
- Raquiubuz, Z. (2008). Usury (Riba) and the place of bank interest in Islamic banking and finance. *International Journal of Banking and Finance*, 6(1), 1-15.
- Bađun, M. (2009). Financial intermediation by banks and economic growth. *A Review of Empirical Evidence Financial Theory and Practice*, 33(2), 121-152.
- Mohammed, S., Ibrahim, H., & Salih, H. (2018). The impact of IFRS adoption on the relationship between corporate governance and agency costs, *Opción*, 34(86), 2279-2297.
- Ali Ibrahim, H., Mohammed, S., & Neema, H. (2018). The relationship between the accounting conservatism and the financial performance efficiency of the banks according the data envelopment analysis: Evidence from Iraq, *Opción*, 34(85), 2661- 2686.
- Hamad, A.A., Al-Obeidi, A.S., Al-Taiy, E.H., Khalaf, O.I., & Le, D. (2021). Synchronization phenomena investigation of a new nonlinear dynamical system 4d by gardano's and lyapunov's methods. *Computers, Materials & Continua*, 66(3), 3311-3327.
- Khalaf, O.I., Ajesh, F., Hamad, A.A., Nguyen, G N., & Le, D.N. (2020). Efficient dual-cooperative bait detection scheme for collaborative attackers on mobile ad-hoc networks. *IEEE Access*, 8, 227962-227969.
- Thivagar, L.M., Hamad, A.A., & Ahmed, S.G. (2020). Conforming dynamics in the metric spaces. *Journal of Information Science and Engineering*, 36(2), 279-291.
- Maria Antony, L.T., & Abdullah Hamad, A. (2020). A theoretical implementation for a proposed hyper-complex chaotic system. *Journal of Intelligent & Fuzzy Systems*, 38(3), 2585-2590.
- Thivagar, M.L., & Hamad, A.A. (2019). Topological geometry analysis for complex dynamic systems based on adaptive control method. *Periodicals of Engineering and Natural Sciences (PEN)*, 7(3), 1345-1353.
- Thivagar, M.L., Ahmed, M.A., Ramesh, V., & Hamad, A.A. (2020). Impact of non-linear electronic circuits and switch of chaotic dynamics. *Periodicals of Engineering and Natural Sciences (PEN)*, 7(4), 2070-2091.
- Jha, S., Seo, C., Yang, E. (2021). Real time object detection and tracking system for video surveillance system. *Multimedia Tools and Applications*, 80, 3981–3996 (2021). <https://doi.org/10.1007/s11042-020-09749-x>
- Jha, S., Prashar, D., Long, H.V., & Taniar, D. (2020). Recurrent neural network for detecting malware. *Comput. Secur.* 2020, 99, 102037.
- Joshi, G., & Jha, S. (2020). A novel clustering scheme for heterogeneous cognitive radio wireless sensor networks. *Solidarity Engineering*, 16(3). <https://doi.org/10.16925/2357-6014.2020.03.04>
- Jha, S., Yang, E., Almagrabi, A.O., Bashir, A.K., & Joshi, G.P. (2020). "Comparative analysis of time series model and machine testing systems for crime forecasting". *Neural Computing and Applications*
- Jha, S., Nkenyereye, L., Joshi, G.P., & Yang, E. (2020). Mitigating and monitoring smart city using internet of things. *Computers, Materials & Continua*, 65(2), 1059-1079.
- Sudan, J., Deepak, P., & Ahmed, A. (2020). 'A novel approach using Modified Filtering Algorithm (MFA) for effective completion of cloud tasks', 8409 – 8417.