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Factors Affecting e-logistics in Malaysia: The Mediating Role of Trust

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Abstract--- *Purpose:* The purpose of this study is to analyse the factors that influence blockchain users to utilise blockchain in e-Logistic. Also, this study identifies the relationship between supply chain capabilities, E-traceability and E-payment integration with blockchain and cryptocurrency. The conceptual framework of this study developed incorporating trust as an installation for a better understanding of the use of blockchain in Malaysia logistic sector.

Theory: The unified theory of acceptance and use of technology (UTAUT2) by adding trust as an independent variable. This study aims to study the relationship between the main determinants of UTAUT2 and the factors to use of blockchain and e-logistic for enhancement of logistics industry. The conceptual framework of this study developed to merge trust as a synthesis in UTAUT2 for a better understanding of e-logistic.

Methodology: The cross-sectional approach used in this study. Four hundred seventy-eight self-administered questionnaires distributed through simple random sampling technology aimed at blockchain users in Malaysia from 25 to 44 years. Data analysis performed using PLS. The outcome of this research shows that the relationship between e-logistic, blockchain, cryptocurrency and trust have a positive and significant relationship.

Significant: This research will significantly contribute to blockchain businesses and merchants in Malaysia. Also, it provides them with useful information about the interaction between the critical determinants of the supply chain capabilities, blockchain and cryptocurrency implementation in the logistics sector in Malaysia.

Originality: This is one of the most recent studies that describe the blockchain and cryptocurrency in Malaysia logistics.

Keywords--- Blockchain, Cryptocurrency, Trust, E-logistic.

I. Introduction

The globe we live in today is deeply integrated and allows the network of technology. It's fast and everything immediately [1]; [2]; [3]; [4]. It is considered that the real world is restrictive when proving their lives do to their physical limits. Similarly, in the logistics world, business increasingly occurs in the virtual universe [5]. There is no way to avoid the wave of change: we are entering a digital world without globalised borders where the pyramid of knowledge inverted, large data, are familiar with many potentials uses of data analysis, E-payment and E-traceability [6]; [7]. Blockchain, as one of the first leading virtual currencies, is intriguing consumers and gaining popularity [8]. With the popularity and value of blockchain increasing worldwide, it is necessary to understand the behaviour of Blockchain users [9]. However, the Malaysian government is showing a different attitude towards virtual currency, leaving blockchain users at risk of using blockchain [10]; [11]; [12]. Instead of becoming a barrier to use, users are willing to take these risks [12]; [13]; [14]. In Malaysia, another financial innovation (specifically financial innovation) involves the use of encryption (blockchain, Altcoin, Ethereum and all derivatives) as an alternative to virtual transactions [15]; [16]; [17]; [18].

Today's consumers want a cashless economy through cryptocurrency [19]; [20]. They want a faster and trouble-free payment system for several reasons, such as the Fiat currency, dissatisfaction and the need to drop expensive brokers (such as banks) [21]; [22]; [23]; [24]. The acceptance and use of blockchain are increasing dramatically [33]; [39]; [59]. Some futures predict that cryptocurrency might replace gold instead of the US dollar; it becomes the global reserve currency. Ultimately, the price of blockchain increases 1000 times, reaching \$ 1 million per currency due to its relative shortage (2), as well as an increase in production and profit value [9]; [10]; [11]. This phenomenon

can represent a threat to the monetary and exchange rate policies of central banks, and with the introduction of competitive funds, the state monopoly can fulfil [16]; [17]; [18].

As blockchain and other cryptocurrency increase, this study critically examines this digital currency technology and shows the best possible way to use it in logistics industry [31]. The disadvantages of accepting blockchain is a volatile currency that cant is stable in the logistic chain [32]. Besides, the advantages of this blockchain are the currency we can collect in gold or any other digital money to other logistic company. In the first part, we talk about the traditional role of money and the introduction and challenges of alternative cryptocurrency in Malaysia. The second stage is a forensic examination of the creation, trade or use of blockchain in the logistics sector in Malaysia [68]; [70]; [73].

II. Research Background

In 2009, Satoshi Nakamoto invented the world's first virtual currency by Satoshi Nakamoto, an alias programmer and then disrupted the financial industry due to this new model [10]. Blockchain defined as an encrypted currency developed in an open-source program and a new protocol that participates in point-to-point networks as an irreversible private tool for logistics sector [11]. All blockchain transactions recorded with caution in the joint accounting data technology known as blockchain [12]. Each personal blockchain record registered as a block and added to the blockchain record for the e-logistic facility. The registry connected to all network centres for transparent and traceable logistic facility [13]; [14].

This phenomenon is emphasising the factors that affect personal behaviour to use blockchain in logistics industry [5]. Behaviour intention refers to the person's ability to take part in a given behaviour and leads to a specific outcome [22]; [23]; [24]; [36]. Similarly, it is also a function of attitudes towards a specific behaviour and a subjective basis, where the attitude is known as the feelings of the person about the performance of the expected behaviour [27]; [28]; [29]; [30]. In Malaysia, although the blockchain usage rate is relatively low today [31]; [34], a survey by [33]; [35] and found that the adoption of blockchain highly recommended for the better logistic facility through blockchain trust.

III. Problem in Logistic

The problem in logistic is a big issue for the national and international transaction of logistic payments. We demonstrate some critical issues that raise in

- I. The current logistic cannot do well traceability.
- II. No peer transaction facility in e-logistic
- III. Malaysia logistics does not allow the crypto payment option for international transaction.
- IV. Blockchain e-payment still need to open a foundation for the transaction.

IV. Cryptocurrency the Next-generation e-logistic in Malaysia

The blockchain currencies analysed and summarised by the exchange of money and mechanisms [38]; [32] to use in the logistics sector. The characteristics of the problems of money, a means, a measure, a standard, a store [37]; [38] and proper transaction policy to use of in e-logistic [86]. The traditional role of money means a value that serves as an accepted instrument in the market [86]. A legal currency for the payment of the debt, a standard value, an accounting unit of measurement and a means to use in logistic [39]. A legal instrument recognised by law that used to end public or private debt or to fulfil a financial obligation and e-logistics [40]; [41]; [42]. Each country has its own money that used as an exchange within the country, such as the US dollar and the Malaysian ringgit for national and international e-logistic [43]; [44]; [45]; [46]; [47]. Through this crypto payment, the international logistic will be more reliable and more prompt for international transaction [48]; [49]; [50].

The total monetary system is accepted and used as a basis for a fiduciary system or "fiduciary money" for the usual transaction in the daily logistic chain [63]; [68]. Nowadays, the legal currency means that the money backed by the total faith and credibility of the government, and the public has enough confidence and credit that the money can serve as a storage device of purchasing power [70]; [69]. In other words, the fiduciary system based on the government's mandate that paper money is a legal tender for the execution of financial transactions for national and international logistics [65]; [67]; [66]. With the recent launch of blockchain in 2009, many reports suggest that

digital currencies are "future money"[64]; [62]; [61]. Through the old definition of money, blockchain able to overcome the first obstacle: it approved by the central bank to have the status of "legitimate payment". Blockchain will not be able to play the role of future money or is acceptable as an alternative currency unless the authorities change their current monetary system [75]. In this case, money redefined for technological progress in national and international logistic [76]. Therefore, blockchains distinguished from the money that is centralised so that blockchain users can benefit from their actual economic value. Also, in open markets with regulation, the monitoring of the government or another institution enhance e-logistic and logistics industry in Malaysia[77].

Due to the insignificant characteristics of blockchain, some economists have explained blockchain and other digital currencies for logistic development [32]; [31]. They also defined as a speculative tool used to exchange the paper value to digital value through blockchain [51]. The management applying these descriptions to the legal definition of blockchain, and in most cases, blockchain is always treated as a product, financial or commercial instrument (with a tax to increase transaction costs) rarely as money or currency (except Japan and Australia). However, Blockchain depends on which approach regulators apply and the legal definition of jurisdictions. In most countries, blockchain considers legitimate as legal tender [52]. To accept Blockchain as an alternative currency, we would also need a large consumer market [53]. Based on data from a recent blockchain survey shows the increasing popularity of blockchain [54]. Although, the survey suggests that logistics companies are increasingly turning to digital currency in Malaysia. The most significant disadvantage of accepting blockchain in Malaysia is the lack of factors analysis in of cryptocurrency implication in Malaysian e-logistic [71].

Furthermore, China accepted the change in a new way in the logistics industry [72]. Today, the first country in the world has its development and digital operation [73]; [60]; [61]. The Malaysian logistics industry should learn from China and develop its cryptocurrency because the earlier study of Uno in Malaysia shows a growing awareness of alternative currencies [59]; [58]. However, we can carry out new blockchain, cryptocurrency in Malaysian logistics [57].

V. Underpinning Theory

Thus, this study intends to investigate the factors affecting Blockchain users' behavioural intention to use Blockchain, the cryptocurrency with Unified Theory of Acceptance and Use of Technology (UTAUT2) adding trust as independent variable [80]; [81]. The research aim of this research is to look at the relationship between crucial determinants of UTAUT2, trust and behavioural intention to use Blockchain [82]. The conceptual framework of this study developed by integrating trust as a construct into the UTAUT2 to better understand Blockchain usage in logistics sector of Malaysia [83].

VI. Theoretical Framework

In this section, we describe the theoretical framework of this study.

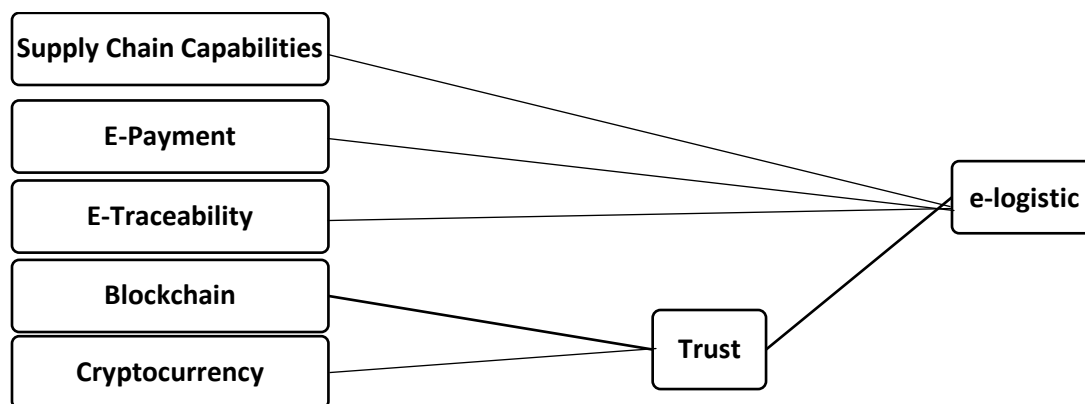


Figure 1: Theoretical Framework

VII. Hypothesis

H1. Supply chain capabilities have a positive impact on e-logistic in Malaysia logistics.

- H2.** E-Payment has a positive impact on e-logistic in Malaysia logistics.
- H3.** Collaboration has a positive impact on e-logistic in Malaysia logistics.
- H4.** E-traceability has a positive impact on e-logistic in Malaysia logistics.
- H5.** Blackchin has a positive impact on trust in Malaysia logistics.
- H6.** Blockchain has a positive impact on e-logistic in Malaysia logistics.
- H7.** Cryptocurrency has a positive impact on trust in Malaysia logistics.
- H8.** Cryptocurrency has a positive impact on e-logistic in Malaysia logistics.
- H9.** Trust has a positive impact on e-logistic in Malaysia logistics.

VIII. Methodology

To test the research model empirically a quantitative method applied, and primary data collected by the online questionnaire (appendix A). A detailed questionnaire used to collect official data (raw data) from the logistic industry in Malaysia, Blockchain enthusiasts, **cryptocurrency** and potential Blockchainusers worldwide using. The sample size was 274. The ADANCO structural modelling tool used to build, carry out and confirm the process model. Square partial regression (PLS) techniques used to analyse the underlying structures. ADANCO is suitable to show the measurement model (external model) and the structural model (internal model).

IX. Data Analysis

SPSS 22 used for data preparation and descriptive analysis, while structural equation modelling (SEM Smart PLS 2) used to do the necessary testing [48]. Throughout the questionnaire preparing stage, both face and content validity conducted. Secondly, the composite reliability examined (range from 0.939 for BI to 0.975 for BA). Thirdly, the average variance extracted (AVE) has calculated with AVE values ranged between 0.734 and 0.930. The condition of value higher than 0.5 fully met with discriminate Validity. To make sure that the measures are more related to their respective construct, the square root of AVE examined and confirmed the discriminate validity of the outer model [79]. Lastly, construct validity established in this study by confirming content validity, convergent validity, and discriminate validity.

X. Reliability

The results of the reliability analysis presented in Table 1. The value of Cronbach’s alpha (α) must equal to or greater than 0.7 for all scales (Nunnally, 1978). The results of the reliability test show that all values exceed 0.7. Therefore, it shows that all the elements are reliable to measure the opinion of the respondents.

Table 1: Reliability of Instruments

Scales	Items	Cronbach Alpha
Supply Chain Capabilities	6	0.876
E-Payment	4	0.894
E-Traceability	4	0.789
Blockchain	5	0.733
Cryptocurrency	6	0.821
Trust	6	0.761
e-logistic	4	0.877

XI. Discussion

Blockchain and cryptocurrency need more funding for greater access to finance for e-logistics. Additionally, fairer, more transparent and tractability in the logistics industry is the need for satisfaction of logistic consumer [3]. Blockchain offers attractive alternatives and, most importantly, blockchain does not depend on the monetary policy of the virtual central bank [4]. The blockchain offer in three ways. First, users can exchange traditional money (such as dollars, yen and euros) after an online exchange. The price of blockchain with other currencies determined by supply and demand. The conversion rate depends on the size of the transaction, from 0.5 percent of small transactions to 0.2 percent of significant transactions. Secondly, the user can receive blockchains for the sale of goods or services the seller receives blockchain from the logistics for the international transaction.

There is a significant difference between the coinage of coins and extraction of blockchain with the creation of foreign currencies [5]: centralised banking and economic systems, such as the US Federal. Corporate bodies or governments are managing the transfer of money for "coinage" or printing unit with fiat or paper money for the logistic sector. This ability to earn money with an unlimited supply makes money vulnerable to the logistic chain. This aspect offers a self-regulating digital currency to logistic Malaysia [7].

The growing popularity of blockchain and cryptocurrency often attributed to the potential benefits of users and the elimination of artificial barriers caused by current financial institutions. Inflation does not cut purchasing power [7]; [12]. Blockchain allows real payments on an equal base anywhere in the world. Compared to traditional logistic services, it offers minimum transaction fees and processing time. The blockchain mechanism provides direct electronic payments between two people without going through a third-party, such as a bank or other intermediaries, which reduces transaction costs of logistic. Due to the greater privacy of blockchain users, it depends on the principles of encryption (according to third-party communication) to authenticate transactions and regulate the production of the international logistics chain. Since blockchain sums, and encrypted identities for tracking all money transactions, money laundering, corruption, terrorist financing and other related crimes can trace in all blockchain transactions. Therefore, depending on one of the perspectives, the blockchain network attribute can be a virtue of new digital phenomena for logistic industry [15].

Some factors can prevent the use of blockchain, specifically, as mentioned above, no government supports blockchain as legal tender, so it does not work as money [12]. Blockchain also does not enjoy the externalities of the currency network. The price fluctuation of blockchain itself does not allow its use through the exchange, and the security insecurity of the blockchain network warns of its more extensive use [13]. Users exposed to several risks since almost all currencies, including blockchains, are not licensed (not as legal tender) for the creation, trading or use of virtual currencies. Newsletters often emphasise the general financial volatility surrounding blockchains [14]. The behaviour of volatile prices seems to suggest that speculative investors and logistics companies now control the blockchain market. The growing demand for blockchain is not due to the growing transactions of traders and traditional consumers in logistics industry [50]. The value of blockchains is not related to underlying funds such as gold or perceived strength and structural stability of the economy and management institutions in the international transaction of e-logistics [55].

The Central Bank of Malaysia (CBM) has before adopted the hard-line approach of cryptocurrency [15]. It explicitly stated that blockchain could not be considered a legal tender in Malaysia. It had not yet planned to control the operation of blockchain [63]. It also informed the public of the caution of such a digital currency [66]. However, note that the Malaysian regulator does not explicitly prohibit its use and does not say that blockchain or cryptocurrency is illegal in international or national logistic. A report shows that the Central Bank of Malaysia (CBM) in November 2017 made a notable move to regulate the blockchain exchange in Malaysia. The CBM has a softer approach to cryptocurrency and recognises that this is a new standard in any transaction in the logistic sector or companies. The governor of CBM announced at the Third Anti-Counterfeiting Finance Summit in Kuala Lumpur that all parties acting as a substitute exchange treated as for customers and sellers of such currencies. This step is to avoid that the system abuses criminal and illegal activities and to guarantee the constancy and veracity of the financial system and consumer protection.

XII. Limitation

If blockchains are lost or stolen, there are no intermediaries to reduce consumer losses. Therefore, there is no adequate security for client protection. Furthermore, there is no well-established consumer protection framework to protect users since most regulators seem to reluctant to check this segment [68]. This blockchain can lead to the loss of confidence in the system, which seeks itself. Moreover, the low liquidity of blockchain allows high-risk

investments in the logistics chain [70]. All these risks addressed, and there is no practical way to cover the volatility of blockchain and the risks of low liquidity in Malaysia logistic chain.

XIII. Conclusion

In conclusion, this study helps to gain a deep understanding of the intention to use blockchain in Malaysia logistic. This study found that the expected average return, motivated interest, price value and trust positively correlated to use currency in e-logistics. While the facilitation conditions were much and negatively associated with behaving of using blockchain [76]. Besides, the expected effort, social impact and habit have nothing to do with the behavioural intentions of using blockchain in e-logistics [56]; [57]. This study has many practical implications for professionals such as blockchain businesses and merchants who have accepted or have not accepted cryptocurrency [77]. In the future, research should consider other important variables, such as cultural and community differences, to continue studying the behavioural intention of using blockchain in e-logistic in Malaysia.

Appendix A

Table A1 Measurement Items.

Variables	Items	Adapted from
Cryptocurrency	How does specific cryptocurrency induce different mechanisms to affect in e-logistic?	(Risius & Spohrer, 2017)
	How do cryptocurrency and potential online transaction, investment, and spending behaviour?	
	Does cryptocurrency interoperate multiple digital currency?	
	Cryptocurrency particularly suited to be hosted in specific blockchain environments?	
	How can cryptocurrency be designed to increase interoperability?	
E-payment	How can the technical strengths of multiple public and private cryptocurrency platforms be combined for complex business transactions?	Dabholkar (1996) and Shamdasani et al. (2008)
	The level of E-payment I receive from logistic industry is high.	
	The E-payment I receive from logistic industry is excellent.	
	The logistics industry provides a high level of E-payment.	
Blockchain	E-payment is very much efficient in e-logistic supply chain	Puschel et al. (2010). Zhou et al. (2010).
	I believe the logistics supply chain need proper blockchain integration	
	Logistic supply chain performance needs proper blockchain knowledge	
	Blockchain enhances the productivity of logistics supply chain	
	Blockchain need user guideline	
e-logistic	Organisations stakeholder need proper adaptability on blockchain adoption	Venkatesh et al. (2012).
	I have the resources necessary to use e-logistic in the logistic supply chain.	
	I know necessary to e-logistic in the logistic supply chain.	
	e-logistic is compatible with other technologies I use.	
Supply Chain Capabilities	I can get help from others when I have difficulties using change e-logistic.	Ul-Hameeda et al. (2019).
	My organisation has achieved high customer satisfaction through the supply chain.	
	With organised information, my organisation has increased process transparency.	
	With organised information in the supply chain, it reduces errors in work processes in my organisation.	
	Good supply chain process reduces work redundancies.	
	Good supply chain process reduces administration cost.	
Trust	My organisation can attribute high return through effective supply chain process.	Gefen et al. (2003)
	I trust in e-Logistics in Malaysia.	
	I depend on e-Logistic.	
	I do not doubt the honesty of e-Logistic.	
	I feel assured that legal and technological structures adequately protect me from problems on e-Logistic.	
E-traceability	Even if not monitored, I would trust e-Logistic to do the job right.	(Brown et al., 2010; Maruping et al., 2017)
	e-Logistic can fulfil its task.	
	I believe blockchain-enabled E-traceability in e-logistic supply chain processes.	
	I believe supply chain stakeholders will provide me with in-depth access to how blockchain-enabled E-traceability supply chain.	
	I believe supply chain stakeholders will provide me with in-depth knowledge about applications of blockchain in E-traceable supply chain.	
	I believe I will have opportunities to provide feedback on blockchain-enabled E-traceable supply chain applications	

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References

- [1] Vicary Abdullah Daud, 'Fin-tech-the future is already here,' *Islamic Banker*. Available at: <https://www.islamicbanker.com/articles/fintech-the-future-is- already-here>. (Accessed on: 1 June 2017).
- [2] Rafe Hurst, 'The Value of Cryptocurrency,' *Medium*. Available at <https://medium.com>. (Accessed on: 4 July 2017).
- [3] Emily Frost, 'The Impact of Blockchain on Central Banks,' *International Banker*. Available at <https://international banker.com>. (Accessed on: 6 June 2017).
- [4] Kevin Helms, 'Europol starts Group to study cryptocurrency launderers,' *News Blockchains*. Available at: [News.blockchain.com](https://news.blockchain.com). (Accessed on: 12 Sept 2016).
- [5] Doug Henwood, 'Is Blockchain the Future of Monet,' *The Nation*. Available at <https://www.thenation.com>. (Accessed on: 1 Jan 2017).
- [6] Andries, P., Debackere, K., & Van Looy, B. (2013). Simultaneous experimentation as a learning strategy: Business model development under uncertainty. *Strategic Entrepreneurship Journal*, 7(4), 288-310.
- [7] RafeFurst, 'The Value of Cryptocurrency,' *Linkedin*. Available at: <http://www.linkedin.com>. (Accessed on: 5 July 2017).
- [8] Liza Visser, 'How Malaysians Use Blockchain,' *Luno*. Available at: <https://www.luno.com/blog/en/post/malaysians-use-blockchain>. (Accessed on: 5 July 2017).
- [9] Andy Greenberg, 'Cryptocurrency,' *Forbes*. Available at: [Forbes.com](https://www.forbes.com) (Accessed on: 4 July 2017).
- [10] TuurDemester, 'How Blockchain compares to Fiat Currency's House of Cards,' *Blockchain Magazine*. Available at: <https://blockchainmagazine.com/articles/blockchain-compares-fiat-currencys-house-cards-1422055261/>. (Accessed on: 4 July 2017).
- [11] Gareth Murphy, 'Decentralised currencies impact on Central Banks,' *Blockchains News*. Available at: <https://www.rte.ie/news/ business/2014/0703/628309-bitfin-conference>. (Accessed on: 4 July 2017).
- [12] Maureen Edward and Michael Edward, 'Blockchain: Questions, Answers, and Analysis of Legal Issues,' *Congressional Research Service*. Available at: [www. Crs.gov](https://www.crs.gov) (Accessed on: 10 August 2016).
- [13] Craig K. Elwell, M Maureen Murphy and Michael V. Seitzinger, 'Blockchain: Questions, Answers, and Analysis of Legal Issues.' Available at: <https://www.perkinscoie.com/images/content/1/4/v2/14218/R43339.pdf>. (Accessed on: 10 August 2016).
- [14] Lyudmila Brus, 'Total Control: Top 5 countries with Strictest Blockchain Regulation,' *Coinfox*. Available at: [/news/reviews/6163-total-control-top-5-countries-with- strictest-blockchain-regulation](https://www.coinfox.com/news/reviews/6163-total-control-top-5-countries-with- strictest-blockchain-regulation). (Accessed on; 27 April 2017).
- [15] Tom Ward, 'China becomes First Country in the World to test a National Cryptocurrency,' *Future Society*. Available at: <http://futurism.com>. (Accessed on: 5 August 2017).
- [16] Bank Negara Malaysia, Central Bank of Malaysia Noticesand Announcements: Statement on Blockchain (Kuala Lumpur: Bank Negara Malaysia, 2017).
- [17] John SouthurstCoindesk, 'Malaysian Central Bank has no plans to regulate Blockchain,' *CoinDesk*. Available at: <https://www.coindesk.com>. (Accessed on: 2 February 2017).
- [18] Risen Jayaseelen and Cecilia Kok, 'Bank Negara reins in Digital Currencies,' *Business News*. Available at: <https://www.thestar.com.my>. (Accessed on: 27 November 2017).
- [19] Melissa Goh, 'Malaysia to enforce cryptocurrency regulation in 2018,' *ChannelNewsAsia*. Available at: www.channelnewsasia.com. (Accessed on:12/ September 2017).
- [20] Sujha Sundararajan, 'Malaysia's Securities Watchdog Plans Cryptocurrency Regulators,' *Coin Desk*. Available at: <https://www.coindesk.com>. (Accessed on: 10 December 2017).
- [21] The Organization for Economic Co-operation and Development, 'The Future of Money,' *OECD*. Available at: <https://www.oecd.org/futures>. (Accessed on: 9 September 2017).
- [22] Albasu, J., &Nyameh, J. (2017). Relevance of stakeholders theory, organizational identity theory and social exchange theory to corporate social responsibility and employees performance in thecommercial banks in Nigeria. *International Journal of Business, Economics and Management*, 4(5),95-105.
- [23] Anyanwu, J. O., Okoroji, L. I., Ezewoko, O. F., &Nwaobilor, C. A. (2016). The impact of training and development on workers performance in Imo state. *Global Journal of Social Sciences Studies*, 2(2), 51-71.

- [24] Albasu, J., &Nyameh, J. (2017). Relevance of stakeholders theory, organizational identity theory and social exchange theory to corporate social responsibility and employees performance in thecommercial banks in Nigeria. *International Journal of Business, Economics and Management*, 4(5),95-105.
- [25] Anand, N., & Grover, N. (2015). Measuring retail supply chain performance: Theoretical model using key performance indicators (KPIs). *Benchmarking: An International Journal*, 22(1), 135-166.
- [26] Abdullah, S.Z., Miraz, M.H., Yibin, L., Abdullah, S. A., Salwa., T. (2019). Conceptual Framework of Integrative Logistics in Supply Chain Management for Maritime Port Logistics ChainConference Proceedings, North American Academic Research, 2(5), 139-146.
- [27] Akter, S., FossoWamba, S., & Dewan, S. (2017). Why PLS-SEM is suitable for complex modelling? An empirical illustration in big data analytics quality. *Production Planning and Control*, 28(11–12), 1011–1021.
- [28] Basheer, M. F., KhorramI, A. A. A., & Hassan, S. G. (2018). Patronage factors of Islamic banking system in Pakistan. *Academy of Accounting and Financial Studies Journal*, 22, 1-9.
- [29] Basheer, M. F., Hussain, T., Hussan, S. G., &Javed, M. (2015). Impact of customer awareness,competition and interest rate on growth of Islamic banking in Pakistan. *International Journal ofScientific & Technology Research*, 4(8), 33-40.
- [30] Benfang, Y., & Feng, X. (2014). Analysis on logistics service influencing factors of C2C E-commerce customer satisfaction. *Modern Business*, 33-34.
- [31] Blockchain Based Anti-Counterfeit Solution. *Blockverify*, [Online]. Available: [http:// blockverify.io/](http://blockverify.io/).
- [32] Blockchain: The solution for transparency in prodcut supply chains, 21 November 2015. [Online]. Available: <https://www.provenance.org/whitepaper>.
- [33] Cichosz, M., Goldsby, T. J., Knemeyer, A., & Taylor, D. F. (2017). Innovation in logistics outsourcing relationship–in the search of customer satisfaction. *LogForum*, 13(2).
- [34] Chowdhury, T. S., Habibullah, M., & Nahar, N. (2018). Risk and Return Analysis of Closed-End Mutual Fund in Bangladesh. *Journal of Accounting, Business and Finance Research*, 3(2), 83-92.
- [35] Crainic, T. G., & Laporte, G. (2016). Transportation in supply chain management: recent advances and research prospects. *International Journal of Production Research*, 54(2), 403-404.
- [36] Cichosz, M., Goldsby, T. J., Michael Knemeyer, A., & Taylor, D. F. (2017). Innovation in logistics outsourcing relationship--in the search of customer satisfaction. *LogForum*, 13(2).
- [37] Dabholkar, P. A. (1996). Consumer evaluations of new technology-based self-service options: An investigation of alternative models of service quality. *International Journal of Research in Marketing*, 13(1), 29–51.
- [38] Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90.
- [39] Miraz, M.H., M.G., & Sharif, K.I. (2019). Blockchain Technology Implementation in Malaysian Retail Market. *Journal of Advanced Research in Dynamical and Control Systems*. 11(5) 991-994.
- [40] Hair, J. F., Sarstedt, M., Hopkins, L., &Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26. <https://doi.org/10.1108/EBR-10-2013-0128>.
- [41] Hameed, W. U., Nadeem, S., Azeem, M., Aljumah, A. I., & Adeyemi, R. A. (2018a). Determinants of E-Logistic Customer Satisfaction: A Mediating Role of Information and Communication Technology (ICT). *International Journal of Supply Chain Management*, 7(1), 105-111.
- [42] Hameed, W. U., Azeem, M., Ali, M., Nadeem, S., & Amjad, T. (2017). The Role of Distribution Channels and Educational level towards Insurance Awareness among the General Public. *International Journal of Supply Chain Management*, 6(4), 308-318.
- [43] Hameed, W. U., Nadeem, S., Azeem, M., Aljumah, A. I., & Adeyemi, R. A. (2018). Determinants of E-Logistic Customer Satisfaction: A Mediating Role of Information and Communication Technology (ICT). *International Journal of Supply Chain Management*, 7(1), 105-111.
- [44] Hu, M., Huang, F., Hou, H., Chen, Y., &Bulysheva, L. (2016). Customized logistics service and online shoppers' satisfaction: an empirical study. *Internet Research*, 26(2), 484-497.
- [45] Hua, W., & Jing, Z. (2015). An Empirical Study on E-commerce Logistics Service Quality and Customer Satisfaction. *WHICEB Proceeding*, 269-275.
- [46] Hair Jr, J.F., & Lukas, B. (2014). Marketing research. *McGraw-Hill Education Australia*.
- [47] Imran, M., Aziz, A., Hamid, S., Shabbir, M., Salman, R., & Jian, Z. (2018a). The mediating role of total quality management between entrepreneurial orientation and SMEs export performance. *Management Science Letters*, 8(6), 519-532.

- [48] Imran, M., Hamid, S., & Aziz, A. (2018b). The influence of TQM on export performance of SMEs: Empirical evidence from manufacturing sector in Malaysia using PLS-SEM. *Management Science Letters*, 8(5), 483-496.
- [49] Imran, M., Hamid, S., Aziz, A., & Hameed, W. (2019). The contributing factors towards e-logistic customer satisfaction: a mediating role of information Technology. *Uncertain Supply Chain Management*, 7(1), 63-72.
- [50] Kausar, K., Garg, D., & Luthra, S. (2017). Key enablers to implement sustainable supply chain management practices: An Indian insight. *Uncertain Supply Chain Management*, 5(2), 89-104.
- [51] Kidane, T. T., & Sharma, R. R. K. (2016). Factors Affecting Consumers' purchasing Decision through ECommerce. *Proceedings of the 2016 International Conference on Industrial Engineering and Operations Management Kuala Lumpur, Malaysia*, March 8-10, 2016, 159-165.
- [52] Kimengsi, J. N., & Gwan, S. A. (2017). Reflections on Decentralization, Community Empowerment and Sustainable Development in Cameroon. *International Journal of Emerging Trends in Social Sciences*, 1(2), 53-60.
- [53] Kirejczyk, M., Kędracki, A., Rukhavets, I., & Trifa, V. (2017). *Ambrosus white paper*. [Online]. Available: <https://ambrosus.com/assets/Ambrosus-White-Paper-V8-1.pdf>
- [54] Kucukkocaoglu, G., & Bozkurt, M. A. (2018). Identifying the Effects of Mergers and Acquisitions on Turkish Banks Performances. *Asian Economic and Financial Review*, 6(3), 235-244.
- [55] Khan, S. A., Liang, Y., & Shahzad, S. (2015). An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in online stores in China. *Journal of Service Science and Management*, 8(03), 291.
- [56] Kidane, T. T., & Sharma, R. R. K. (2016). Factors Affecting Consumers' purchasing Decision through ECommerce. *Proceedings of the 2016 International Conference on Industrial Engineering and Operations Management Kuala Lumpur, Malaysia*, March 8-10, 2016, 159-165.
- [57] Lan, S., & Zhong, R. Y. (2018). Coordinated development between metropolitan economy and logistics for sustainability. *Resources, Conservation and Recycling*, 128, 345-354.
- [58] Le, H. L., Vu, K. T., Du, N. K., & Tran, M. D. (2018). Impact of Working Capital Management on Financial Performance: The case of Vietnam. *International Journal of Applied Economics, Finance and Accounting*, 3(1), 15-20.
- [59] Miraz, M.H., Kabir, A., Tuhin, M.K.W., & Majumder, M.I., (2019). Supply Chain & Online Product Promotion for Organizations: A Case Study in Bangladesh. *The Proceedings of the 2nd International Conference on Business and Management*, (pp. 334-340).
- [60] Maldonado-Guzman, G., Marin-Aguilar, J., & Garcia-Vidales, M. (2018). Innovation and Performance in Latin-American Small Family Firms. *Asian Economic and Financial Review*, 8(7), 1008-1020.
- [61] Miraz, M.H., & Habib, M. (2016). An Association Between Supply Chain Management and ICT Open Journal of Advances in Business & Management (OJABM) Vol. 1, No. 1, March 2016, pp. 01~10.
- [62] Miraz, M.H., Molla, M.S., Habib, M., & Majumder, I. (2016). Supply Chain Management and ICT On Automotive Industry InBangladeshn. *IETI Transactions on Business and Management Sciences*, 2016, Volume 1, Issue 2, 56-66, ISSN : 2517-9993).
- [63] Modum white paper data integrity for supply chain operations powered by Blockchain Technology, August 2017. [Online]. Available: <https://modum.io/wp-content/uploads/2017/08/modum-whitepaper-v.-1.0.pdf>.
- [64] Miraz, M.H., Saleheen, F., & Habib, M. (2017). Assessing SCM: A Procedure Based on A Theoretical Model, ICBM conference, 21-21 September, Dhaka, Bangladesh.
- [65] Maroofi, F., Ardalan, A. G., & Tabarzadi, J. (2017). The Effect of Sales Strategies in the Financial Performance of Insurance Companies. *International Journal of Asian Social Science*, 7(2), 150-160.
- [66] Miraz, M.H., Hassan, M.G., & Sharif, K.I., Udin, Z.M., Omar, M., Ibrahim, J.A., & Othman, A.A. (2019). The Numerous Tactical Plans Affect Customer and Postal Service Relationship: The Mediating Role of Blockchain, An Empirical Study in Bangladesh. *Journal of Dynamical and Control Systems*, 11(5) 985-990.
- [67] Mosbah, A., Serief, S. R., & Wahab, K. A. (2017). Performance of family business in Malaysia. *International Journal of Social Sciences Perspectives*, 1(1), 20-26.
- [68] Miraz, M.H., Kabir, A., Habib, M., & Ahmed, M.S. (2019). Securities on Blockchain in Order to Engage with Blockchain Technologies to Build a Comprehensive, Apparent and Liable Digital Economy World Wide. *The Proceedings of the 2nd International Conference on Business and Management*, (pp. 584-588).
- [69] McConaghy, T., & Holtzman, D. (2015). Towards an ownership layer for the internet. ascribe GmbH.

- [70] Miraz, M.H., Kabir, A., Habib, M., & Alam, M.M. (2019). Blockchain Technology in Transport Industries in Malaysia. *The Proceedings of the 2nd International Conference on Business and Management*, (pp. 340-344).
- [71] Mowlaei, M. (2017). The impact of AFT on export performance of selected Asian developing countries. *Asian Development Policy Review*, 5(4), 253-261.
- [72] Miraz, M.H., Molla, M.S., Habib, M., & Majumder, I. (2016). Supply Chain Management and ICT On Automotive Industry in Bangladesh. *IETI Transactions on Business and Management Sciences*, 2016, Volume 1, Issue 2, 56-66, ISSN : 2517-9993).
- [73] Miraz, M.H., Hassan, M.G., & Sharif, K.I. (2018). The relationship between personal and organizational in supply chain integration: Case study in Malaysia. *Journal of business management and economic research (JOBMER)*, Vol-2, Issue-3.
- [74] Nunnally, J. C. (1978). Psychometric theory (2nd ed.). *New York: McGraw-Hill*.
- [75] Wang, Y. B., & Lu, J. R. (2016). A supply-lock competitive market for investable products. *Asian Development Policy Review*, 4(4), 127-133.
- [76] Wang, G., Gunasekaran, A., Ngai, E. W., & Papadopoulos, T. (2016). Big data analytics in logistics and supply chain management: Certain investigations for research and applications. *International Journal of Production Economics*, 176, 98-110.
- [77] Welcome to the digital vault of the future, Everledger, April 2015. [Online]. Available: <https://www.everledger.io/>.
- [78] Maruping, L. M., Bala, H., Venkatesh, V., & Brown, S. A. (2017). Going beyond intention: Integrating behavioral expectation into the unified theory of acceptance and use of technology. *Journal of the Association for Information Science and Technology*, 68(June 2016), 623–637.
- [79] Brown, S. A., Dennis, A. R., & Venkatesh, V. (2010). Predicting collaboration technology use: Integrating technology adoption and collaboration research. *Journal of Management Information Systems*, 27(2), 9–53.
- [80] Venkatesh, V., & Zhang, X. (2010). Unified theory of acceptance and use of technology: U.S. vs. China. *Journal of Global Information Technology Management*, 13(1), 5-27.
- [81] Venkatesh, V., Davis, F., & Morris, M. (2007). Dead or alive? The development, trajectory and future of technology adoption research. *Journal of the association for information systems*, 8(4), 267-286.
- [82] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (September, 2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- [83] Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178.
- [84] Risius, M., & Spohrer, K., (2017). *A Blockchain Research Framework*, *Bus Inf SystEng*, (pp-1-25).<https://doi.org/10.1007/s12599-017-0506-0>.
- [85] Puschel, J., Mazzon, J. A., & Hernandez, J. M. C. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of BankMarketing*, 28(5), 389–409.
- [86] Waseem-Ul-Hameed, S. N., Azeem, M., Aljumah, A. I., & Adeyemi, R. A. (2018). Determinants of e-logistic customer satisfaction: A mediating role of information and communication technology (ICT). *International Journal of Supply Chain Management*, 7(1), 105.