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19 – 20 JUNE 2023

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Pusat Pengajian Perakaunan
Tunku Puteri Intan Safinaz
TUNKU PUTERI INTAN SAFINAZ SCHOOL OF ACCOUNTANCY
Universiti Utara Malaysia



AISRED
ACCOUNTING INFORMATION SYSTEMS RESEARCH AND DEVELOPMENT INSTITUTE
Institut Penyelidikan dan Pembangunan Sistem Maklumat Perakaunan
Universiti Utara Malaysia

Proceedings of
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Foreword

Assalamualaikum Warahmatullahi Wabarakatuh and Greetings.

Alhamdulillah, I am most grateful to Allah (the Most Gracious and Most Merciful), for it is because of His infinite blessings that we have the opportunity to come together on the occasion of the International Conference on Information Systems in Accounting and Business 2023 (ICISAB 2023). First and foremost, I would like to bid a warm welcome to all the distinguished guests, keynote speakers, delegates, and participants of ICISAB 2023.



It is my utmost pleasure to attend the ICISAB 2023 which is jointly organised by the Accounting Information Systems Research and Development Institute (AISRED) and the Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia (TISSA-UUM). This conference provides a plethora of prospects for both presenters and participants, encompassing a varied range of conference content, extensive networking opportunities, and valuable exposure.

The central theme of the conference is "Reshaping Business with Advancing Innovative Technologies". It underscores the significance of integrating cutting-edge technologies in order to revolutionize and redefine business operations. The contemporary business landscape has witnessed a significant expansion of the scope of accounting and the responsibilities of accountants surpassing their traditional boundaries. The role of accounting and the responsibilities of accountants today have transcended the traditional task of bookkeeping. They are strategic partners, financial analysts, risk managers, and advisors who contribute to the success and sustainability of organizations in an ever-evolving business landscape. Hence, by embracing digital transformation and automation, accountants are able to optimise their processes, increase efficiency, and improve accuracy by leveraging accounting software, data analytics tools, and artificial intelligence. This enables them to focus more on value-added activities such as financial analysis, forecasting, and providing strategic insights.

This year's conference presents a significant opportunity to serve as a crucial platform for preparing researchers, practitioners, and stakeholders to tackle future challenges. I strongly believe that it is imperative to embrace the future proactively. The motion emphasizes the importance of embracing innovative solutions, automation, and harnessing the power of emerging technologies to enhance efficiency, competitiveness, and growth. By exploring the possibilities presented by these advancements, the conference aims to provide participants with the requisite knowledge and strategies necessary to effectively navigate and prosper in the digital era.

Since organising a conference, let alone an international one, is a daunting task, I would like to express my heartfelt gratitude and appreciation to members of the organising committee for having successfully shown exemplary collaboration in organising this conference. I would also like to extend my utmost gratitude to the keynote speakers, panellists, presenters and sponsors for their willingness to share and contribute to the success of this event.

In closing, I would like to express my wish that ICISAB 2023 succeed in engendering a formidable fraternity of practitioners and academics committed to collaborating on the discovery of new knowledge in the relevant fields. I wish everyone a fruitful and fulfilling conference.

Thank you and Wassalam.

Professor Dr. Mohd Foad Sakdan
Vice-Chancellor
Universiti Utara Malaysia

Welcome Note

Assalamualaikum Warahmatullahi Wabarakatuh and Good Day.

I am privileged and highly honoured to host the International Conference on Information Systems in Accounting and Business 2023 (ICISAB 2023) in Penang, Malaysia. This conference is formerly known as International Conference on E-Commerce (ICoEC) which is a matter of rebranding to widen the coverage related to Accounting and Technology in specific. It is with great pleasure and a warm heart that I extend my sincere welcome to all the speakers, paper presenters, industrial practitioners, academicians, and participants who have gathered here today. Your presence here signifies a collective commitment to advancing knowledge and fostering growth in the field of accounting.



The Accounting Information Systems Research and Development Institute (AISRED) as a centre of excellence at the Universiti Utara Malaysia, organises ICISAB 2023 in collaboration with the Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia (TISSA-UUM).

AISRED and TISSA-UUM are committed to providing platforms for local and international researchers, experts and practitioners together thereby promoting the exchange of ideas, research outcomes, and findings. This demonstrated their commitment to fostering collaboration and knowledge-sharing in the field of accounting and technology.

As we gather here, let us embrace the diversity of perspectives and experiences represented in this conference. Let us engage in constructive dialogues and explore innovative approaches to address the challenges and opportunities facing the accounting profession in today's dynamic business environment.

Once again, I extend my warmest welcome to each and every one of you. Your presence here enriches this gathering, and I have no doubt that the knowledge shared, and connections made will have a lasting impact. I wish you all a stimulating and fruitful experience throughout this event.

Best wishes.

Professor Ram Al Jaffri Saad
Dean
Tunku Puteri Intan Safinaz School of Accountancy
Universiti Utara Malaysia

Welcome Message

The 6th International Conference on Information Systems in Accounting and Business 2023 (ICISAB 2023) is an extension of similar conferences, (known as The International Conference on E-Commerce (ICoEC) that was successfully organised online in 2020, in 2017 at Putrajaya, Malaysia and in 2015 at Kuching Sarawak, Malaysia.

The continuing expansion in the area of accounting information systems, business, education, management, and technology has led to a variety of issues that need to be explored and understood for the development and management of the organizations, public or private today.



In conjunction with that, the conference could serve as a platform for academics, practitioners, researchers and professionals to share their knowledge, issues, opportunities and challenges of these various and essential issues. All papers accepted in the conference will be published in The ICISAB 2023 Proceedings with e-ISSN. Last but not least, we wish to express our gratitude for the support of the collaborating institutions, sponsors, scientific committee, as well as organizing committee. We would also like to thank all the contributing authors for their valuable work in supporting our conference. Thank you for joining us in the conference and we look forward for another collaborations in the future.

Assoc. Prof. Dr. Raja Haslinda Raja Mohd. Ali
Chairman of ICISAB 2023

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Mapping of Methodological Research Gaps on Financial Technology Study: Bibliometric Analysis

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Abstract: *This study aims to map research gaps, in the field of Financial Technology (Fin Tech) and propose several trending topic opportunities for the future. Data collection uses the keyword "Financial Technology" which is applied to article titles, abstracts, and keywords from the Elsevier Scopus database from early 2014 to April 2023. We mapped out academic contributions and research gaps, focused on the most influential research streams and trends by conducting a bibliometric analysis with the help of the R software studio, then proposed several themes for future research. The findings show that there has been an increase in the number of paper proceedings and journal articles. Research on Fin-Tech is dominated by quantitative methods, as opposed to qualitative and hybrid methods, although the use of methods such as Artificial Intelligence, machine learning and the Common Moment Method is increasing in statistical methods. Quantitative research is dominated by China and Indonesia, the United Kingdom produces the most research on qualitative methods, while research with mixed methods is highly developed in the United Kingdom, the United States and South Africa. The results of this study identify the most influential articles on fin-tech, a different map from previous studies; visualize areas of focus and trends; and define an area for further research. These findings will help academics focus their research, based on under-investigated scientific areas in this heterogeneous niche.*

Keywords: Financial technology, Research gap, Gap methodology, Mapping, Bibliometric analysis

1. INTRODUCTION

In the twenty-first century, financial technology (fintech) has been further computerized through the mobile wallet, payment apps, tech for wealth and financial planning, and crowdfunding platforms for alternative financing opportunities (Huei et al., 2018). The field of fintech is currently experiencing an increase in research interest, making it a compelling area of study. A total of 938 research documents (Table 1) pertaining to fintech have been identified through a Scopus search spanning from 2014 to 2022. The quantity of research on financial technology has exhibited an upward trend over time (Fig. 1).

Table 1. Main Information

Description	Results	Description	Results
Main Information About Data		Authors	
Timespan	2014:2023	Authors	2405
Sources (Journals, Books, etc)	555	Authors of single-authored docs	156
Documents	938	Authors Collaboration	
Annual Growth Rate %	63.17	Single-authored docs	171
Document Average Age	2.29	Co-Authors per Doc	3
Average citations per doc	10.05	International co-authorships %	25.8
References	41776	Document Types	
Document Contents		article	602
Keywords Plus (ID)	2428	book chapter	92
Author's Keywords (DE)	2271	conference paper	244

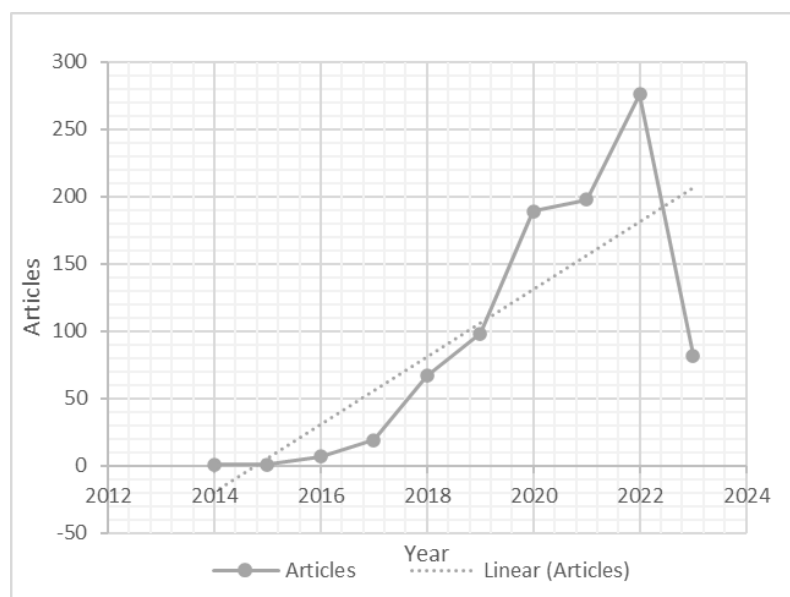


Fig. 1. Annual Articles Production

Cloud computing, big data, the internet of things, and social computing have been emphasized in finance. This advancement supports the existing company structure and enables the financial service industry adopt new processes, systems, products, and services to improve efficiency (Mercurius Broto Legowo, Steph Subanidja, 2022; Puschmann, 2017). Current trends in financial technology encompass the forecasting (Aliha et al., 2019), classification (Utami et al., 2021) and evaluation (Ahmad & Roslan, 2022) of diverse artificial intelligence technologies predicated on their accessibility and level of development (Martínez-Plumed et al., 2021). Moreover, it offers research on topics such as the contextualization of users' facilities and their experience with the web interface within the financial service sector (Hornuf et al., 2021; Rahmanto, 2022; Wang et al., 2021), machine learning tools in electronic finance market trading (Maknickienė et al., 2020; Putra et al., 2019; Salman, 2020), and advanced modelling for stock movements (Wan & Yang, 2019) and settlement models with renewable energy that are based on blockchain technology (Abdeldayem & Al Dulaimi, 2020; Das, 2019).

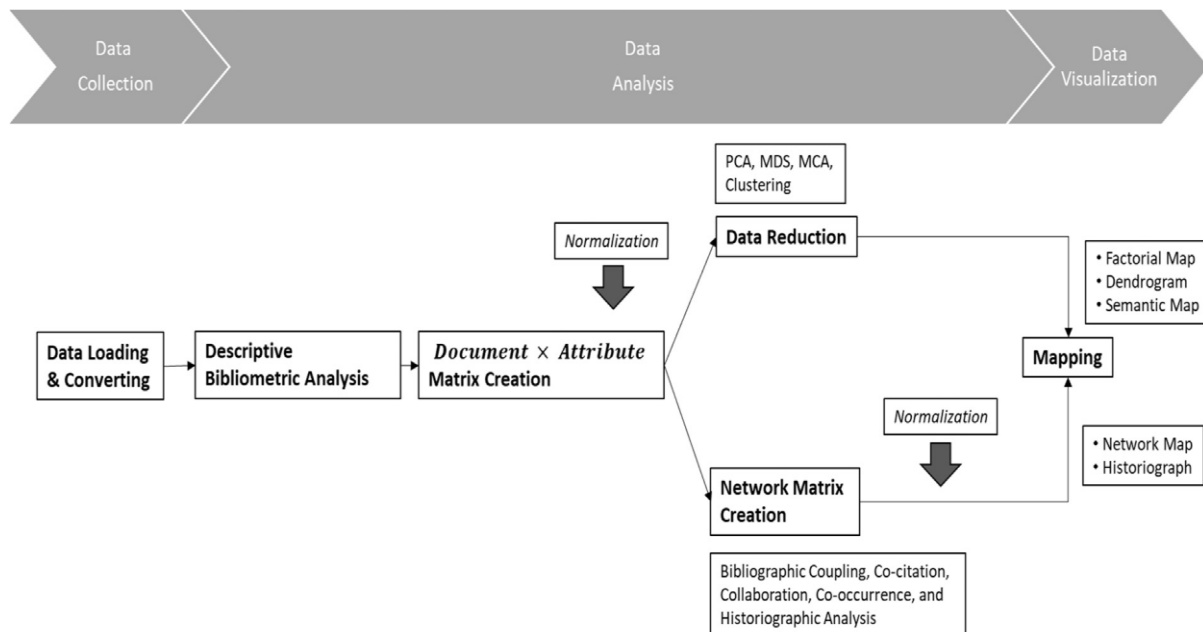
One of the foremost challenges in the field of research pertains to the formulation of a research agenda and the subsequent construction of research based on the identification of a

research gap(Miles, 2017). Miles (2017) introduced a novel framework that integrates two pre-existing models, comprising seven fundamental research gaps that have been renamed: Evidence gap, knowledge gap, Practical-Knowledge Conflict Gap, Methodological Gap, Empirical Gap, Theoretical Gap, Population Gap. However, this research only focuses on the Method and research design Gap or Methodological Gap.

Methodological gaps involve study outcomes conflicting with methodology. This gap addresses issues with existing study methodologies and offers a new area of investigation. If specific study topics have been mostly studied using one approach, it may be beneficial to change methods(Miles, 2017; Müller-Bloch & Kranz, 2015). Method and research design divide to qualitative, quantitative, and mixed methods research(Başkarada & Koronios, 2018). The methodology employed in research serves as a systematic approach to effectively address the research problem at hand(Afandi & Yaacob, 2021). The discipline can be conceptualized as a scientific inquiry into the methodology of conducting research (Patel & Patel, 2019).

2. METHODOLOGY

The general science mapping workflow was described by Börner, Chen, and Boyack (2003). Cobo, Lopez-Herrera, Herrera-Viedma, and Herrera (2011) compared science mapping software tools using a similar workflow. A standard work flow consists of five stages (Zupic & Cater, 2015): Study design, data collection, data analysis, data visualization and Interpretation.



Source: (Aria & Cuccurullo, 2017)

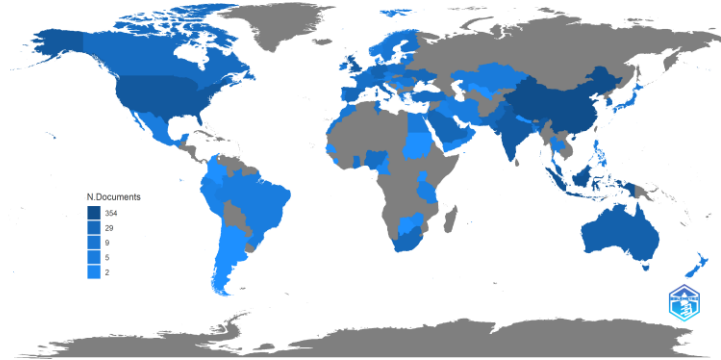
Fig.2. Research mapping workflow

2.1. Sample selection process

The data collection process comprises three sub-stages. Prioritize data retrieval. Scopus is a bibliographic database that conducts research on those mentioned databases. In the second sub-stage, it is imperative for scholars to undertake the task of loading and converting data for

Quantitative research is dominated by China and Indonesia, the United Kingdom produces the most research on qualitative methods, while research with mixed methods is highly developed in the United Kingdom, the United States and South Africa.

Country Scientific Production



No	Region	Freq
1	China	354
2	Indonesia	241
3	USA	126
4	UK	119
5	India	112
6	Malaysia	95
7	Australia	63
8	Bahrain	53
9	Germany	47
10	Jordan	42

Fig.4. Top 10 Fintech research countries

3.3 Thematic Map

The thematic map is provided in Fig. 5. The axis is formulated based on density and centrality. The thematic map has been divided into four quadrants, namely the emerging or declining themes, motor themes, basic themes, and niche themes. The horizontal and vertical axes provided in the figure as dotted lines divide the thematic map into four quadrants. The basic themes comprised with author keyword Fintech, financial inclusion, cryptocurrency, bit coin, intention to use, financial literacy, e-wallet, Africa, covid-19, artificial intelligence, machine learning, big data, financial development, Indonesia and Islamic fintech. Financial stability, financial innovation, mobile payment, startups, and emerging markets were found to be in between the two quadrants, namely basic and motor themes.

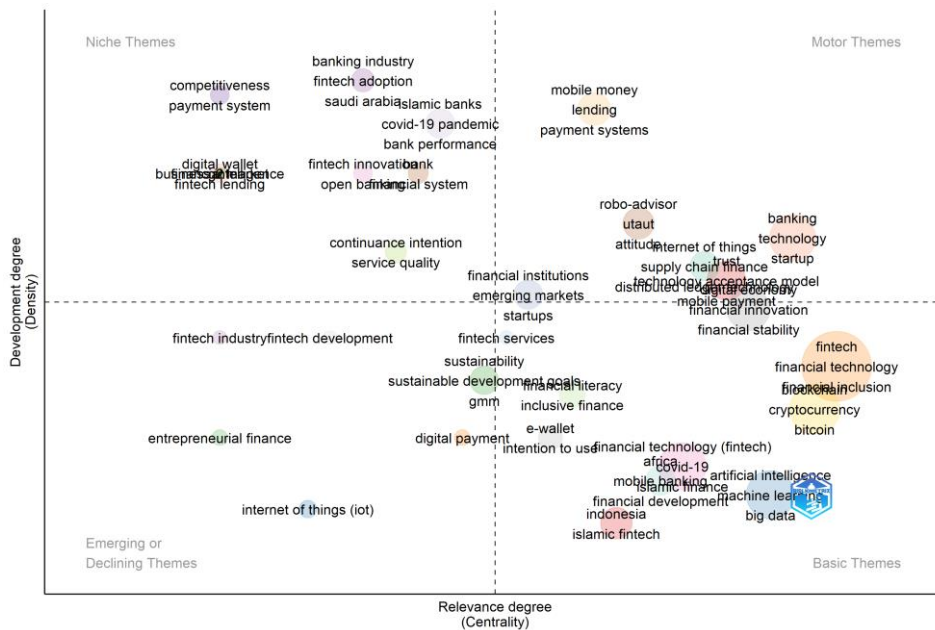


Fig.5. Country Scientific Production Mapping

The relevant clusters observed in the quadrant regarding niche themes were banking industry, fintech adoption, Saudi Arabia, competitiveness, payment system, digital wallet, fintech lending, open banking, financial system, continuance intention and service quality. Again, it was observed that the cluster sustainability, sustainable development, gmm and digital payment were located in between basic themes and emerging or declining themes. An interesting observation about the motor themes was that all clusters in this quadrant were sharing their space with other quadrant-based themes. The emerging or declining themes comprised fintech industry, fintech development, entrepreneurial finance digital payment and internet of things.

3.4 Thematic Evaluation

Fig.6. Represents the evolution of fintech research from 2014 to April 2023, utilizing author keywords, inclusion index weighted by word occurrences, and the walktrap clustering algorithm to analyze various fields. Thematic evolution guided the identification of conceptual sub-domains. Hence, the figures mentioned above played a crucial role in facilitating the cartographic representation of the relevant areas of study, including the associated subtopics or subdisciplines (Sengupta & Vaish, 2023). In 2023, the prevailing research subtopics were identified as fintech, artificial intelligence, digital transformation, e-wallet, fintech adoption, peer-to-peer lending, sustainability, fintech services, China, mobile banking, economic growth, and the Internet of Things (IoT).

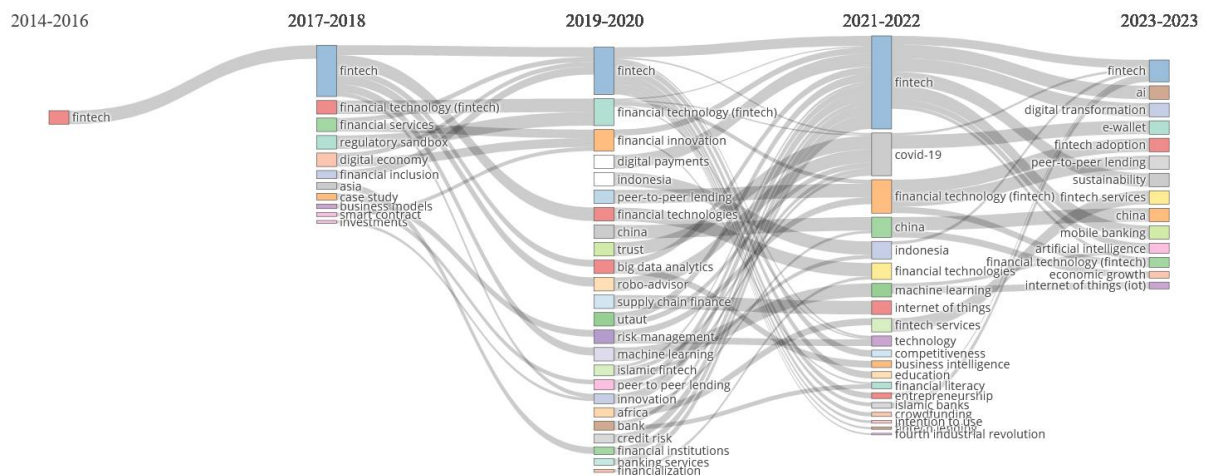


Fig.6. Thematic Evaluation

3.4 Factorial Mapping

The conceptual Structure function in the bibliometrix R-package does multiple correspondence analysis (MCA) to create a conceptual structure of the field and K-means clustering to locate document groupings that express common concepts. Exploratory multivariate categorical data analysis with MCA is graphical and numerical. MCA homogeneity analyses an indicator matrix to create a low-dimensional Euclidean representation of the original data. MCA is used in co-word analysis. [CS <- conceptual Structure(M, field="ID", min Degree=5, k.max=5, stemming=FALSE), label size=5]. Point placements are used to understand the results (Aria & Cuccurullo, 2017).

Fig.7. presented illustrates a two-dimensional graph that has been constructed using the topic words found within the Author Keywords of the papers that have been cited. A technique known as multiple correspondence analysis can be employed to condense large datasets containing multiple variables into a lower-dimensional space. This results in the creation of a two-dimensional map, with dimensions labelled as Dim 1 and Dim 2. The words located in close proximity to the central point of the group are those that have garnered significant attention in recent years, including financial regulation, security, bitcoin, privacy, and Islamic fintech. Conversely, those located near the edge of the map are topics that have received less research attention or have been subsumed into other topics, such as sustainability and peer-to-peer lending.

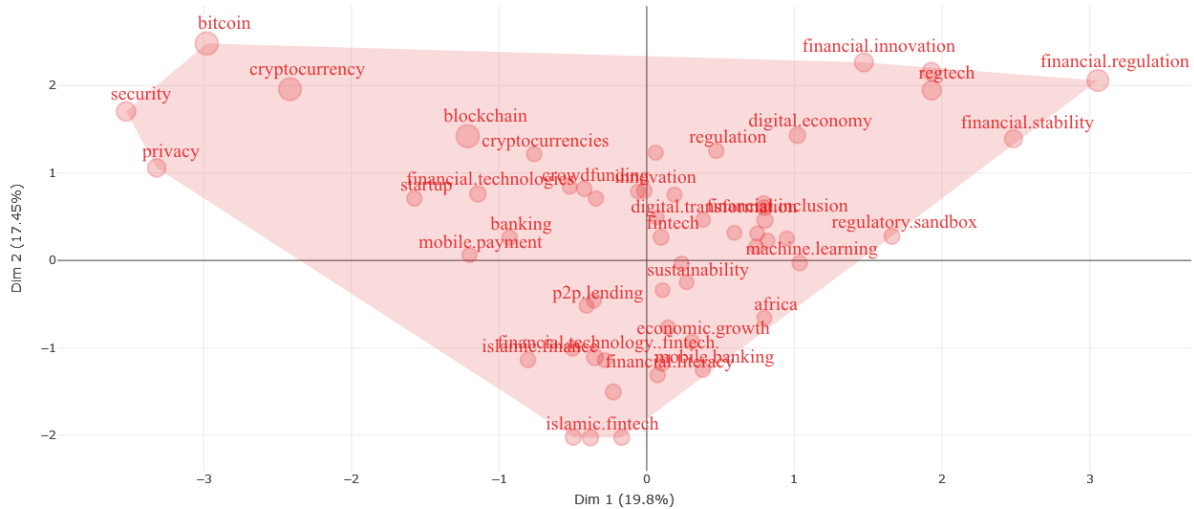


Fig.7. Bibliometric conceptual structure map-factorial analysis

3.5. Trend Topics

Fig.8. presents a range of intriguing research topics, encompassing themes such as trust, digital finance, blockchain, innovation, and financial services. The usage of the keywords "Internet of Things (IoT)" and "COVID-19" are projected to be prominent trend topics in 2023.

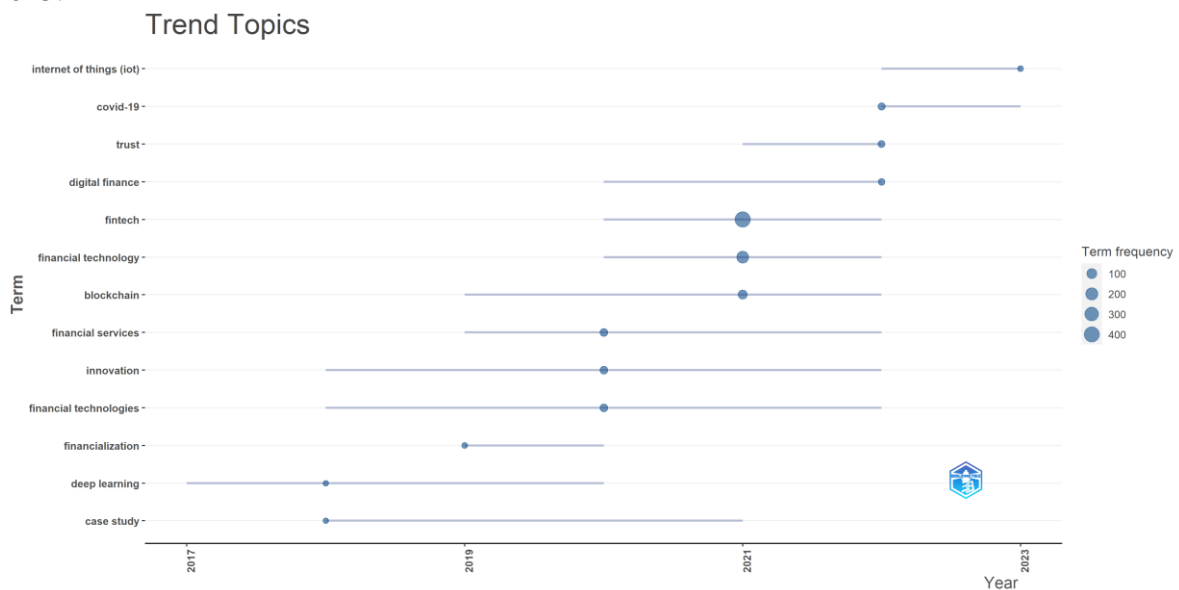


Fig.8. Trend Topics

This research defines the gap in methodology into three distinct types: qualitative, quantitative, and mixed methods.

Table. 2. Research Gap in Methodology

Source	Method		
		(Coffie et al., 2021)	Mix Method
(Zook & Blankenship, 2018)	Mix Method	(Yao et al., 2021)	Quantitative
(Anagnostopoulos, 2018)	Mix Method	(Demir et al., 2022)	Quantitative
(Martínez-Climent et al., 2018)	Mix Method	(Lagna & Ravishankar, 2022)	Qualitative
(Gimpel et al., 2018)	Qualitative	(Soni et al., 2022)	Quantitative
(Kshetri & Voas, 2018)	Qualitative	(H. Chen & Yoon, 2022)	Quantitative
(Gatteschi et al., 2018)	Quantitative	(Berman et al., 2022)	Mix Method
(Gozman et al., 2018)	Quantitative	(Brown & Piroška, 2022)	Qualitative
(Ryu, 2018)	Quantitative	(Chen et al., 2022)	Quantitative
(Stewart & Jürjens, 2018)	Quantitative	(A. A. Setiawan et al., 2022)	Quantitative
(Haddad & Hornuf, 2019)	Mix Method	(Hasan et al., 2022)	Quantitative
(Belanche et al., 2019)	Qualitative	(Senyo et al., 2022)	Qualitative
(Milian et al., 2019)	Quantitative	(Widhyastana & Rachmawati, 2022)	Quantitative
(Du et al., 2019)	Quantitative	(Herdinata & Pranatasari, 2022)	Mix Method
(Bernards & Campbell-Verduyn, 2019)	Quantitative	(Banna et al., 2022)	Quantitative
(Senyo & Osabutey, 2020)	Mix Method	(Al-Khowarizmi, A., Syah, R., Elveny, 2022)	Qualitative
(Zetzsche et al., 2020)	Qualitative	(Tyagi & Boyang, 2021)	Quantitative
(Chang et al., 2020)	Qualitative	(Hsu et al., 2023)	Quantitative
(Phan et al., 2020)	Qualitative	(Khuwaja et al., 2023)	Quantitative
(Ozili, 2021)	Qualitative	(Setiawan et al., 2023)	Quantitative
(Le et al., 2021)	Quantitative	(Arora et al., 2023)	Mix Method
(Abbasi et al., 2021)	Quantitative	(Coffie & Hongjiang, 2023)	Quantitative
(Lai & Samers, 2021)	Mix Method	(Lee & Pan, 2023)	Quantitative
(Croutzet & Dabbous, 2021)	Quantitative	(Yudaruddin, 2023)	Quantitative
(Hendershott et al., 2021)	Mix Method	(McCallum & Aziakpono, 2023)	Mix Method
(Abdeldayem, M., Aldulaimi, 2021)	Quantitative	(Nguyen et al., 2023)	Quantitative
(Kharisma, 2021)	Qualitative		
(Cai et al., 2021)	Quantitative		



Fig.9. Research Methodology Gap Mapping

The tabulated data (Table 2 and Fig.9. indicates that quantitative research methodology is consistently favoured over qualitative and mixed methods in terms of popularity across the years. In comparison to the quantitative method, the Mix method is more commonly utilized. The use of methods such as Artificial Intelligence, machine learning and the Common Moment Method is increasing in statistical methods.

4. FUTURE RESEARCH

In the context of the Gap methodology, there exist various recommendations that could be employed for forthcoming investigations, specifically.

1. Qualitative analysis through interviews or surveys can be useful in offering in-depth analysis and case studies. In collecting qualitative research data using a combination of participant observation strategies, structured interviews and semi-structured interviews. While qualitative research designs can be developed using several options including longitudinal case study designs, science experiment designs, thinking designs as research paradigms and comparative case studies.
2. Future research endeavours may utilize quantitative methodologies that use both descriptive and empirical evidence, obtained through various means such as survey questionnaires, cross-sectional surveys, longitudinal cross-country surveys, structured interviews, and longitudinal case studies. Additionally, it may be beneficial to employ a genuine secondary dataset that measures the development of FinTech, as soon as such data becomes available for more extended time frames. It is recommended to replicate certain empirical exercises across various regions and explanatory variables.
3. Moving beyond methodological to establish new spatiality to examine financial inclusion and poverty reduction while addressing (developing) intersectionality, including new forms of fraud, debt, and personal and business bankruptcy. Financial inclusion risks, politics and political economy of financial inclusion, effects on macro financial stability, optimal levels of financial inclusion, regional economic blocs, financial inclusion regulation, and other financial inclusion interventions. Given the importance of stakeholder network interaction in fintech-led financial inclusion, mixed methods research is essential to explore these actors.

5. CONCLUSIONS

Bibliometric analysis by Co- occurrence finds there are several keywords that are not yet connected and could be the development of further fintech research, for example between technology acceptance model and Islamic finance, financial inclusion with investment, digital transformation with smes. China is the country that conducts the most research on Fintech. on a Thematic Map the motor theme or driving topic for Fintech research are mobile money, lending, payment system, robo-advisor, UTAUT, attitude, banking, technology, startup, supply chain finance and technology acceptance model. The emerging markets, startups, mobile payments, financial innovation, financial stability, and digital economy are among the titles that are gaining increasing interest for development, positioned between the basic themes and the motor themes. Factorial mapping has gained considerable attention in various fields such as financial regulation, security, bitcoin, privacy, and Islamic fintech. Research on Fin-Tech is dominated by quantitative methods, as opposed to qualitative and hybrid methods, although the use of methods such as Artificial Intelligence, machine learning and the Common Moment Method is increasing in statistical methods.

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The Integration of the Levers of Control and the Balanced Scorecard

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Abstract: *This paper aims to investigate the implementation and association of two innovative management control practices namely the balanced scorecard (Kaplan and Norton, 1992) and the levers of control (Simons, 1995) in Malaysian SMEs. The concept of the balanced scorecard (BSC) is centred on key performance indicators that are categorized into the customer, financial, internal business process, and innovation and learning perspectives. The levers of control (LOC) advocate different types of control mechanisms under beliefs systems, boundary systems, diagnostic control systems, and interactive control systems intended to strike a balance between employee controls and empowerment. For the study, a total of 500 questionnaires were distributed to SMEs owners and managers, resulting in 138 responses (27.6% response rate). The data shows that the presence of both practices in SMEs are considered as moderate. The Pearson correlation analysis shows that LOC and BSC have a positive and significant relationship with $r = 0.646$ at $p < 0.01$, that proves the interrelatedness of the practices. Overall, the study demonstrates the applicability and potential of different management control mechanisms in SMEs.*

Keywords: Balanced Scorecard, Levers of Control, Management Control System, Performance Measurement System

1. INTRODUCTION

The complexities of managing an organization in today's world requires managers to manage companies' performance using different forms of management control system (MCS). For instance, the levers of control (LOC) framework introduced by Simons (1995) is a tool used in the implementation of strategies through four types of controls, coined as levers which are beliefs systems, boundary systems, diagnostic control system, and interactive control system. The levers correspond to the four critical issues to be addressed to successfully implement the organizational strategies, namely core values, risks to be avoided, critical performance variables, and strategic uncertainties.

Another valuable MCS tool is the balanced scorecard (BSC) framework that was developed by Kaplan and Norton (1992). The BSC outlines four critical areas, stated as perspectives, for companies to achieve business success which are financial, customers, internal business process and learning and growth. The BSC enables the companies to translate vision and strategies into operational activities under each perspective, through the use of financial and non-financial performance measures.

With regard to small and medium enterprises (SME), previous studies documented the challenges in the implementation of the MCS in their businesses (Collier, 2005; Ferreira,

2002). They normally have less formal planning, directed by single or small number of managers as they need to be more flexible to create new opportunities and innovations and responsive to customers' demands (Aloulou & Alain, 2005; Ates, Garengo, Cocca, & Bititci, 2013; Levy & Powell, 1998). Besides, according to Teittinen, Pellinen, & Järvenpää (2013), MCS are costly and time-consuming to install and operated, require experts and designated personnels to administer the system.

Our research is conducted to examine the likelihood of the SMEs in implementing the BSC and LOC and subsequently investigate the possibility of integrating the tools in the companies. To achieve the research objective, we use a survey research approach involving Malaysian SMEs. SMEs are businesses that have a certain level of assets, turnovers and/or the number of employees; categorized into three which are micro, small, and medium firms. In Malaysia, SMEs are identified based on their annual sales turnover or the number of full-time employees (SME Corp, 2020). For manufacturing and the manufacturing-related services sector, a company is considered as an SME if it has a sales turnover of less than RM50 million or has full-time employees of less than 200 workers. For the services and the other sectors, SMEs are those businesses with sales turnover of less than RM20 million or have less than 75 workers. SMEs help the nation by providing source such as entrepreneurship skills, innovation, and employment that later will encourage for price competition, product design and efficiency. Such contributions have made SMEs as a big driving force behind the development of a national economy.

2. THE BALANCED SCORECARD AND LEVERS OF CONTROL

The BSC was developed by Kaplan and Norton in the early 1990s as they realised that traditional accounting measures such as return on investment and operating income could mislead executives when they gave signals for continuous improvement and innovation (Kaplan & Norton, 1992). The BSC is considered a strategic planning and performance management framework to align business activities to organisations' visions and strategies, communicate strategies and performance internally and externally and monitor organisational performance against strategic goals. The framework consists of performance measures categorized under finance, customers, internal business process and learning and growth perspectives. The performance measures are balanced between leading and lagging indicators, between short- and long-term strategies and objectives, between financial and non-financial measures and between internal and external performance perspectives.

The LOC focuses on organizations set of objectives and employees' behaviour that aligned to the organizational strategy. According to Ferreira and Otley (2009) it has been pointed out that LOC mainly concerns with strategic issues and its implications on the control system. Its main focus is on control features, as it provides a wide range of control practices that simultaneously manage, restrict and empower employees (Abernethy & Lillis, 2001; Bisbe & Otley, 2004; Ferreira, 2002; Ferreira & Otley, 2009; Henri 2006; Simons, 1995). The interactive controls and belief systems are designed to guide development, innovation, and growth. Diagnostic control and boundary system, on the other hand, are constraining in nature.

Integrating the BSC with the LOC could further offer a comprehensive control coverage as both serve different and sometime overlapping functions in achieving business strategies. As LOC emphasize on strategic focus, the scorecard put strategy and vision at the centre of priorities over control (Kaplan & Norton, 1992). The BSC dictates the goals to be achieved

and LOC outline the controls, guidance and restrictions to the employees on how to act in specific ways in their daily work to achieve the goals. In addition, the boundary control emphasized on risk management that involves the process of identifying, quantifying, and mitigating any risk that affects or present in a company's business strategy and strategy execution. Therefore, the nature of the LOC is not only in tandem with the BSC concept but also can enhance organizational effectiveness.

3. RESEARCH METHOD

This study adopts quantitative data analysis and uses primary data obtained through a survey. The respondents are the upper-level management or have the authorities to make decision for the companies. Following Roscoe (1975) and Sekaran (2016), we randomly selected 500 SMEs all over Malaysia from the directory of Federation of Malaysian Manufacturers (FMM). As for the development of survey instruments, the questions related to LOC were adapted from Heinicke et al. (2016) and questions on the BSC were adapted from Hoque et al. (2001). The respondents were asked to provide their responses using 5-point Likert scales. From the survey, we have obtained 138 responses, indicating a response rate of 27.6% percent. We used SPSS for windows version 28.0 to perform correlation analysis and reliability test using Pearson analysis and Cronbach’s alpha respectively. To identify the relationship between LOC and BSC, we relied predominantly on the Pearson correlation analysis.

Table 1 indicates that the levers of LOC in total has a slightly higher mean than the whole BSC’s perspectives. The highest implementation of components between the two practices is the diagnostic system, followed by the BSC’s internal business process and financial perspectives. The lowest mean is the BSC’s customer perspective followed by learning and growth perspective. Overall, we argue that the implementation of the LOC and BSC in the SMEs is considered as moderate.

Table 1. Descriptive statistics

	N	Mean	Std. Deviation
Customers’ Perspectives	138	3.6449	0.70907
Internal Business Process	137	3.9878	0.72919
Learning & Growth	138	3.7855	0.71138
Financial Perspectives	138	3.9546	0.67819
Belief System	138	3.9475	0.57109
Boundary System	138	3.8646	0.61460
Diagnostic System	138	4.1848	0.67563
Interactive System	138	3.8603	0.72464
Total BSC perspectives	138	3.8432	N/A
Total LOC	138	3.9643	N/A

3.1. Reliability and Normality Tests

For the reliability test, the Cronbach’s alpha value for all constructs items was more than 0.7 indicates that all constructs possessed acceptable reliability. Based on the alpha results for all constructed items, the reliability scores are consistently high in all dimensions. Table 2 show the result of the reliability test.

Table 2. Reliability Test Result

Variables	Cronbach's alpha	Number of original items	Number of deleted items
LOC	0.919	17	0
BSC	0.935	20	0

For the normality test, Table 3 reports an acceptable value of skewness and kurtosis, hence the data is considered as having a normal distribution.

Table 3. Normality Test Result

	N	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	138	0.516	-0.032	0.206	0.258	0.410
Valid N (listwise)	138					

3.2. Pearson Correlation Test

We used Pearson correlation analysis to determine whether there is a relationship between LOC and BSC. From the Table 4 below, we can conclude that, there is a positive and significant relationship between both variables. The results show positive magnitude and strong relationship between both variables. Table 3 shows that $r(138) = 0.646$, with $P < 0.01$.

The results suggest that both the LOC and the BSC have the potential to be integrated into a single framework. The study found that every lever of LOC has significant relationship with all BSC perspectives. Specifically, Table 5 shows that learning and growth perspective has the highest correlation with diagnostic control system (LOC). Thus, this finding demonstrates that the BSC can be part of diagnostic control, consistent with the expectation of Kaplan and Norton (1996). Specifically, we propose that the BSC is suitable to be used diagnostically in SMEs to cope with uncontrolled innovation, creativity and organizational learning by setting boundaries and restricting risk-taking actions (Henri, 2006). As the learning and growth perspective also focuses on employees' continuous improvement, monitoring results and correct deviations from expected performance standards are required (Chenhall, 2007), as outlined in diagnostic control. Overall, our result suggests the complementarity of the LOC and BSC where the highest association is between learning and growth perspective with diagnostic system.

Table 4. Pearson's correlation test between LOC and BSC

		BSC	LOC
BSC	Pearson Correlation	1	.646**
	Sig. (2-tailed)		0.000
	N	138	138
LOC	Pearson Correlation	.646**	1
	Sig. (2-tailed)	0.000	
	N	138	138

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5. Correlation matrix of four elements levers of control and four perspectives of BSC using Pearson’s Correlation test

	Customer	Internal Business Process	Learning & Growth	Financial	Belief System	Boundary System	Diagnostic System	Interactive System
Customer	1							
Internal Business Process	.457**	1						
Learning & Growth	.633**	.593**	1					
Financial	.433**	.469**	.635**	1				
Belief System	.378**	.312**	.267**	.279**	1			
Boundary System	.385**	.321**	.359**	.348**	.706**	1		
Diagnostic System	.503**	.381**	.555**	.471**	.323**	.409**	1	
Interactive System	.400**	.241**	.516**	.496**	.340**	.394**	.660**	1

** . Correlation is significant at the 0.01 level (2-tailed).

4. CONCLUSION

This paper aims to investigate the implementation and association of two innovative management control tools namely the BSC (Kaplan and Norton, 1992) and the LOC (Simons, 1995) in Malaysian SMEs. This study shows a positive and significant relationship between the LOC and BSC illustrating that both tools have the potential to be integrated in the SMEs. Our study contributes by investigating the frameworks of BSC and LOC as a whole in SMEs setting. For future research, we suggest examining the contextual factors that might influence the integration of the BSC and LOC and the effect of the integration to companies’ performance.

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Innovative Employer Tax E-filing System: The Determinants towards Efficiency of Organization's Performance

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Abstract: *Technology has been known as a strategic medium for being competitive among firms and able to boost a company's performance. E-filing is one of the technology projects that have been introduced to the taxpayers with the aim to increase the efficiency and ease of government services to the taxpayers. Unfortunately, most employers (other than companies) found it difficult to adapt to these changes. Existing models of technology adoption have not provided sufficient insights on factors that could influence the successful adoption of employer e-filing systems among employers (other than companies). Thus, this study aims to determine behavioral intention to use employer e-filing systems among registered employers (other than companies). This study employed a quantitative survey method where the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) is adopted in this study to determine the relationship between identified factors and behavioral intention to use employer e-filing system among employers (other than companies) via 347 completed and usable questionnaires returned. The results of the study show that the factors that determine the acceptance of the employer's e-filing system among registered employers (other than companies) are performance expectations, social influence, trust in the system, and risk perception. The findings show that greater efforts should be made to strengthen the employer e-filing system's security features since the concerns are about data security in managing employees' confidential information.*

Keywords: E-filing, System, Unified Theory of Acceptance and Use of Technology, System Trust

1. INTRODUCTION

Efficiency in an organization's performance is crucial for its success and competitiveness. It refers to the ability to accomplish tasks and utilize resources in the most effective and optimal manner. A high level of efficiency ensures that the organization maximizes productivity, minimizes waste, and achieves its goals with minimal effort and cost. Efficient organizations have streamlined processes, eliminated unnecessary steps, and utilized resources strategically. In fact, an efficient organization would certainly have clear objectives, effective communication channels, and well-defined roles and responsibilities. Efficient organizations also leverage technology and automation to enhance productivity and accuracy. Indirectly, by focusing on efficiency, organizations could improve customer satisfaction, reduce operational costs, and gain a competitive edge in the marketplace. It requires continuous improvement,

effective resource allocation, and a commitment to optimizing performance across all levels and functions. Ultimately, efficiency is a key driver of organizational success, enabling companies to achieve sustainable growth and deliver value to stakeholders.

The introduction of an innovative employer tax e-filing system is a cutting-edge solution designed to streamline and simplify the process of filing taxes for employers which is one of the efforts towards an efficient organization. The system incorporates advanced technology and user-friendly interfaces to revolutionize employers' management of their tax obligations. Indeed, by utilizing the innovative system, employers can effortlessly submit their tax information electronically, eliminating the need for tedious paperwork and reducing the chances of errors. The system, in fact, offers a range of features, including automated calculations, secure data storage, and instant confirmation of tax submissions. Hence, with the innovative employer tax e-filing system, employers can save time, improve accuracy, and ensure compliance with tax regulations, ultimately fostering efficiency and productivity in their tax-related operations.

This technology embedded is aligned with the ideas of the Government movement that started at the end of the last decade in Europe (Kamaruddin & Noor, 2017). According to (Aziz, (2012); Fu, Farn, & Chao, 2006), e-filing is the best medium that can speed up filing income tax forms and at the same time reduce costs for both the taxpayers as well as the tax authorities. One of the primary goals of developing the e-filing system is to promote taxpayer compliance and prevent sending incomplete tax forms to the Inland Revenue Board of Malaysia (IRBM). The procedure of processing incomplete tax forms imposes operational costs on IRBM. The operational costs incurred by IRBM in administering this incomplete manual form include the cost of printing an Incomplete Return Form Notice Letter to the taxpayer and establishing a file room to store the Incomplete Return Form. Such operating expenditures can be avoided if all employers adopt the employer e-filing system. In addition, these costs become an unproductive expense for the Malaysian government. As a result, IRBM hopes that the e-filing system will increase tax compliance and allow taxpayers to submit tax returns that are correctly filled out because the e-filing system is designed to ensure that taxpayers do not overlook mandatory fields or information before proceeding with the submission process in the tax filing system. Hence, despite the huge allocation of resources toward the e-filing system, yet to achieve full compliance among the taxpayers. Accordingly, this study would like to determine behavioral intention to use employer e-filing systems among registered employers (other than companies).

2. LITERATURE REVIEW

Employer e-filing system allowed both employers (other than company) and IRBM have benefited. Employers especially those other than companies that do not have a computerized payroll system receive certain benefits if they electronically file Form E and remuneration statement (C.P.8D). These include boosting operational efficiency and lowering administrative expenses in supplying needed personnel information documents, as well as lowering the operating costs of submitting Form E and remuneration statement (C.P.8D) to the IRBM. All the records are restored electronically and easy for employers to track the history data and records.

Indeed, employer e-filing system eliminates several problems and assists the IRBM to increase tax compliance among taxpayers, especially employers. Employer e-filing system assists the IRBM to achieve a higher compliance rate among employers. This is because the

e-filing system is a medium that helps taxpayers carry out their tax responsibilities easily (Indah & Setiawan, 2020). Form E and remuneration statement (C.P.8D) are crucial and important data for the IRBM to gather as this information help the IRBM to get third-party information regarding total remuneration received by the employees. The IRBM could collect the actual number of income recipients in Malaysia from the data provided by this employer. This information assists the IRBM in ensuring that all income recipients in Malaysia are registered as Malaysian taxpayers. The IRBM may consider greater action, such as sending a final notice to the individuals who fail to submit tax forms. In addition, eliminating manual forms for employers will help IRBM to achieve its mission wisely. By enabling all employers to submit Form E and remuneration statement (C.P.8D) through the employer e-filing system, the IRBM could make better use of financial and human resources. The IRBM is also could save in terms of expenses from keeping paper forms. The expenses of maintaining paper forms include storage costs, printing costs, and the cost of officers performing the activity of inputting data into the system. Furthermore, the IRBM does not need to commit expenses to dispose of the paper forms.

2.1. Prior study of intention to use technology

The majority of taxpayers avoid using e-filing due to difficulty in obtaining PIN number (Ramayah, Ramoo, & Ibrahim, 2008). According to Lai, Obid, and Meera (2004), there is a relationship between the desire to use the system and the availability of technology. Thus, the aim of the present study is to explore the level of using employer e-filing systems among registered employers (other than company) in the Klang Valley. Subsequently, the present study attempted to identify the determinants of employer e-filing system acceptability among registered employers (other than company) in the Klang Valley.

It is crucial to understand that user acceptance and trust are critical for any new technology to be further established (Taherdoost, 2017). In general, acceptance is defined as the act of receiving. Technology acceptance models and theories have been applied in various fields to understand and predict users' behavior toward new technology. There are many frameworks that discussed the acceptability of any technology in various fields. Governments were among the earliest adopters of emerging technology and the first scholarly papers on the use of Information and Communications Technology (ICT) in government were published in the early 1960s on topics such as the effect of electronic data processing on areas such as taxation (Riche & Alli, 1960). However, the usefulness of Information Technology (IT) relies on the users who use it and enjoy the benefits from it. There are many factors that influence users whether to use IT or not which has been introduced to them. Furthermore, users' resistance to acceptance of the use of technology can lead to an IT productivity paradox, whereby it is a phenomenon of the non-productive use of technology (Liang, You, & Liu, 2010).

For the year remuneration 2021, the IRBM received 34,515 form E and remuneration statements (C.P.8D). In the case of the IRBM, the refusal of some employers (other than company) to use employer e-filing system as a medium to submit form E and remuneration statement (C.P.8D) will result of the possibility of receiving the incomplete return form. It is because manual Form E and remuneration statement (C.P.8D) is exposed for human error and late submission. Utilization of IT adoption among employers (other than company) is associated with the user acceptance of the technology. Technology acceptance is defined as user psychological state of mind regarding their voluntary i.e., intended use of technology (Fu, Farn, & Chao, 2006). Thus, this study will further discuss the existing model of

information technology acceptance and relate it to each independent variable and chosen dependent variable in this study.

2.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) was introduced by Venkatesh, Morris, Davis, and Davis in 2003. The goal of UTAUT is to characterize a user's initial intent to use information and technology systems and their future user behavior. According to this theory, a person can use technology if technology systems basically consist of the four main constructs which are performance expectations (PE), effort expectations (EE), social influence (SI), and facilitating conditions (FC). In addition, this model uses gender, age, experience, and voluntariness as moderators toward four main constructs on intention to use and use behavior. It resembles the original TAM model where PE and EE were combined from PU and PEOU. Meaning, the construct carries the same meaning in predicting behavioral intentions. UTAUT is regarded as the most effective technology acceptance theory created to study how well users can embrace new technology and how likely they are to use it (Momani, September 2020). Essentially, this theory combines eight long-existing theories which are the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model (MM), the theory of planned behavior (TPB), a model combining the TAM and the TPB, the model of PC utilization (MPCU), the innovation diffusion theory (IDT), and the social cognitive theory (SCT) into one comprehensive idea that unites all the uniqueness of each of the previous theories to benefit from the unique characteristics of all the previous theories.

3. METHODOLOGY

The aim of this study is to examine the acceptance of employer e-filing system among registered employers (other than company) in the Klang Valley based on the Unified Theory of Acceptance and Use of Technology (UTAUT) research model as developed by Venkatesh et al. (2003) with some modifications. Modifications to this model are proposed to examine the intentions of registered employers (other than company) in the Klang Valley on the acceptance of employer e-filing system as adapted from Venkatesh et al. (2003)

This study, which takes the form of a quantitative analysis, focuses on the factors that influence registered employers (other than company) in the Klang Valley to embrace the employer e-filing system. Registered employers (other than company) in the Klang Valley that were chosen through simple random sampling serve as the analytical unit for this study. The selected respondent received questionnaires using a Google form. The questionnaire on a 5-point Likert scale is sent via hyperlink to the respondent's email and mobile phone number. In addition, a brief interview is also held among registered employers (other than company) in the Klang Valley when employers submitted forms E and remuneration statements (C.P.8D) to gain a more in-depth insight and to verify the information given in the questionnaire. The questions encompassed independent variables such as performance expectancy, effort expectancy, social influence, facilitating condition, system trust, and perceived risk that influence behavioral intent to adopt an employer's e-filing system.

4. FINDINGS AND DISCUSSION

The objective is to identify the factors that determine the acceptance of the employer e-filing system among registered employers (other than company) in the Klang Valley. This study

examined six factors which are performance expectancy, effort expectancy, social influence, facilitating conditions, system trust, and perceived risk. The results indicate that all the independent variables have a positive relationship with the dependent variable (intention to use employer e-filing system) except two factors which are effort expectancy and facilitating conditions. Based on the result, only performance expectancy, social influence, system trust, and perceived risk have a positive significant relationship with the dependent variable. However, only four determinants have a significant relationship with the intention to use the employer e-filing system (performance expectancy; social influence; system trust, and perceived risk). Thus, it can be concluded that factors that determine the acceptance of the employer e-filing system among registered employers (other than company) in the Klang Valley are performance expectancy, social influence, system trust, and perceived risk.

4.1. Perceived risk is significantly related to the behavioral intention

The results show that perceived risk is having the greatest score of correlation when compared to the other three independent variables. This factor has a very strong relationship with the intention of employers (other than company) to use the employer e-filing system in returning their form E and remuneration statement (C.P.8D). This result is consistent with the study conducted in the analysis of the adoption of electronic tax filing in Indonesia. This study found the perception of risk is an exogenous element that influences taxpayers' decision to use e-filing (Sijabat, 2020). Employers deal a lot with employee financial/salary information. As a result, employers are extremely concerned about safety risks. For example, when an employer e-filing system could offer high security towards organizational information protection, authorization mechanism, and ability to keep and provide complete employees information to them, then it will positively increase the intention to use the employer e-filing system.

The IRBM must streamline the employer's e-filing system with a highly secure system. Employers (other than company) must be given a verification code that must be updated every year. A verification code is necessary to verify that this employer's account is only accessed by authorized personnel. Employer e-filing system is able to keep and update the employees' information. IRBM must ensure that the employer e-filing system can preserve and update employee information as needed. Employers are not required to furnish the same basic information for the same employee on each form E and remuneration statement (C.P.8D) submission. Employers only need to enter salary information or any other payment information once per salary year. Employers only need to enter new data for new employees. This measure can save the employers time and ensure that the information reported is accurate. Actions and modifications to the employer's e-filing system need to be carried out by the IRBM to ensure that the rate of use of the employer's e-filing system among employers (other than company) increases.

4.2. Performance expectancy is significantly related to the behavioural intention

The results show that performance expectancy is significant determinants of intention to use employer e-filing system in the Klang Valley. Performance expectation is an important consideration for employers (other than company). Employers (other than company) believe that if the employer e-filing system can assist to manage the employer's taxation matters better, the employers (other than company) will use the employer e-filing system. Employers will use employer e-filing system if employers (other than company) can earn the benefits. In a study conducted in China during the covid-19 season. The study examines the use of the

system during the covid-19 outbreak among their employees. The study found that if employees do not believe that the system used can improve work performance, employees will not want to adopt the system (Wu & Tian, 2021).

The IRBM needs to streamline the existing system to ensure that this system can be used by employers easily and can help employers send form E and remuneration statement (C.P.8D) and other taxation matters within the appropriate period. Employers are liable for several taxation issues. Employers must notify the number of new employees, employees who quit, and employees who return to their home country and remit PCB payments to the IRBM monthly. As a result, the IRBM should provide only one system that employers can utilize to conduct all these duties. Because only one system needs to be entered to address all taxes concerns, this can increase the employer's willingness to use the employer e-filing system.

4.3. Social influence is significantly related to the behavioral intention

The result shows that social influence is correlated and has a significant relationship with the intention to use employer e-filing systems among employers (other than company) in the Klang Valley. Social influence for employers (other than the company) refers to internal parties and external parties. Internal parties consist of employees in the company while external parties are departments or other parties who frequently deal with tax preparers who often assist employers (other than company) in taxation matters. Both groups could persuade employers (other than company) to use the employer e-filing system. For instance, suppose the employer wishes to get into a business deal. The party in charge of managing the sales contract establishes the terms of the transaction, which require the employer to deliver taxation documents in online print format. This encourages employers to use this employer's e-filing system. This finding is consistent with a study on the use of mobile government services in China. The study found that social influence is a positive predictor of citizens' intention to use mobile government services (Liu, et al., 2014).

The IRBM must form numerous collaborations with external agencies so that empowerment using the employer's e-filing system can be done together. The information generated from the system is more accurate and this basic information is more consistently used by various other agencies for different purposes without compromising information confidentiality.

4.4. System trust is significantly related to the behavioral intention

Analysis of this study supports that systems trust is correlated and has a significant relationship with the intention to use employer e-filing systems among registered employers (other than company) in the Klang Valley. It is validated that its relationship is positively significant. System trust in this study refers to the reliability of the system, security of the system, stability of the internet as well as legal and technology structure that could protect confidential information. Employers are responsible for certain matters of taxation. Section 83 of the ACP1967 specifies the employer's taxation responsibilities. The employer must annually report to IRBM the employee's personal information as well as the amount of salary received. This taxes responsibility entails certain sensitive and private information. As a result, employers place a high value on system security. If the employer believes and trusts the employer's e-filing system could offer the appropriate protection for the information provided, the employer will use the e-filing system. This finding is consistent with a study conducted to determine the reasons for the barriers to the full adoption of the innovative e-filing system in South Africa, respondents indicated that trust was an important construct in

determining why the South African government was not realizing the full potential of the innovative e-filing system (Maphumula & Njenga, 2019).

The IRBM must behave in accordance with the wishes of this employer. IRBM must provide a system that employers can rely on. This is because IRBM does not deny that employers manage sensitive and secret information, security concerns that could undermine trust in this system must be addressed.

5. CONCLUSION

This research has successfully examined empirically the relationship between performance expectations, effort expectations, social influence, facilitating conditions, system trust, perceived risk and the behavioral intention to accept the employer's e-filing system among registered employers (other than company) in the Klang Valley. The empirical findings are valuable to tax authorities and taxation practitioners in Malaysia. It can help the Malaysian tax authorities i.e., IRBM in general and branches in Klang Valley, in particular, to increase the use of employer e-filing systems by considering the determinants of performance expectations, social influence, system trust, and perceived risk, and show how they have a positive effect on the system. These findings could assist the IRBM to focus on activities or areas related to priority variables (performance expectations, social influence, system trust, and perceived risk) as found in this study in order to increase the acceptance of employers' e-filing systems in the Klang Valley and beyond in Malaysia. When an employer (other than company) believes that the employer's e-filing system is secure to use and helps the employers (other than company) manage employees' information more efficiently, the employer's (other than company) intention to use the system increases.

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The Roles of an Innovative Performance Measurement System in the Relationship Between Contingency Factors and Performance in Small and Medium-Sized Enterprises

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Abstract: *This study seeks to investigate the moderating effect of an innovative performance measurement system (PMS) on the relationship between contingency factors and SME performance. The study uses partial least squares structural equation modelling to analyse 138 survey responses. Results indicate that an innovative PMS has a significant relationship with firm performance. In addition, the results show that the innovative PMS mediates the relationship between the contingency factor namely the managerial style. The findings of this study offer important insights for academicians and practitioners to further understand the roles of innovative management control mechanisms in enhancing their business performance, hence ensuring their sustainability.*

Keywords: Performance measurement system, contingency factors, SMEs

1. INTRODUCTION

In Malaysia, a country within the developing countries context, SMEs have a significant role as a backbone of the economy (Ramayah et al., 2009; Saleh & Ndubisi, 2006). According to the Department of Statistics Malaysia (2023), the number of Malaysian SMEs in 2021 reached about 1.2 million, comprising 19,459 medium-sized enterprises, 242,540 small enterprises, and 964,495 micro-sized firms. They are important for the country as they provide huge job opportunities and contribute to the economic growth.

However, as they are smaller in size, SMEs often struggle with poor strategic planning as they seldom lack the expertise and resources to fully understand the real determinants of a company's success. In relation to this, previous studies have detected various challenges that may hinder the stimulation of SMEs' performance. The common challenges faced by SMEs include a lack of financial resources, a lack of human expertise, low productivity, and marketing difficulties (Hashim, 2000; Tambunan, 2008). To shed light on this issue, the current study has been conducted to explain the factors that could improve performance by focusing on the use of performance measurement systems (PMSs).

To accomplish business objectives, Garengo et al. (2005) suggested that a key element in ensuring the survival of SMEs is the proper use of essential business and systematic management practices. Previous studies stated that PMSs can assist companies to achieve

business success by managing the behaviour of their employees and align them with organizational objectives. Therefore, this study is conducted to find factors that influence the use of PMS by employing the contingency theory in explaining the intervening factors between the use PMS and SMEs' performance. Scholars suggest that contingency theory is important to find the factors leading to improved financial performance as it can be applied to various management practices in different setting (e.g., Chenhall, 2003; Garengo & Bititci, 2007; Otley, 1980), Nonetheless, there are few studies on the contingency factors for SMEs. Furthermore, the literature is limited to developed countries, and there is insufficient evidence regarding the factors related to the PMS in Malaysian setting.

2. LITERATURE REVIEW

2.1. Performance Measurement Systems and Organizational Performance

A PMS is defined as a set of financial or nonfinancial metrics that help an organization's decision-making process by collecting, processing, and analysing quantified performance data (Gimbert et al., 2010; Neely et al., 2005). The PMS are important for strategy, communication, and management processes as well as generating organizational capabilities that help businesses to achieve better performance (e.g., Eccles, 1991; Ittner & Larcker, 1998; Kaplan & Norton, 1996; Melnyk et al., 2004). The system enables organizations to put strategies into practice and foster positive behaviours that will help them to improve performance both in the short and long terms (Franco-Santos et al., 2012; Micheli & Mura, 2017). Garengo et al. (2005) and Neely et al. (2005) in their studies on PMSs also highlighted the direct relationship between performance measures and organizational performance. For our study, we define the innovative PMS as consists of the Kaplan and Norton's (1992) balanced scorecard's (BCS) performance measures and Simon's (1995) levers of control (LOC).

3. HYPOTHESIS DEVELOPMENT

3.1. Contingency Factors, Performance Management Systems, and Organizational Performance

Market competition (MC) is an important factor that could affect both organizational design and a firm's performance. Firms that face intense competition need to create and implement an effective control system to sustain their business continuity and profitability (Cooper, 1996; Hoque, 2011; Kaplan & Cooper, 1998; Mia & Clarke, 1999). Chia-Ling and Huan-Jung (2011) and Khandwalla (1972) suggested that as MC is perceived to increase, the intensity of the managers using management accounting system information will also increase, with the latter leading to the enhancement of firms' performance.

Past studies indicate that managerial style (MS) is one of the most important internal contingency factors concerning an organization's ability to adopt changes in management accounting (Gil et al., 2009; Overstreet et al., 2013). One of the positive characteristics of management style is transformational leadership (Vaccaro et al., 2011). Vaccaro et al. (2011) stated that transformational leadership is useful to foster management innovation for example, by considering their subordinates' points of view in making strategic change.

Based on the above arguments and discussion, this study provides the following hypotheses:

- Hypothesis 1 (H1) : There is a positive and significant relationship between MC and a PMS.
 Hypothesis 2 (H2) : There is a positive and significant relationship between MS and a PMS.
 Hypothesis 3 (H3) : A PMS is positively related with performance.
 Hypothesis 4 (H4) : A PMS mediates in the relationship between MC and performance.
 Hypothesis 5 (H5) : A PMS mediates in the relationship between MS and performance.

4. RESEARCH METHOD

This study adopts quantitative data analysis and uses primary data obtained through survey research. For the development of the survey instruments, all questions were adapted from the previous studies. Questions on MC and MS were originally formulated by Bedford (2015), Gordon and Narayanan (1984), Hoque et al. (2001), Khandwalla (1972), and Parida et al. (2016). Meanwhile, questions on performance were adapted from Overstreet et al. (2012) and Widener (2005). A 5-point Likert scale was applied in the instrument. To assess the reliability of the instruments, we conducted a pretest and a pilot study.

The survey was distributed randomly by post mail and through the face-to-face approach to 500 owners and managers of SMEs questionnaires. Out of the 148 surveys retrieved, 10 of them were discarded as they were significantly incomplete. Hence, the total number of usable questionnaires for further analysis is 138 surveys, which represents a 27.6% response rate. As for the data analysis procedure, we used SPSS version 28.0 to perform descriptive analysis. Since our model consists of both mediating and moderating variables, partial least square structural equation modelling (PLS-SEM) using Smart-PLS is employed.

5. RESULTS

5.1. Measurement Model

We tested the measurement model for data reliability and validity. Firstly, using indicator loading, the results show loadings beyond the standard value of 0.5, which means that all items have satisfactory indicator reliability. Secondly, in assessing the internal consistency reliability, the results show that all values of the construct item exceeded the 0.70 threshold demonstrating that the measurement model achieved acceptable reliability (Hair et al., 2014). Thirdly, in measuring the average variance extracted (AVE), this study report AVE values of more than 0.5. Fourthly, in determining the discriminant validity we used the heterotrait-monotrait technique (Henseler et al., 2015). The results can be seen in the table below.

Table 1. Discriminant Validity Assessment Using the Heterotrait-Monotrait Ratio

Construct Items	BSC	LOC	MC	MS	PERF
PMS-BSC					
PMS-LOC	0.677				
MC	0.477	0.435			
MS	0.538	0.724	0.5		
PERF	0.444	0.549	0.196	0.43	

Note: The heterotrait-monotrait ratio should be no more than 0.85 (Hair et al., 2017).

5.2. Structural Model

The analysis was then further conducted with structural model evaluation. In reporting the inner model, we examined the coefficient of determination (R^2) and predictive relevance (Q^2) presented in Table 2.

Table 2. Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

Endogenous Variable	R^2	Q^2
PERF	0.252	0.143
PMS	0.59	0.242

The coefficient of determination (or R^2) is used to explain the relationship between an exogenous and endogenous variable. Referring to Table 2 above, the R^2 of performance and PMS are 0.252 and 0.59 respectively. This study followed Cohen's guideline of coefficient determination, which defines 0.26 as strong, 0.13 as moderate, and 0.02 as weak. The predictive relevance (Q^2) of the model is assessed through the blindfolding procedure as suggested by Hair et al. (2017). Table 2 shows that both constructs have exhibited clear predictive relevance, with each Perf = 0.143 and PMS=0.242. This means that the exogenous constructs (contingency factors) have predictive relevance over the endogenous constructs (performance) (Hair et al., 2014).

5.3. Results of Hypotheses

Table 3. Hypothesis Testing

	Hypothesis	Original sample (O)	t statistic (O/STDEV)	p value
H1	MC→PMS	0.054	0.784	0.432
H2	MS→PMS	0.492	7.133	0.0000
H3	PMS→PERF	0.371	4.57	0.0000
H4	MC→PMS→PERF	0.02	0.777	0.438
H5	MS→PMS→PERF	0.183	3.464	0.001

6. DISCUSSION

Table 3 shows that there is a significant relationship in the direct effect between MS, adaptive capability, and a PMS. Both relationships are significant at $t = 7.133$ and $p = 0.000$ and $t = 5.04$ and $p = 0.000$, respectively. The direct effect between a PMS and performance also shows a positive and significant relationship. The relationship is significant at $t = 4.57$ and $p = 0.000$. Thus, H2 and H3 were accepted and supported. However, the direct effect of MC and performance was not significant, thus leading to a rejection of H1. This study assessed the indirect effect of a PMS on the relationship between contingency factors and performance. The result shows that out of three indirect hypotheses, only two were accepted: a PMS as a mediator on the relationship between MS and performance and a PMS as a mediator on the relationship between adaptive capability and performance. Hence, H5 was supported at $t = 3.464$ and $p = 0.001$ and $t = 3.72$ and $p = 0.000$, respectively. In conclusion, based on the previous clarification, the results indicate that three hypotheses were significant and accepted and the other two hypotheses were insignificant while using the significance level of probability, $p < 0.05$.

The results show the interaction between MC and a PMS, which was also an effect of mediation between MC and performance, were both negative, leading to a rejection of H1 and H4. We predicted that in the SME context, when MC intensifies, it will force enterprises to lower their prices to stay competitive; given their small sizes, price decreases will affect their profit margins significantly. As they are also known to have limitations in financial resources, this will prevent them from innovating and sustaining their businesses, which will lead to failure in business performance. Next, there is a significant relationship between MS and a PMS, which means that the systematic MS has a positive relationship with the implementation of a PMS among Malaysian SMEs. This result is supported by a study from Sang and Sang (2016) that suggest that leadership style is important in PMS implementation. In the context of SMEs, the finding is supported by Özer (2014), which led to the acceptance of H5 of the study.

7. CONCLUSION

The aim of this study is to investigate the indirect relationship between contingency factors and organizational performance via a PMS. The data analysis finds support for the indirect effect of MS and adaptive capability towards organizational performance via performance measurement tools. The results from support the notion in the literature that there is no universally appropriate PMS that applies equally to organizations (Otley, 1980). Nonetheless, in interpreting the results, caution should be applied as the limited number of respondents could affect generalizability of the study's findings.

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Integrated Reporting Adoption Level Among Agriculture Companies in Malaysia

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Abstract: Sustainability is one of the main agenda in agriculture sector. One of the initiatives to ensure sustainability is by improving the corporate governance and reporting practices. To achieve this, an agriculture company must transform from preparing merely a traditional financial reporting into an Integrated Reporting (IR). IR has many benefits to the company and stakeholders. However, the current level of IR adoption is still low among companies in Malaysia. Therefore, the main objective of this study is to examine the current level of IR adoption specifically among agriculture companies in Malaysia. This study is conducted using a quantitative approach. A content analysis on annual report of agriculture companies was performed and data was analyzed descriptively. The findings from the analysis show that only 4 out of 44 agriculture companies have fully adopted IR. Moreover, the findings indicate that agriculture companies highly disclosed information about organizational overview and external environment in integrated manner. This study provides an overview of the agriculture sector in preparing IR and providing information about its' strategy, performance, and sustainable value creation activity. The output of this study is relevance to corporate governance initiatives and promoting value-driven agriculture business in Malaysia.

Keywords: Corporate reporting, Integrated reporting, Agriculture sector

1. INTRODUCTION

Agriculture sector is an important sector in Malaysia due to its impact on social, economy and environment. Due to its huge potential, the Malaysian government is emphasizing the sustainability of this sector. One of the attentions by the government is boosting the capital investment from private sector in commercializing agriculture sector. One of the efforts is by improving the corporate governance and reporting practices of the agriculture company. To achieve this, an agriculture company must transform from merely traditional financial reporting into integrated reporting (IR). IR has many benefits to the company and stakeholders. However, the current level of knowledge about IR is still low among companies and stakeholders in Malaysia, including among agriculture sector.

Therefore, the main objective of this study is to determine the current level of IR adoption among agriculture companies in Malaysia. This study analyzes the type of information and the level of integration of this information in the company's annual report. It is expected that

this study provides an overview of the agriculture sector in preparing IR and providing information about its' strategy, performance, and sustainable value creation activity. The output of this study is relevance to both local and international corporate governance initiatives and promoting value-driven agriculture business in Malaysia.

2. LITERATURE REVIEW

2.1. Traditional financial reporting in agriculture company

Agriculture sector is an important sector in Malaysia. It has huge impact on Malaysian social, economy and environment. Agriculture sector involves 14 million workforce and contributed 7.3% (99.5 million) to Malaysian' Gross Domestic Product in year 2018 (Department of Statistics Malaysia, 2019). Agriculture activity may result in deforestation and pollution to the environment if not planned and managed effectively. The modernization of agriculture sector has transformed the sector into not only as a food supplier, but also as a food security for a long future in Malaysia. With the advancement in technological development and Industrial Revolution 4.0, the agriculture sector needs to be ready to cope with the advancement and be more productive than ever (New Straits Times, 2020). One of the focuses is given on boosting the private sector investment in commercializing agriculture sector as well as agriculture trade export (New Straits Times, 2019).

In order to encourage private investment, stakeholders such as investors, workers, customers and environmentalist rely on information provided in the financial reporting prepared by the business entities. Financial reporting has been used by business entities as a platform to present financial information and performance of their business to various stakeholders. The financial information will help these stakeholders to evaluate the performance of the companies in making economic decisions such as providing capital, and solving issues of sustainability of social, income and environment. However, the traditional financial reporting has been criticized for not being relevance in assisting users in predicting future performance of an organization (Lev, 2018). Forward-looking information such as the value of intellectual capital, social capital, relational capital, environmental capital and natural capital are missing from the traditional financial report. Besides, information on the risk management and corporate governance are also not available in the traditional financial reporting which is importance for stakeholders to assess the risk and efficiency of the business entities. This information asymmetry between the business entities and the stakeholders has resulted in undervaluation of market value of firms, misallocation of resources and high cost of capital (Lev, 2018), and thus may undermine the potential of agriculture companies.

To overcome the information asymmetry between the management and the stakeholders, companies disclose various non-financial information such as information on economic, corporate social responsibility, and environmental disclosure in sustainability reporting. Sustainability reporting provides information on how a business entity embed economic, environmental, and social (EES) issues in its business operation to sustain in long term. Sustainability reporting has been promoted by Bursa Malaysia since 2007 and has become mandatory since 2015 (Bursa Malaysia, 2018). However, the financial information presented in financial statement and the non-financial information of EES disclosed in sustainability reporting are not integrated and not interrelated between each other as they are reported as separate sections in the annual report. The non-integration of financial and non-financial information has made it difficult to investors and other stakeholders in assessing the performance and sustainability of the company (Eccles & Saltzman, 2011) and in creating

value in the future (Ioana & Adriana, 2014). Therefore, it is recommended that an integration of financial and non-financial information is prepared through an Integrated Reporting (IR).

2.2. Innovation in Integrated Reporting

IR is a form of corporate reporting that explains how a business organization creates value over time through utilization of its resources; both financial and non-financial capital, including manufactured capital, intellectual capital, human capital, social and relationship capital, and natural capital (IIRC, 2013). In IR, the key concept is not only reporting the monetary value of the resource only, but also explaining on how this resource is utilized to create value to the organization in short, medium, and long term. Therefore, investors and other stakeholders may gain insight on how these resources bring benefit to companies over time. Figure 1 below illustrates the value creation process that is captured in IR.

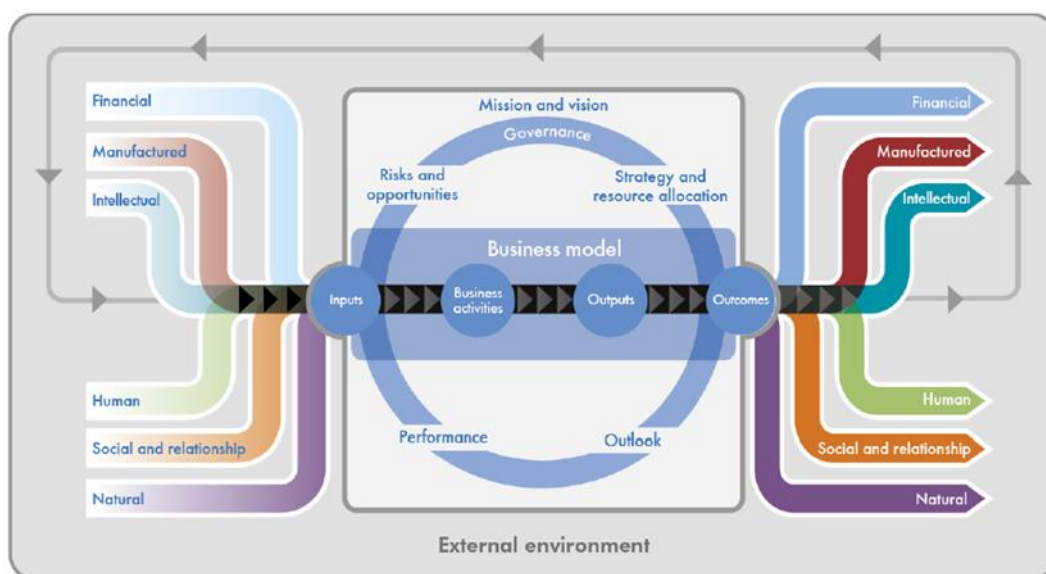


Fig. 1. The value creation process (Source: International Integrated Reporting Council, 2013; 2021)

In business, stakeholders need holistic information such as an overview of the business, strategy, and the overall business model which explains the input, process and output of the business operation in creating short-, medium-, and long-term value. Stakeholders are also interested with information on how the company address the risk and opportunities in business, both internal and external, besides the financial performance of the business. In IR, the report will address all these elements, i.e., organizational overview, strategy, business model, opportunities and risk, governance, performance, prospects of all of its resources and basis of preparation of the report (IIRC, 2013). All elements must be interconnected to each other and not standalone in the report. The elements are also unique and different across industry because it depends on different stakeholders of each industry (IIRC, 2013). In agriculture sector, a different set of elements are expected in this industry since it has different group of stakeholders from other industries.

Several studies have explored the early IR practices across the world (Wild & Staden, 2013; Setia, et al, 2015; Lee & Yeo, 2016; Ahmed Haji & Anifowose, 2017; Pistoni, Songini & Bavagnoli, 2018). Wild & Staden (2013) examined the IR practices among 58 worldwide

companies included in the pilot programmed of IIRC in year 2011. The study found that the integrated reports are too lengthy, with emphasis on four capitals only (i.e., financial, human, social and natural capital) and lack of future outlook information. Studies by Setia et al. (2015) and Ahmed Haji and Anifowose (2017) among South African companies discovered an increase in disclosure level of various capitals but missing the explanation on the interdependency of the capitals and the value creation ability. Pistoni et al. (2018) examined the integrated reporting quality of 58 worldwide companies during year 2013-2014 and found that the level of quality is still low but improving significantly over time. The study also found that the companies focused on the form rather than the substance of integrated reporting as proposed by IIRC (2013). The result is justifiable since IR is still at early adoption stage.

Lee and Yeo (2016) examine the relationship between integrated reporting and firm value among listed companies that disclose integrated reporting in South Africa. The study discovers a positive relationship between corporate valuation and Integrated Reporting disclosures. This finding implies that, on average, the benefits of Integrated Reporting outweigh the costs. It is anticipated that Integrated Reporting will cut information processing costs in organizations with complex operational and information environments. Consistent with its prediction, the study finds that the positive relationship between firm valuation and Integrated Reporting is stronger in firms with higher organizational complexity, implying that Integrated Reporting improves the information environment in complex firms, such as those with high intangible assets, multiple business segments, and large firms. Furthermore, the study shows that in firms with larger external funding needs, the subsample of firms with higher Integrated Reporting has higher company valuations, implying that Integrated Reporting reduces information asymmetry between corporate insiders and external capital suppliers. Additional analysis shows that organizations with high Integrated Reporting beat those with low Integrated Reporting in terms of stock market and accounting performance.

In Malaysia, all public listed companies are encouraged by Bursa Malaysia to adopt IR practices in their annual report since 2012 (Sun Daily, 2017). To create the awareness and promote IR, the Malaysian Institute of Accountants (MIA) have established the Integrated Reporting Steering Committee Malaysia (IRSC) in year 2014 (MIA, 2016). The capital market regulators also encourage the adoption of IR among the public listed companies due to its benefits in improving capital market efficiency. The latest Malaysian Code of Corporate Governance (MCCG) 2017 encourages large companies to adopt IR to help strengthen the corporate governance ecosystem (Securities Commission Malaysia, 2017). Although it is not made mandatory, several large public listed companies have adopted IR (PwC, 2018).

Despite the current development of IR in Malaysia, very few studies have been conducted on examining IR practices in the country. PwC (2018) had examined the IR practices among top 50 companies in Malaysia. The study found that only few companies have fully complied with the IR Framework and others complied partially by disclosing selected elements from the framework. As the agriculture activities consume considerable amount of resources such as land, water, people, financial capital, equipment, consumers, etc, there is a growing concern on how this sector will affect to not only the environment, but also social and economic sustainability (Topp-Becker & Ellis, 2017). Thus, it is crucial for agriculture companies to response to the needs of the stakeholders by publishing reports that highlights information from different perspectives. To date, there is no other study found in examining the IR practices in agriculture sector in Malaysia. Therefore, this study attempts to close the gap. It is expected that with more information reported in integrated reporting, better

economic decision can be made by various stakeholders especially investors, thus boosting the agriculture sector.

3. RESEARCH METHODOLOGY

Avoid hyphenation at the end of a line. Symbols denoting vectors and matrices should be indicated in bold type. Scalar variable names should normally be expressed using italics. Weights and measures should be expressed in SI units. All non-standard abbreviations or symbols must be defined when first mentioned, or a glossary provided.

3.1. Population and data collection

This study is conducted using a quantitative approach. A population of 44 agriculture companies listed in Bursa Malaysia in year 2017 until 2020 are selected for the study. Final sample is 175 sample-firm (being 1 observation was deleted due to unavailability of the annual report). Data on IR practices was collected from the Annual Report issued by these agriculture companies by using content analysis method. The Integrated Reporting Disclosure Index (IRDI) was utilized, which consists of 47 IR items within 8 segments. According to the International Integrated Reporting Framework, there are eight segments in an integrated report, i.e., organizational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, and basis of preparation and presentation (IIRC, 2013; 2021). IRDI has been used in other similar studies on examining IR adoption level such as by Darus et al (2019) and Lee & Yeo (2016).

3.2. Measurement of IR level

IR level was measured using weighted scoring, where different values were assigned to different type of disclosure of information and to different level of integration. By using weighted scoring, the quality of information disclosed can be determined (Guthrie et al., 2004). This study measures the extent to which IR information is disclosed for each IR item and segment, whether only in a narrative way or supplemented with numbers. At the same time, the integration level of information was also determined. Integrated Reporting information is considered integrated if there is a connectivity of information and it appears in more than one segment. Integrated information indicates quality reporting because the company is able to link the information in different segments in one integrated report. This is the first attempt made to measure the integration level of Integrated Reporting. In this study, the level of integration of IR information was given the scores as shown in Table 1 below.

Table 1. Weighted scoring of Integrated Reporting (IR)

Score	Description
0	No disclosure of IR items at all
1	IR item is disclosed briefly (i.e., narrative only) but not integrated (i.e., appears in one segment only)
2	IR item is disclosed briefly (i.e., narrative only) and integrated (i.e., appears in more than one segment)
3	IR item is disclosed in detail (i.e., narrative and numbers) and integrated (i.e., appears in more than one segment)

4. FINDINGS AND DISCUSSIONS

Based on our initial findings, only 4 out of 44 agriculture companies (i.e., 9%) have prepared their annual report using Integrated Reporting (IR) approach. The companies which adopted IR have declared that they adopted IR in the beginning of the annual report and in the Corporate Governance Statement of the company. This is to comply with the requirement in MCGG 2012, paragraph 12.2 which encourage large companies to adopt IR based on a recognized framework (Securities Commission Malaysia, 2017). It is found that all 4 companies have adopted the IR framework issued by the International Integrated Reporting Council.

A further analysis showed the level of reporting and integration of information required under the IR framework. Table 2 below shows the descriptive analysis of the 44 companies for 4 years (n=175 observations).

Table 2. Descriptive analysis of IR information by segments

IR segments	No. of item	Total score	Mean score	Min value	Max value	Std dev
Organizational overview and external environment	15	2,614	1.00	0.22	2.00	0.57
Governance	7	1,186	0.97	0.40	2.00	0.50
Business Model	5	235	0.27	0.06	0.55	0.20
Risks and opportunities	3	426	0.81	0.54	0.99	0.24
Strategy and resource allocation	4	602	0.86	0.62	1.05	0.18
Performance	6	820	0.78	0.55	1.04	0.20
Outlook	4	440	0.63	0.11	0.99	0.38
Basis of preparation and presentation	3	361	0.69	0.06	1.00	0.54

Based on Table 2, it shows that the highest IR information disclosed in integrated manner is organizational overview and external environment. This is parallel with the high importance of external environment impact from agriculture operations. The companies disclosed more information about external environment and in an integrated manner to help financial report users in understanding the efforts made by the company to handle issues related to environment and social. The higher disclosure on organizational overview and external environment and governance themes also consistent with findings by Nguyen et al (2022) which focuses on integrated reporting practices by listed firms in Vietnam.

On the other hand, the results also show that the least information disclosed in integrated manner is business model. Business model represents the graphical overview of a company's system in transforming its inputs into outputs and outcomes, through its business operations, to achieve the company's strategic direction and create value over time. It ultimately explains to users of annual report on how the company utilize its resources to create products or services which have impact on the resources and stakeholders (Pigatto, Cinquini, Dumay, & Tenucci, 2023). This is considered as new and innovative way of explaining the overall

business's value creation process to sustain the business strategically (Nicolo, Zanellato, Tiron-Tudor & Tartaglia Polcini, 2023). Due to the new attribute of this segment, it is justifiable that not many agriculture companies disclosed this information in their annual report.

5. CONCLUSION

As a conclusion, it is found the level of integrated reporting among agriculture company is still low. However, information of organizational overview and external environment was disclosed at high level and in integrated way. This is to help users of the annual report in understanding the overall business operations and its impact on other stakeholders including the environment and society. It is expected that this study will create a pathway to improve corporate reporting among agriculture company. More transparency and high quality of reporting will result in more efficient allocation of capital. Therefore, this will improve the capital market efficiency and the overall economy of the nation.

6. ACKNOWLEDGEMENTS

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Implementing Rapid Application Development (RAD) Method in Developing Internal E-Audit System

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Abstract: *Electronic auditing, or e-Audit, is an audit task conducted with the assistance of a computer, specifically the use of electronic records to complete all or part of the auditing tasks. In line with the current digital era requirements and the Malaysian government, one of the public agencies in Kedah has taken the initiative to develop an internal audit system as one of its efforts towards integrating IR4.0 in internal work processes or decision-making. This internal audit system which is called Sistem E-audit was developed using the Rapid Application Development (RAD) method. This paper discusses the development of E-Audit system which used Django framework in the design phase, the Python programming language in the development phase, while the MongoDB database management platform was used as the database. The development of this e-audit system is expected to help the agency's internal auditors to carry out their audit tasks more comprehensively and efficiently, as well as saving time and costs.*

Keywords: Accounting Information Systems, E-Audit, Internal Audit, Rapid Application Development

1. INTRODUCTION

Information Technology (IT) has significantly impacted various aspects of human life, transitioning many activities to the virtual realm to enhance precision and efficiency while saving time and effort (Hashem, 2023). According to Thottoli, Thomas and Ahmed (2019), IT has played a crucial role in bolstering organizational infrastructure, enhancing customer service, fostering competition in the business market, aiding decision-making processes, and improving overall productivity within business organizations.

One notable domain influenced by IT is internal audit. Dharmawati (2019) emphasized the role of technology in facilitating the auditors with faster data collection, faster financial statement checking because it is done with computer assistance, and develop a broader and deeper examination scope. The integration of electronic records in the auditing process is termed as electronic auditing or e-Audit. While audit procedures in e-Audit bear similarities

to traditional audits, the fundamental distinction lies in the utilization of electronic means. E-Audit also offers comprehensive and efficient support for internal auditors in their tasks, and saving time and cost. It promotes enhanced communication between management and internal auditors, enables secure data storage in databases, and elevates the auditor's role from a mere controller to a consultant and an indirect business strategy partner within the organization (Bazmi, Rehman & Rehman, 2016).

Aligned with the current digital era and the Malaysian government's direction, private and public sector are encouraged to gradually integrate IR4.0 into its internal processes and decision-making. The benefits of this technology can enhance organization's capabilities, fortify its internal systems, and reflect efficiency and effectiveness. Consequently, it is essential for organizations to adapt and utilize e-Audit as one of the data analytics applications for decision-making processes, particularly in financial decisions involving management or financial flows between external organizations and the involved community. Therefore, this article aims to explain the process of E-Audit system development for a government organization using widely used method, namely Rapid Application Development.

This article will be presented as follows. The next section will discuss the Rapid Application Development method and its characteristics. Subsequently, the system development process and findings is presented. The article will be concluded with the presentation of the challenges in the system development using Rapid Application Development method.

2. RAPID APPLICATION DEVELOPMENT

Rapid Application Development (RAD) is a dynamic and iterative software development methodology that emphasizes speed and flexibility in creating software applications. It analyses user needs that can be adjusted with situations or conditions that can change, where the client's satisfaction is one of the main things that need to be prioritized. Unlike traditional waterfall approaches, RAD focuses on delivering functional prototypes quickly and refining them through continuous feedback and iteration (Martin & Tanaamah, 2018). This method has been used widely in various system development such as geographic information system development (Sasmito & Wibowo, 2020), online sales system (Andriani, 2018; Kosasi & Yuliani, 2015), e-market for local farmers (Joseph et. al., 2021), and calendar application (Qodim & Rahum, 2019).

2.1 Basic Characteristics of RAD

Below are the basic characteristics of RAD.

Iterative Development: RAD employs an iterative and incremental approach. Instead of waiting until the end to deliver a fully developed application, it breaks the project into smaller modules or prototypes that can be developed and delivered in shorter cycles. Each iteration builds upon the previous one, incorporating feedback and improvements.

User Involvement: RAD emphasizes active involvement of end-users, stakeholders, and developers throughout the development process. Users participate in requirements gathering, provide feedback on prototypes, and play a crucial role in shaping the final product. Their early involvement ensures that the application meets their needs and expectations.

Prototyping: RAD heavily relies on prototyping to quickly visualize and refine the application's design and functionality. Prototypes can be created using various tools, allowing

users to interact with the software and provide feedback. These prototypes are often developed rapidly and can be modified based on user feedback.

Time-Boxing: RAD projects are time-boxed, meaning that specific time periods are allocated for each iteration or prototype. This time constraint encourages focus and helps manage expectations regarding the delivery of working software within the given timeframe.

Collaboration: RAD emphasizes close collaboration between developers, users, and other stakeholders. It promotes open communication, regular meetings, and collaborative decision-making to ensure everyone is aligned with the project goals and progress.

Reuse and Automation: RAD encourages the reuse of existing components, frameworks, and code libraries to expedite development. By leveraging pre-built components and automation tools, RAD teams can focus on customizing and integrating these components rather than starting from scratch.

Rapid Feedback and Adaptation: RAD promotes a feedback-driven approach, enabling quick iterations and adaptability. Early and frequent feedback from users and stakeholders allows for rapid adjustments and course corrections, ensuring that the software aligns with evolving requirements and expectations.

3. METHODOLOGY

In this study, the Rapid Application Development (RAD) method is used for the development of the E-Audit system. This approach, recognized for its stability and extensive utilization, follows a well-defined sequence of four key phases: (i) user needs analysis, (ii) design, development, and enhancement, (iii) testing, and (iv) implementation.

3.1 User Needs Analysis

To comprehend the requisites of the E-Audit system, our team engaged in focused discussions involving auditors and information technology officers during the system development phase. The discussions were essential for deliberating additional functionalities needed for the internal audit system after presenting the prototype in a prior consulting project. This phase also sought to validate attributes identified in the previous prototype.

The requirements analysis phase, utilizing the Add and Quick technique, involved interviews with four internal audit department staff members, including the department head. This interview process significantly to increase the reliability and validity of the system prototype development by identifying important features necessary for the system prototype.

In addition to the interview sessions, the Add and Quick technique made use of an organization-provided form as the primary reference. This form is translated to become the main structure of the database and as a design for storing information using a data-driven model.

3.2 Design, Development and Improvement

In the system design and development phase, the Django framework, which is based on the Python programming language, was used. This Django framework has been widely used as a

development tool for today's RAD methods. The Django framework is integrated with the database management platform (DBMS) MongoDB as a database.

MongoDB platform is suitable for the development of new systems or existing systems. In order to enable this system to be achieved using a public network, the Heroku cloud application has been used. Heroku is a platform as a service (PaaS) that allows system developers to build, run, and operate applications entirely in the cloud.

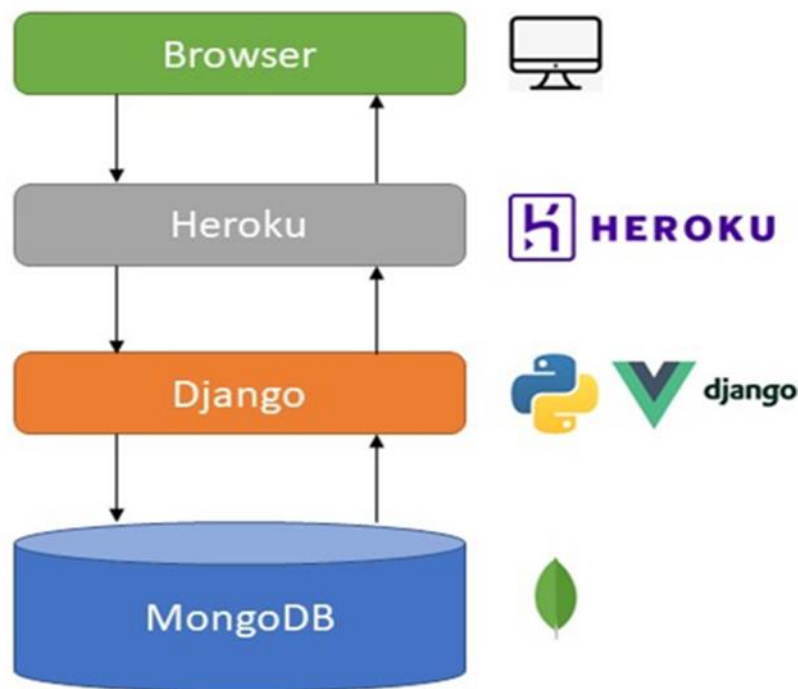


Figure 1: General Concept Diagram of E-Audit Development

This E-Audit system will be accessible by four users who will carry out different tasks. Setup users will carry out data preparation (setup) tasks, Audit Process will carry out auditing tasks, Management will carry out management-related tasks, and Admin will carry out system administration tasks. All these users will access and store the data located in the MongoDB database through the E-Audit system.

3.3 Testing

During the testing phase, five staff members actively engaged with the E-Audit system has been granted unrestricted access to all of the E-Audit system functions over a two-week period. As part of the evaluation process, these participants were furnished with a comprehensive questionnaire, conveniently administered through Google Forms. Impressively, all respondents conscientiously completed the questionnaire within the allocated two-week timeframe. The unanimous consensus among these participants was resoundingly positive, as they unequivocally expressed strong agreement in three key areas: first, the E-Audit System's capability to deliver satisfaction in its usage; second, its user-friendly interface and ease of operation; and finally, its demonstrable effectiveness in enhancing their efficiency in conducting audit tasks. This unanimous endorsement underscores the system's potential to meet user expectations and optimize the audit workflow.

3.4 Implementation

The E-Audit System has received official approval for implementation, signifying a significant milestone in its deployment. Notably, the auditors who have actively engaged with the system during the testing phase have conveyed their high level of satisfaction with its use. In fact, their positive experiences have led them to express an intent to share their endorsement with peers and friends in the field. Furthermore, their enthusiasm extends to recommending the E-Audit System to other organizations, underscoring its potential as a valuable tool in the realm of auditing. Currently, the system is undergoing a transition from its cloud-based server to the organization's dedicated server infrastructure, a step that reflects the commitment to integrating it seamlessly into the organization's operations and ensuring its long-term scalability and reliability. This progression marks an exciting phase in the system's journey towards full implementation and utilization within the organization and beyond.

4. CONCLUSION

In summary, this article elucidates the system development process of E-Audit employing the Rapid Application Development (RAD) methodology. This approach, recognized for its widespread usage, emphasizes prototype development and encourages swift feedback from users, ultimately reducing the time needed for system development. Given the distinctiveness of internal audit processes across various organizations, the insights gained from this system development process hold considerable value. It is essential to acknowledge that while every system developed using this method follows a similar phase of system development, the uniqueness lies in the distinct internal audit tasks specific to each organization. Notably, this development methodology heavily relies on user involvement, presenting a challenge during the E-Audit system development, particularly in acquiring timely user feedback due to the demanding job commitments of internal auditors.

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Board Attributes and CSR Disclosure of Shariah PLCs in Malaysia

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Abstract: *CSR disclosure has become a crucial problem, as indicated by a rising number of studies undertaken in both developed and developing nations. As such, this study aims to investigate the level of CSR disclosure and examine the impacts of corporate governance (CG) board attributes on CSR disclosure of Shariah PLCs in Malaysia. According to the empirical research, board size and Muslim directors are positively associated with CSR disclosure practices among Shariah PLCs in Malaysia, whereas board meetings are adversely associated with CSR disclosure. Furthermore, three of the six CG board attributes studied in this study, namely (i) board gender, (ii) board independence, and (iii) CEO duality, were not connected with the level of CSR disclosure among Shariah PLCs in Malaysia. According to the study, the level of CSR disclosure among Shariah PLCs in Malaysia is still low. The study adds to the existing literature by focusing on Shariah PLCs in Malaysia as a research context due to limited study on this subject. Future research can therefore examine the determinants and extent of CSR in Shariah and non-Shariah PLCs in Malaysia or by industry or compare Shariah PLCs to other Shariah PLCs in ASEAN countries; and employ other CG attributes.*

Keywords: CSR disclosure, CG board attributes, Shariah PLCs, Malaysia, Muslim directors

1. INTRODUCTION

The last few decades have witnessed an increased interest in corporate social responsibility (CSR). Prior studies showed that there is an increasing number of interest in CSR disclosure study both in academic studies and business practices (Hassan, 2013; Sekhon and Kathuria, 2019). CSR disclosure studies in developed countries are more advanced than in developing countries, and recent evidence suggests that there is a positive trend among developing countries in exploring the importance of CSR reporting (Orazalin, 2019). While in Malaysia, numerous studies on CSR reporting have been conducted, attracting academics to investigate the trend and the factors influencing it (Sadou *et al.*, 2017). However, most of the prior studies on CSR disclosure in Malaysia are focused on non-Shariah rather than Shariah PLCs (Aziz and Haron, 2021; Mazri *et al.*, 2018). Moreover, there is a need for further investigation on the issues of transparency and accountability among Shariah PLCs in Malaysia (Afifuddin and Siti-Nabiha, 2010; Mohd *et al.*, 2020).

While empirical studies indicate an increase in CSR disclosure in Malaysia (Ahmed Haji, 2013; Esa and Mohd Ghazali, 2012; Hamid, 2004; Lui *et al.*, 2021), CSR disclosure practices in Malaysia may be considered to be in their infancy, with low reporting rates (Ahmed Haji, 2013; Aziz and Haron, 2021; Lui *et al.*, 2021; Othman *et al.*, 2011; Thompson and Zakaria,

2004; Yang and Yaacob, 2012; Zainal *et al.*, 2013; Zainon *et al.*, 2014). According to Bhatia and Makkar (2019), numerous factors or determinants may influence the level of CSR reporting, including regulations, government interventions, CSR awareness, corporate governance (CG) and culture. Prior research has shown that CG mechanisms have a strong influence on CSR disclosure in both financial and non-financial firms (Ali *et al.*, 2017; Fahad and Rahman, 2020; Jo and Harjoto, 2011). However, there are few studies on exploring the link between CG board attributes and the level of CSR reporting of Shariah PLCs. Therefore, this study attempts to fill this research gap.

This study provides two contributions. First, this study will contribute to the existing evidence on the extent of CSR reporting in the Malaysia context, specifically for Shariah PLCs. Despite this, it has been established that the CSR reporting level of Shariah PLCs is relatively low (Ahmed Haji and Mohd Ghazali, 2013; Arsad *et al.*, 2014; Aziz and Haron, 2021; Othman and Thani, 2010; Ousama and Fatima, 2010b; Said *et al.*, 2018). Thus, this study contributes to the existing body of knowledge by examining the CSR disclosure practices in developing countries such as Malaysia, with a focus on Shariah PLCs. Second, this study adds to the CSR literature by investigating the impact of CG board attributes on the level of CSR reporting, specifically for Shariah PLCs in Malaysia. Few studies have been conducted to examine the relationship between CG and CSR disclosure of Shariah PLCs in Malaysia and the conclusions are conflicting (see, for examples, Alazzani *et al.*, 2019; Arsad *et al.*, 2020; Mazri *et al.*, 2018; Ousama and Fatima, 2010a). Thus, this study will further investigate the impacts of CG board attributes on the level of CSR disclosure among Shariah PLCs in Malaysia.

The rest of the paper is structured accordingly. Section 2 provides an overview of CSR practices in Malaysia. The literature review of related studies on CG board attributes and CSR disclosure is discussed in Section 3, as well as the formulation of hypotheses. Section 4 discusses the data and methodology used in the research. The findings and analyses are discussed in Section 5 and section 6 concludes the paper.

2. CSR REPORTING IN MALAYSIA

CSR became prominent in Malaysia in 2006, when former Prime Minister Tun Abdullah Ahmed Badawi announced that all PLCs would be required to disclose their CSR activities in the annual reports beginning with the fiscal year ended 31 December 2007 (Ho and Taylor, 2013; Yusoff and Adamu, 2016; Zahid *et al.*, 2020). The Prime Minister's intention was to encourage all the PLCs in Malaysia to take on greater social responsibility and make CSR a part of their business processes. As a result, Bursa Malaysia (BM) established the BM CSR framework, which includes four important components: (i) community, (ii) workplace, (iii) marketplace, and (iv) environment.

In addition, the launch of Silver Book in 2006 led to more social activities by Malaysian GLCs. According to Esa and Mohd Ghazali (2012) the Silver Book has had some positive effects in terms of encouraging GLCs to increase their CSR activities and thus disclose them in their annual reports. Moreover, the BM's Main Market Listing Requirements (BMMMLR) stated in item 29 of Appendix 9C of Chapter 9 Continuing Disclosure of the Listing Requirements highlighted that all PLCs in Malaysia are required to disclose corporate social responsibility in their annual report (Mamun *et al.*, 2017).

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

3.1. The Malaysian Code of Corporate Governance (MCCG)

CG was first introduced in Malaysia in 1998, following the 1997 Asian financial crisis, with the formation of the High Level Finance Committee (Hong and San, 2016; Zin *et al.*, 2020). The committee was formed to address CG issues and to boost investor confidence, which was at its lowest point at the time. As a result, the Malaysian Code on Corporate Governance (MCCG) was established in March 2000 with the goal of promoting and maintaining a strong CG culture among Malaysian PLCs (Janang *et al.*, 2020; Khay and San, 2015). The MCCG was revised in 2007 to strengthen boards of directors and audit committees by ensuring that their responsibilities are carried out effectively, and the Code was later superseded by the revised MCCG 2012, which was issued in 2012. The 2012 revision of the MCCG focuses on clarifying the board's role in providing leadership, enhancing board effectiveness through board composition strengthening, and reinforcing board independence (Lode and Noh, 2018; Zin *et al.*, 2020). In 2017, the new MCCG 2017 superseded the previous MCCG 2012 to further internationalize corporate governance culture (Baharudin and Marimuthu, 2019). Moreover, the new MCCG 2017 proposed two significant changes to board governance, including a requirement for at least 30% female representation on the board and detailed disclosure of director compensation on a named basis (Zin *et al.*, 2020).

Prior research has examined underlying factors affecting the level of CSR reporting using a variety of theories. According to Jamil *et al.* (2020), there are four popular theories in the debate on CG, which include agency theory, stewardship theory, stakeholder theory and resource dependency theory. All these theories relate to a focus on the different functions of a board. The agency theory emphasizes the board's monitoring mechanism, which is concerned about the conflict of interest between managers and shareholders (Jensen and Meckling, 1976). The stewardship theory is rooted in social psychology, which examines the leadership styles and behaviors of leaders (Donaldson and Davis, 1991). The stakeholder theory focuses on issues pertaining to stakeholders' interests, and thus views the board as a representative of stakeholders (Freeman, 1994). The resource dependency theory are likely to act as a link between a business and its external resources, reducing uncertainty through transparent and comprehensive CSR reporting, which is critical for sustainable development (Orazalin, 2019).

3.2. Board Size and CSR Disclosure

The size of the Board may affect the level of CSR disclosure and decision making. Kaymak and Bektas (2017) claimed that a higher number of directors in the board would improve the monitoring capabilities and indirectly affects both their transparency and disclosure activities. A large board can help gain expertise and advice on strategic options and can give shareholders more business performance information (Al-Matari, 2019; Uadiale, 2010). Prior studies showed that there is a positive relationship between the size of the board and CSR disclosure level (Abu Qa'dan and Suwaidan, 2019; Ahmed Haji, 2013; Esa and Mohd Ghazali, 2012; Rashid, 2018; Sadou *et al.*, 2017; Said *et al.*, 2009), while negative relationship between board size and the extent of CSR disclosure (Alhazaimah *et al.*, 2014; Kiliç *et al.*, 2015; Latif *et al.*, 2020; Zahid *et al.*, 2020). Based on agency theory, this study expects that larger board sizes will increase board-monitoring capabilities; as a result, this gives positive influences on disclosure practices among Shariah PLCs in Malaysia. The hypothesis is:

H1: Large board size has a positive association with the level of CSR disclosure.

3.3 Board Gender and CSR Disclosure

According to Hoang et al. (2018), they argued that board diversity as the main key from CG mechanisms which can challenge the executive management for stakeholder engagement. Nevertheless, board diversity can improve the effectiveness of board roles such as monitoring, services and strategic towards the integration of CSR into governance structure (Alshareef and Sandhu, 2015). Female boards are more sensitive to CSR issues and have a positive effect on charitable activities in comparison to male boards (Williams, 2003). Previous research has shown that board diversity can affect the level of CSR disclosure (see, for examples, Amran *et al.*, 2014; Guping *et al.*, 2020; Katmon *et al.*, 2019; Khan *et al.*, 2019; Rao and Tilt, 2016; Sundarasan *et al.*, 2016), while negative relationship between women director and the extent of CSR disclosure (Fahad and Rahman, 2020; Giannarakis, 2014; Ju Ahmad *et al.*, 2018; Latif *et al.*, 2020). According to resource dependency theory, this study anticipates that female directors will enhance the monitoring abilities of the board, thereby improving disclosure practices among Shariah PLCs in Malaysia. As a result, the following hypothesis is proposed:

H2: Companies with a higher percentage of female directors have a higher level of CSR disclosure.

3.4 CEO Duality and CSR Disclosure

CEO duality happens when the CEO of a company acts as chairman of the BODs. According to Gul and Leung (2004), firms with CEO duality are more likely to be associated with lower levels of disclosures, since the board is less likely to be useful in monitoring management and ensuring a higher level of transparency. Ju Ahmad *et al.* (2018) stated that a dual leadership structure would reduce the checks and balance and makes CEOs less accountable to all stakeholders. However, prior studies suggested that these two roles should be separated due to the reason of independence (Fahad and Rahman, 2020; Tuggle *et al.*, 2010) and increase shareholders' confidence (Khairiddine *et al.*, 2020; Mazri *et al.*, 2018), while (Al-janadi *et al.*, 2013; Garas and ElMassah, 2018; Jizi *et al.*, 2014) argued that CEO duality provides more information compared to the separation of the board. Furthermore, CEO duality improved the decision-making powers of the Chairman and had an effect on disclosures (Al-janadi *et al.*, 2013). As a result, based on agency theory, the hypothesis is:

H3: There is a positive relationship between CEO duality and the level of CSR disclosure.

3.5 Board Meetings and CSR Disclosure

Regular board meetings are important as a CG mechanism because they enable the directors to control the company effectively (Fahad and Rahman, 2020; Tuggle *et al.*, 2010). According to Yusoff et al. (2016), boards that meet more frequently are more involved in the firm's CSR and disclosure efforts. However, managers are under pressure to better fulfil their disclosure obligations when frequent meetings are held, and as a result, they are less likely to retain information (Khairiddine *et al.*, 2020). Puni and Anlesinya (2020) stated that the frequency of board meetings directly can impact company's performance. They claimed that

if the boards are given ample opportunity to evaluate and contribute to managerial action programs, policies, and strategies, they can effectively contribute to their financial performance. Prior studies found that the number of board meetings does not have a significant impact on the extent of CSR disclosure (Giannarakis, 2014; Lagasio and Cucari, 2019), while board meetings are positively influenced the extent of CSR disclosure (Alshbili *et al.*, 2019; Issa, 2017; Jizi *et al.*, 2014; Khairredine *et al.*, 2020; Yusoff *et al.*, 2016). Following the above arguments, we test the following hypothesis:

H4: There is a positive relationship between the frequency of board meetings and the level of CSR disclosure.

3.6 Board Independence and CSR Disclosure

Board independence refers to the number of independent non-executive directors (INEDs) on the board relative to the total number of directors (Abidin *et al.*, 2014). INED is more capable of monitoring management because it has no ties to the company (Sundarasan *et al.*, 2016). As a result, supervised boards are expected to be more efficient in carrying out their tasks and responsibilities in response to the needs of various stakeholders, and to be able to influence the company's compliance with disclosure requirements. According to agency theory, the need of INEDs on the board substantiated are important due to the separation between ownership and control, managers (given the opportunity) would tend to pursue their own goals at the expense of the shareholders (Jensen and Meckling, 1976). Most of the previous research on the impact of board independence on CSR reporting found a positive correlation (see, for examples, Che-Adam *et al.*, 2019; Gallego-Álvarez and Pucheta-Martínez, 2020; Garas and ElMassah, 2018; Habbash, 2016; Jo and Harjoto, 2011; Khan *et al.*, 2013), while no significant influence was recorded between the link of INEDs and CSR disclosure by (Abu Qa'dan and Suwaidan, 2019; Jamil *et al.*, 2020; Sundarasan *et al.*, 2016). Therefore, this study proposes the following hypothesis based on these arguments:

H5: There is a positive relationship between board independence and the level of CSR disclosure.

3.7 Muslim Directors and CSR Disclosure

The presence of Muslim director in the companies would show us how the companies are dealing with their transparency and accountability issues in disclosing the CSR information in the annual report. Baydoun and Willett (2000) mentioned that the concept of accountability in Islam in disclosing all information needed by the regulators could show their worship to Allah as a "Khalifah" and Islam. Moreover, Muslim directors can increase the reporting of information due to their excessive experience in Islamic concept including the approach on how to conduct the business activity in an ethical way (Anuar *et al.*, 2009). The existence of Islamic Capital Market (ICM) in Malaysia was purely to promote the Shariah-compliant investment and to enable Muslim or non-Muslim in understanding the nature of Shariah approved companies. According to stakeholder theory, Muslim directors may be aware of the company's social responsibility in terms of its "halal and haram" status and, as a result, demand that more information to be disclosed (Othman *et al.*, 2009). Prior studies revealed that Muslim directors are positively significant relationship with the greater of CSR information disclosed in the annual report (see, for examples, Abd-Mutalib *et al.*, 2017; Alazzani *et al.*, 2019; Haniffa and Cooke, 2002; Latif *et al.*, 2020), while Muslim directors leading an Islamic organization has not resulted in better CG practices and disclosing

information (Che-Adam *et al.*, 2019; Hassan and Christopher, 2005). Thus, this study proposes the following hypothesis based on these arguments:

H6: There is a positive relationship with the Muslim directors on the BOD and the extent of CSR disclosure.

4. DATA AND METHODOLOGY

4.1 Sample selection

This study aims to further investigate the extent of CSR disclosure and the impacts of CG board attributes on CSR disclosure of Shariah PLCs in Malaysia. The sample is taken from the Securities Commission of Malaysia (SCM) database which is approved by the Shariah Advisory Council (SAC) and listed on the Main Board of Bursa Malaysia. Shariah-compliant securities were launched in June 1997, with a total of 478 companies complying to Shariah requirements. This study spans from 2007 to 2017. This study selects 2007 as the beginning year since Bursa Malaysia implemented the CSR framework.

The number of Shariah PLCs listed on Bursa Malaysia varies due to the SAC approved screening process and conditions. As a result of the inconsistency of data and information required, this study will also include a screening process for selecting a sample of Shariah PLCs. Three criteria were used to select the sample in this study: (i) a Shariah PLC must be consistently listed in Shariah-compliant listing from 2007 to 2017 (Ramli and Haron, 2017); (ii) a Shariah PLC must be consistently listed on the Main Board of Bursa Malaysia from 2007 to 2017; and (iii) a Shariah PLC must be consistent in providing the annual report in the Bursa Malaysia website from 2007 to 2017. Due to the study's focus on Shariah PLCs from 2007 to 2017, only 175 Shariah PLCs met the study's criteria at the end of the sample selection process. The final sample of Shariah PLCs in Malaysia from 2007 to 2017 by industry type is shown in Table 1.

Table 1. Number of Shariah PLCs in Malaysia from 2007 to 2017 by type of industry

No.	Type of Industry	Number of Shariah PLCs
1	Industrial Products	51
2	Trading and Services	32
3	Consumer Products	31
4	Plantation	16
5	Property	21
6	Construction	16
7	Technology and Infrastructure	7
	Total	175

4.2 Research Model of the Study

The purpose of this study is to examine the effect of CG board attributes on the extent of CSR disclosure of Shariah PLCs in Malaysia. The independent variable of this study is the CG board attributes (board size, board gender, CEO duality, board meetings, board independence and Muslim directors), while the dependent variable is CSR disclosure index. Control variable for this study is firm characteristics. This study used firm characteristics as control variable, based on prior studies (Ahmed Haji, 2012; Ho and Taylor, 2013; Ju Ahmad *et al.*, 2017; Mamun *et al.*, 2017; Saleh *et al.*, 2011; Zahid *et al.*, 2020) This study employs

Generalized Methods of Moment (GMM) analysis in order to address the endogeneity issue (Haron, 2018). Table 2 shows the variables used for Model 1. The following describes the panel regression model:

$$CSRDi_{i,t} = \beta_0 CSRDi_{i,t(-1)} + \beta_1 BS_{i,t} + \beta_2 BG_{i,t} + \beta_3 CEOD_{i,t} + \beta_4 BM_{i,t} + \beta_5 BI_{i,t} + \beta_6 MD_{i,t} + \sum Controlled (Firm Characteristics)_{i,t} + \varepsilon$$

Table 2. The variables for Model 1

	Variables	Acronym	Definition
Dependent	Corporate Social Responsibility Disclosure index	CSRDi	Corporate Social Responsibility Disclosure index
Independent	Board size	BS	Total number of directors on the board
(CG board attributes)	Board gender	BG	The percentage of female directors on the board
	CEO duality	CEOD	Represent “1” if CEO is also Chairman of the board, “0” otherwise
	Board meetings	BM	The number of board meetings
	Board independence	BI	The percentage of independent non-executive directors on the board
	Muslim directors	MD	The percentage of Muslim directors on the board
Control	Firm size	FS	The natural logarithm of firm’s total asset
(Firm characteristics)	Firm age	FA	The natural logarithm of years since incorporated
	Firm leverage	FL	Ratio of total debt over total asset

5. FINDINGS AND ANALYSIS

5.1 Descriptive Statistics

Table 3 shows the descriptive statistics of all variables for Model 1 from 2007 to 2017. The mean value of the CSR disclosure quantity is 0.239, with a minimum and maximum value of 0 and 0.800, respectively. The standard deviation of CSR disclosure is 0.155. Based on the findings, it is proposed that the Shariah PLCs in Malaysia were less likely in revealing their CSR activities in the annual report. The findings of the previous study are consistent with these results (see, for examples, Ahmed Haji, 2013; Othman *et al.*, 2011; Sadou *et al.*, 2017; Thompson and Zakaria, 2004; Yang and Yaacob, 2012; Zainal *et al.*, 2013; Zainon *et al.*, 2014). From these results, it shows that the level of CSR disclosure of Shariah PLCs in Malaysia is low and not meet the researcher expectations.

Table 3. Descriptive statistics of variables for Model 1 from 2007 to 2017

	Variable	Observations	Mean	Standard Deviation	Min	Max
Dependent Variable	CSRDi	1925	0.239	0.155	0	0.800
Corporate Governance BOD Attributes	BS	1925	7.665	1.796	4	15
	BG	1925	9.098	11.063	0	60
	CEOD	1925	0.0935	0.291	0	1
	BM	1925	5.412	2.039	2	27
	BI	1925	44.326	11.906	0	100
Control Variables	MD	1925	36.154	29.37	0	100
	FL	1925	0.398	0.532	0	8.944
	FS	1925	2.864	0.587	0.301	4.580
	FA	1925	14.33	5.897	1	44

Notes: *CSRDi* corporate social responsibility disclosure index, *BS* board size, *BG* board gender, *CEOD* CEO duality, *BM* board meetings, *BI* board independence, *MD* Muslim directors, *FL* firm leverage, *FS* firm size, and *FA* firm age

Furthermore, the descriptive statistics for CG board attributes consist of board size, board gender, CEO duality, board meetings, board independence and Muslim directors. Board size (BS) has a minimum value of 4 and a maximum value of 15; it shows the lowest and the highest numbers of members in the firm. The mean value for the board size of the sample is 7.665. The highest percentage of female directors (BG) on the board is 60% of the total board size, with a mean value of 9.098 of the sample. Board meetings (BM) have a minimum value of 2 and a maximum value of 27; its mean value is 5.412. CEO duality, board independence and Muslim directors have a minimum value of 0, and the mean values are 0.0935, 44.326 and 36.154, respectively. The maximum percentage of board independence and Muslim directors on the board from the sample is 100%.

There are three control variables used in this study, which are firm leverage, firm size, and firm age for Model 1. Firm leverage (FL) has a mean value of 0.398 and a minimum value of 0. The minimum value of firm size is 0.301, the maximum value of firm size is 4.580, and its mean is 2.864. Firm age has a minimum value of 1, whereas the maximum value is 44. For 11 years of observations, the average age of Shariah PLCs listed in Bursa Malaysia is 14.33 years.

5.2 Regression Results

Table 4 shows the findings of the analysis. From Table 4, the results showed that the board size is statistically significant at $p < 0.01$, and there is a direct relationship between the board size and CSR disclosure. Therefore, H1 is accepted. This result is consistent with the results evidenced in the prior studies (Akhtaruddin *et al.*, 2009; Jizi *et al.*, 2014; Mazri *et al.*, 2018). It can be concluded that companies with a larger board size actively involving in CSR activities and indirectly affect the extent of CSR disclosure. According to Albitar (2015), larger boards are more effective for organisational success as they have a wide variety of combined knowledge, skills that can help them make better decisions and increase the CSR score indirectly.

Table 4. Results of panel data with two-step System GMM testing between CG board attributes and CSR disclosure

Variable	Coefficient	t-Statistic	Sig.	VIF
CSRD (-1)	0.4024	6.40	0.000***	
Board Size	0.1672	2.70	0.008***	1.53
Board Gender	0.0021	0.21	0.838	1.08
Board Independence	7.2098	1.23	0.222	1.09
Board Meetings	-0.1226	-2.25	0.025**	1.27
CEO Duality	0.0311	0.54	0.593	1.73
Muslim Directors	0.0010	2.58	0.011**	1.62
Firm Size	0.0306	2.61	0.010**	1.19
Firm Age	0.0083	5.63	0.000***	1.18
Firm Leverage	0.0038	0.54	0.593	1.07
AR(1) <i>m</i> -statistics			0.000	
AR(2) <i>m</i> -statistics			0.390	
<i>J</i> -statistics			0.146	

*** p<0.01, ** p<0.05, * p<0.1

The analysis also indicates that there is a significant and positive correlation between Muslim directors and the CSR disclosure practices among Shariah PLCs in Malaysia, the level of significance is 0.05. The outcome is consistent with Abd-Mutalib *et al.* (2017); and Alazzani *et al.* (2017) empirical studies which have all confirmed that Muslim directors have a positive impact on CSR reporting. Hooy and Ali (2017) claimed that Muslim directors are more concerned about social responsibility, as Islam emphasises the relationship between Allah and man; and Allah and the nature. Therefore, the hypothesis (H6) that there is a positive relationship with the Muslim directors on the BOD and CSR disclosure is accepted.

The study also reveals that there is a negative and significant relationship between board meetings and CSR disclosure. The level of significance is $p < 0.01$. The findings contradict with Allegrini and Greco (2013), who indicated that the high participation of a number of directors at the meeting would indirectly increase accuracy and more efficient in monitoring the companies activities. However, prior studies showed that the results are mixed. Allegrini and Greco (2013); and Rehman *et al.* (2017) found a positively significant relationship between the number of the board meeting and CSR reporting, while Giannarakis (2014) stated that the number of board meetings does not have a significant effect on the CSR reporting. Therefore, the hypothesis (H4) mentioned that there is a positive relationship between board meetings and CSR reporting quantity can be rejected.

The results also showed that the female director is not associate with the extent of CSR disclosure of Shariah PLCs in Malaysia. This result was somewhat unexpected, as several previous studies have linked female directors to attitudes that support the CSR activities and positively affected the CSR reporting. This result contradicts the studies by Alazzani *et al.* (2017); Katmon *et al.* (2019); and Rao and Tilt (2016). The insignificant outcome may also be attributed to cultural influence. Women in positions of authority are not regarded favourably in a country like Malaysia. As such, while women are thought to be better than men in ethical conduct, gender bias in leadership roles prevents them from producing a better CSR reporting (Ju Ahmad *et al.*, 2018). Therefore, the hypothesis (H2) is rejected.

Nevertheless, there are two CG board attributes in this study which are not associated with the CSR disclosure, which are CEO duality and board independence. This is consistent with

the statement by Ho and Wong (2001) stated that CG systems can be substitutive and may not impact disclosure scores. Therefore, this study rejects H3 and H5. According to Hashim and Devi (2008) and Tuggle *et al.* (2010), these two roles should be separated in order to improve disclosure practices. It is inconsistent with the agency theory assumptions where CEO duality is considered counterproductive because the agent can follow their self-interest at the owners' expense. Yet, this finding is contradictory with Jizi *et al.* (2014), who stated that the role duality could be improved the CSR reporting whether the positive relationship is dictated by the competitiveness of the related products, labour and capital markets in the selected field, thereby signalling the efficacy of a self-regulating CG structure, or whether it is a sign of managerial risk aversion. The results also exposed that there is no significant relationship between board independence and CSR disclosure. This results also contradict with Sundarasan *et al.* (2016) findings, who mentioned that board independence could indirectly improve the CSR reporting and increases the CSR awareness.

From the above analysis, it also revealed that the two control variables have a positive and significant association with the extent of CSR disclosure, which are the firm size and firm age. The level of significance for the three control variables are $p < 0.05$ and $p < 0.01$, respectively. Nevertheless, firm leverage is not significantly correlated with the extent of CSR disclosure. This is in line with similar findings by Rosli *et al.* (2016).

5.3 Robustness Testing

The robustness test is used to assess whether the CSR disclosure levels were significantly different from the previous section results. For model 1, this study applied two-step System GMM with a lagged dependent variable (1.CSRDi), to seek the relationship between CG attributes and CSR disclosure. Cheng and Bang (2019) emphasised that researchers would be risky to use the GMM estimate by disclosing comprehensive model specifications. Therefore, three tests will be adapted in this study to check the robustness of the lagged DV (CSRDi) which are Pooled OLS, fixed-effects and difference GMM one-step as suggested by Cheng and Bang (2019); and Al-Malkawi and Javaid (2018). The autoregressive term (1.CSRDi) coefficients calculated using GMM estimators should be between the upward-biased Pooled OLS autoregressive coefficient and the downward-biased fixed-effect estimator autoregressive coefficient. This is assumed to be consistent with GMM estimates. The results of all tests used for Model 1 are provided in Table 5.

Table 5. Robustness checking of lagged dependent variable

Variable	Pooled OLS	Fixed-Effects	DIFF GMM	SYS GMM
1.CSRDi	0.835*** (0.0161)	0.402*** (0.0461)	0.407*** (0.1066)	0.414*** (0.0551)
Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$				

There are some distinctive theoretical consequences of the findings outlined in this section, either in support of established hypotheses or in expanding the reach of previous works and providing additional ties within the existing literature. The analysis provides strong support for the agency theory argument, which suggests that companies with a strong CG board attribute (e.g., larger board size) are more likely to disclose CSR information to the stakeholder (Albitar, 2015). In order to increase the CSR disclosure score, the Shariah PLCs may have to increase their board size. The board independence is found to be not statistically significant with the level of CSR reporting. Thus, this study cannot confirm that stakeholders

have the power to control how companies handle themselves and eventually influence their 'licence to operate'. The outcome is inconsistent with the agency theory due to the low level of CSR reporting. Companies operating in society, such as Shariah companies, have a social contract where they promise to carry out different socially beneficial acts in exchange for the recognition of their goals, other incentives and their overall survival (Guthrie and Parker, 1989). Due to these matters, it is confirmed that there is some Shariah PLCs still ignoring the CSR issues.

4. CONCLUSIONS

The objective of this study is to measure the level of CSR disclosure and to examine the impacts of CG board attributes on the CSR disclosure of Shariah PLCs in Malaysia. The main source in measuring the level of CSR disclosure of Shariah PLCs is the annual report. The results showed that the level of CSR reporting among Shariah PLCs in Malaysia still at a low level which is 23.9% (11 years observations). The Shariah companies in Malaysia are still not aware of the importance of disclosing CSR information, and it is revealed that the transparency issues still exist among them. Supposedly, Shariah companies are expected to be more socially responsible and disclose all CSR information in the annual report due to its "Shariah" status. It will show the stakeholders that Shariah companies are more accountable to society than non-Shariah companies, indicating transparency and as part of their religious compliance. Therefore, Shariah PLCs are required to reveal all CSR details due to their duty to comply with the Islamic ethical norms (Platonova *et al.*, 2018)

Moreover, it also suggests that the Shariah PLCs in Malaysia have overlooked and are not adopting the CSR reporting standard, which is regulated by Bursa Malaysia. According to the BM's Main Market Listing Requirements (BMMMLR) in item no. 29, Appendix 9C of Chapter 9 Continuing Disclosure of the Listing Requirements stated that all PLCs in Malaysia must disclose corporate social activities in the annual report (Bursa Malaysia, 2018). BM has demonstrated its efforts and commits in promoting better transparency through information disclosure via CSR reporting. Nevertheless, all Shariah PLCs in Malaysia are expected to be more transparent, accountable, and to adhere to Islamic ethical norms. The researchers agreed that compliance with all regulatory requirements would be a significant achievement for Shariah PLCs in comparison to non-Shariah PLCs.

The empirical analysis indicates that the board size is positively significant with CSR disclosure practices among Shariah PLCs in Malaysia. This result is consistent with the results evidenced in the prior studies (Akhtaruddin *et al.*, 2009; Jizi *et al.*, 2014; Mazri *et al.*, 2018), which also found a positive association between board size and the extent of CSR reporting in their study. It can be concluded that larger boards are more effective for organisational success as they have a wide variety of combined knowledge, skills that can help them make better decisions and increase the CSR score indirectly as stated by Albitar (2015). The study also shows that there is a significant and positive connection between Muslim directors and CSR disclosure practise among Shariah PLCs in Malaysia. Muslim directors are more concerned about social responsibility, as Islam emphasises the relationship between Allah and man; and Allah and nature (Hooy and Ali, 2017). The study also exposes that there is a negative and significant relationship between board meetings and CSR reporting. According to Ju Ahmad *et al.* (2017), having a high number of board meetings detracts from a company's value, and she recommends keeping meeting frequency moderately low while maintaining effectiveness. Moreover, three out of six CG board attributes used in this study were not associated with the level of CSR disclosure among

Shariah PLCs in Malaysia which are: (i) board gender; (ii) board independence; and (iii) CEO duality. This is consistent with the statement by Ho and Wong (2001) stated that CG systems can be substitutive and may not impact disclosure scores.

This current study is restricted only to Shariah PLCs; future studies can therefore explore the determinants and the comparison of the extent of CSR reporting between Shariah and non-Shariah PLCs in Malaysia or by type of industry or comparison between Shariah PLCs and other Shariah PLCs from ASEAN countries (Indonesia, Singapore, Brunei Darussalam, Thailand, Cambodia or Bangladesh); or examine the impact of other CG attributes on the CSR disclosure.

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Business Survival Challenges and Digitalization Opportunities for Micro, Small, and Medium-sized Enterprises (MSMEs) in Malaysia

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Abstract: *Micro, small, and medium-sized enterprises (MSMEs) in Malaysia have faced challenges during and after the COVID-19 pandemic. This paper explores the survival challenges encountered by MSMEs in Malaysia and the opportunities of using digitalization as one of the strategies to overcome these challenges that have emerged in the post-pandemic era. It highlights the importance of understanding the specific context of Malaysian MSMEs and the resilience demonstrated by these businesses. In addition, it identifies the transformative potential of digitalization in enabling the MSMEs recovery and future growth. It is important to create the awareness and encourage micro and SME entrepreneurs in expanding their business outreach locally and globally. It is also significant as it would inspire more entrepreneurs, to be relevant, competitive and major contributor to the Malaysian digital economy. Consequently, it will help in narrowing and in turn eliminating the digital divide between regions in Malaysia. Therefore, it is significant to further understand from the perspective of micro and small business entrepreneurs, their readiness and skills related to transformation of digital business that are needed by them.*

Keywords: Business Digitalization, Business Survival, Digital Business, Micro, Small and Medium Enterprises (MSMEs)

1. INTRODUCTION

The COVID-19 pandemic has had a profound impact on businesses worldwide, leading to economic disruptions and challenges across various industries. According to the Ministry of Entrepreneur and Cooperatives Development (MECD), an estimated of 580,000 businesses under micro, small and medium enterprises (MSMEs) face business failures due to the COVID-19 pandemic (Mohamad, 2021). Many businesses could not operate physically as shops and restaurants had to adhere to strict restrictions of the Malaysian Government movement control order (MCO) to prevent the spread of the virus. Although Malaysia is announced to shift move from the COVID-19 pandemic into the endemic phase, in which more sectors are allowed to reopen, most businesses in particular micro and small entrepreneurs are still struggling to survive due the impact of the prolonged business disruption since COVID-19 outbreak was announced as a global pandemic. The challenges and burden of the pandemic are critical as they could not operate their business in the normal way they always did. The businesses still need to adapt and change their business approach to ensure their survival, rebuild and move on to find a better way to survive during the new endemic phase.

Understanding the significant portion of MSMEs to Malaysia's economy, this paper aims to explore on the survival challenges faced by MSMEs in Malaysia and explores the digitalization opportunities that have emerged in the outcome.

2. BUSINESS SURVIVAL CHALLENGES

2.1. Survival Challenges

MSMEs in Malaysia encountered various survival challenges during the pandemic, among others are disrupted supply chains, financial constraints, cash flow issues, lower market demand and consumer behavior shifts. Moreover, the MSMEs have problems of unskilled labour, reluctant to attend training, lack of facilities and infrastructure and low networking with large firms.

MSMEs faced disruptions in their supply chains due to restrictions and disruptions in transportation and logistics. In addition, the businesses also have obstacles obtaining raw material in terms of limited access to raw materials, delays in production, and difficulties in fulfilling orders (Mohamad et al, 2021). These situations have posed significant challenges for MSMEs.

According to Mohamad et al. (2021) the MSMEs faced with capital and financing issues, financial management problem, rising cost of running business. The economic downturn during the pandemic had strained the financial resources of MSMEs. This happened when the businesses' revenue declined and at the same time they need to face with the increased operational costs, and difficulties in accessing capital. As a consequence, it impacted the cash flow of MSMEs, making it challenging to meet financial obligations.

Other than that, MSMEs in Malaysia have problems with limited market demand (Mohamad et al., 2021). This is caused by the changing consumer behavior and reduced purchasing power that affected market demand for MSMEs products and services. MSMEs had to adapt to evolving customer preferences, seek new market segments, and develop innovative approaches to meet changing needs.

Due to the survival challenges, MSMEs need to have support and strategies for them survive in their businesses. For example, MSMEs entrepreneurs can utilize the initiatives and programs provided by the government agencies to adapt, survive and enable them to move forward. It is also seen as a good opportunity for a transformation into online or digital business as a way forward for the MSMEs entrepreneurs to recover and thrive in the business.

2.2. Survival Strategies for MSMEs

MSMEs in Malaysia can employ various strategies to overcome the challenges. In order to ensure the business survival, MSMEs should focus on reevaluating and adapting their business models to cater to new market conditions. This involved diversifying product offerings, exploring new distribution channels, and establishing strategic partnerships to enhance resilience and sustainability.

Apart from that, effective financial management and accessing government support programs also play a crucial role in SME survival. MSMEs may require assistance through government grants, loans, and incentives, while implementing cost optimization measures and improving

financial planning and control. Previous literature review studied the impact of micro scheme on entrepreneurship development from descriptive and inferential statistical analysis of quantitative research (Manaf, 2017; Mustapa et al., 2018). Among of the government agencies that provide financial support to MSMEs are TEKUN Nasional, Majlis Amanah Rakyat (MARA), Muda Agricultural Development Authority (MADA), Agriculture Department and SME Corp.

TEKUN Nasional for instance, has provided Skim Pembiayaan Pemulihan Perniagaan Mikro (CBRM), Skim Pembiayaan Informal (SPIN), Skim Pembiayaan TEKUN Mobilepreneur, deferment of TEKUN Nasional financing payment for 6 months and restructuring monthly payment instalments as initiatives to support MSMEs in Malaysia (Ahmad, 2021). Up to March 2021, TEKUN has approved financial credit amounting RM8.5 million through the Informal Financing Scheme (SPIN), involving 1,345 applicants nationwide (Bernama, 2021). In the context of the northern state of Malaysia, our preliminary fact-finding revealed that a total of 392 entrepreneurs have received financial credit under Skim Pembiayaan Pemulihan Perniagaan Mikro (CBRM) and Skim Pembiayaan Informal (SPIN) in Perlis. In addition, TEKUN Nasional Perlis has funded a total amount of RM 3,655,000, to 245 entrepreneurs in the state from January until August 2021.

MSMEs should also recognize the importance of digital transformation and leverage technology to adapt their operations. This includes embracing e-commerce, adopting digital marketing strategies, and utilizing digital tools for remote work, communication, and customer engagement. Apart from the financing scheme offered, TEKUN Nasional also cooperates with other agencies to provide on-going workshop programs. Among of the programs conducted are workshops on basic entrepreneurship, finance management, digital business and other program related to entrepreneurship (TEKUN Nasional, 2021).

3. DIGITALIZATION OPPORTUNITIES

In relation to the situation, Malaysian government agencies has taken proactive steps on providing financial support, training, and guidance to entrepreneurs, including micro and informal businesses, to embrace digitalization opportunities and enhance their digital capabilities. By promoting digital transformation, these initiatives aim to enable businesses to adapt, grow, and remain competitive in the post-pandemic landscape.

The COVID-19 epidemic creates opportunities to move forward for digital entrepreneurs as well as for others to emulate successful digital entrepreneurs. After COVID-19, doing online cross-border business transactions becomes a common practice. With the development of information technology for communication and dependable financial systems, small businesses can anticipate to conduct international commerce more frequently.

The pandemic has accelerated the need for digitalization among MSMEs in Malaysia, leading to the emergence of various opportunities such as e-commerce, online platforms, digital marketing and social media engagement (Adam et al., 2021). Besides, the growth of e-commerce presents MSMEs with opportunities to expand their market reach, diversify revenue streams, and reduce dependence on physical stores. Adopting online platforms and digital marketplaces enables MSMEs to reach a wider customer base and enhance competitiveness (Basaruddin, 2019).

Digital marketing strategies, including social media engagement and content marketing, allow MSMEs to build brand visibility, engage with customers, and drive sales. Leveraging social media platforms can enhance MSMEs' online presence and facilitate direct customer interactions.

Nevertheless, this would create a digital gap within regions in Malaysia if the response to digitalization is not handled appropriately. Such situations would create new issues that need to be overcome by micro and small business entrepreneurs, among others, do they willingly and ready to change? More importantly, the issue on how do entrepreneurs adapt online or digital technologies to suit with their current business as an initiative to move forward and thrive?

Consequently, micro and small business entrepreneurs need to make the right and quick decision, especially to be efficient in ensuring that their businesses are generating the targeted income and future projections on what will happen in the next coming years to come. It includes making full use of the digital economy opportunity in Malaysia and even in the world as a stepping stone to continue to survive and succeed. Thus, entrepreneurs need to think about how to diversify their business as well as expand and shift the approach to reach customers through digital business platforms (Bernama, 2021).

According to the Malaysia Digital Economy Blueprint (2021), individuals, businesses, and government are all part of the digital economy, which is defined as economic and social activity involving the development and use of digital technology. It promotes the relevance of the digital economy in ensuring economic sustainability through the use of the internet and technological innovation. Therefore, business including micro and small entrepreneurs could embrace in online or digital business and make use of the opportunity of business digital transformation to remain relevant, competitive and survive.

4. CONCLUSION

In summary, this paper highlights the importance of survival strategies and digitalization opportunities for MSMEs in Malaysia. It underlines the significance of adaptation, financial support, and collaborative networks in MSME survival. Furthermore, it emphasizes the transformative potential of digital technologies, such as e-commerce, digital payment solutions, and data analytics, in enabling MSMEs in.

In addition, it is also essential to recognize how the role of Malaysian government agency is important and effective in helping the business. By understanding the impact and effectiveness, a well-structured program can be developed to provide entrepreneurs with the essential and relevant skills, as well as to cultivate positive attitude and mindset in establishing new business initiatives.

It is recommended that more future studies be carried out to provide a first-hand experience and evidence from the case of Malaysian entrepreneurs to understand the challenges for business survival and recovery. This is to help identify the strategies in addressing the challenges so that further recommendation can be taken to resolve the problem. It is important not only to help MSMEs survival but also to ensure they would be able to reimburse the financial commitment on time.

Micro and small business entrepreneurs will also benefit from the research on how further initiative and efforts could be implemented in adopting or transforming into online and digital business. Therefore, it is significant to further understand from the perspective of micro and small business entrepreneurs, their readiness and skills related to transformation of digital business that are needed by them.

Furthermore, it is important to create the awareness and encourage MSME entrepreneurs in expanding their business outreach locally and even to the global level. It is significant as it would inspire more entrepreneurs, to be relevant, competitive and major contributor to the Malaysian digital economy. Consequently, it will help in narrowing and in turn eliminating the digital divide between regions in Malaysia.

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Improving Learner's Understanding and Engagement Via Hands-On Learning Approach

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Abstract: *The hands-on learning approach is an effective method for improving learners' understanding and engagement. It involves active participation and experiential learning, allowing learners to directly interact with materials, objects, or real-life situations. Indirectly, learners gain a deeper understanding of a subject when could actively engage with it. Few hands-on learning approaches such as integrating technology in manipulating objects, solving problems, or participating in immersive experiences could develop critical thinking skills, problem-solving abilities, and a more comprehensive understanding of the topic. Indeed, this approach is particularly effective in subjects such as science, technology, engineering, and mathematics (STEM), where hands-on experimentation and problem-solving are integral to the learning process. However, incorporating interactive activities and real-world connections could also be applied to other disciplines, including social sciences, arts, and humanities. Hence, the objective of this study is: (i) to know how the acceptance of a hands-on approach in a programming course (Accounting Programming Package, BKAS3143) is; and (ii) to get ideas on the improvements expected in the course. The qualitative approach study is applied to 31 learners of the BKAS3143 course in the first semester of session 2022/2023 (A221). Overall, the hands-on learning approach promotes learner engagement, motivation, and retention of knowledge by encouraging active participation, exploration, and reflection. It supports the development of practical skills, critical thinking, and deeper conceptual understanding, making the learning experience more meaningful and applicable to real-life situations. Undeniable, is the balance between hands-on activities and other instructional approaches to ensure a comprehensive learning experience. The combination of hands-on activities, theoretical instruction, and multimedia resources can create a dynamic and engaging learning environment for learners. This study contributes not only to the body of knowledge but also practically could improve the course of the BKAS3143 learning approach in the future semester.*

Keywords: Understanding, Engagement, Hands-on Learning, Motivation, Reflection

1. INTRODUCTION

Learners' understanding and engagement refer to the cognitive processes and active involvement of learners in the educational process. It involves how learners comprehend and make sense of the information presented to them and their level of interest, motivation, and participation in learning activities. Understanding and engagement are crucial factors in effective learning, as both elements determine the depth of knowledge acquisition and the overall learning outcomes. Indeed, when learners have a clear understanding of the subject

matter, they are better able to connect new information to their existing knowledge and make meaningful connections. Understanding involves more than just memorizing facts or procedures; it requires comprehension, analysis, synthesis, and evaluation of concepts. It enables learners to apply their knowledge to real-world situations and solve problems effectively.

Engagement, on the other hand, refers to the level of involvement and active participation of learners in the learning process (Seibert, 2021). Engaged learners are motivated, attentive, and focused on the task at hand. They exhibit curiosity, ask questions, seek additional information, and take ownership of their learning. Engagement could be fostered through various strategies such as interactive and hands-on activities, collaborative learning, meaningful discussions, and the use of technology.

Hence, when learners are both understanding and engaged, they become active participants in their own learning journey. They are more likely to be motivated to learn, develop critical thinking skills, and retain information for longer periods. Additionally, learners who are actively engaged in the learning process are more likely to develop a positive attitude toward learning and develop a lifelong love for knowledge acquisition.

Undeniably, educators play a vital role in promoting learner understanding and engagement. The learning environment needs to be created in such a way as a supportive learning setting that encourages questioning, exploration, and active participation. This could be achieved through differentiated instruction, using diverse instructional strategies, providing timely feedback, and incorporating students' interests and experiences into the learning process. The technology could also be leveraged to enhance understanding and engagement by providing interactive and immersive learning experiences.

Learner understanding and engagement are essential components of effective learning. Learners who comprehend the subject matter and actively participate in the learning process are more likely to achieve deep learning outcomes, develop critical thinking skills, and become lifelong learners. Educators should strive to create an environment that nurtures understanding and fosters active engagement to maximize the learning potential of every student. In line with that, this study tried to explore the teaching and learning process via a hands-on approach: (i) to know how the acceptance of a hands-on approach in a programming course (Accounting Programming Package, BKAS3143) is; and (ii) to get ideas on the improvements expected in the course. The qualitative approach study is applied to 31 learners of the BKAS3143 course in the first semester of session 2022/2023 (A221).

2. LITERATURE REVIEW

Understanding is a fundamental aspect of the learning process, and numerous studies have explored the factors influencing learners' understanding in various educational contexts. Research consistently shows that learners' prior knowledge plays a crucial role in their understanding of new information. Students who possess relevant prior knowledge in a particular domain are better equipped to comprehend and integrate new concepts, make connections, and solve problems effectively. Understanding is often facilitated by the development of conceptual frameworks or mental models. These frameworks help learners organize and structure their knowledge, enabling them to grasp complex ideas and apply them in different contexts. Studies emphasize the importance of explicitly teaching and reinforcing conceptual frameworks to enhance understanding. Indeed, metacognitive

strategies, such as self-monitoring, self-regulation, and reflection, are essential for learners to assess their understanding and adjustment. Learners who engage in metacognitive processes are more capable of identifying knowledge gaps, seeking clarification, and actively seeking additional information, leading to deeper understanding.

Indisputably, various instructional approaches can promote learner understanding. For example, active learning strategies, such as problem-solving, inquiry-based learning, and hands-on activities, have been found to enhance comprehension and retention of knowledge. Additionally, scaffolding techniques, where teachers provide guidance and support, help learners develop a solid foundation of understanding before gradually releasing responsibility.

The learning environment and social interactions also impact learner understanding. Collaborative learning experiences, where students engage in discussions, share perspectives, and negotiate meaning, can deepen understanding through the exchange of ideas (Gao, Jiang, & Tang, 2020; Sun & Rueda, 2012; Alebaikan & Troudi, 2010; Ma'arop & Embi, 2016). Furthermore, creating a supportive and inclusive classroom climate encourages learners to ask questions, express their thoughts, and seek clarification, fostering a sense of belonging and engagement. Despite the learning process, the assessment practices that go beyond memorization and routine recall could promote learner understanding too. Assessments that require learners to apply their knowledge, analyze information, and solve authentic problems provide valuable insights into their understanding and guide instructional decisions.

2.1 BKAS3143 Accounting Programming Package

This course is an introductory programming course intended for students without prior computer programming experience. The Accounting Programming Package course is a compulsory course for a Bachelor of Accounting (Information System). This course, together with the other two courses namely Accounting Systems Analysis; and Design and Database Management Systems are fundamentals in the area of information systems, particularly Accounting Information Systems.

Throughout the course, students are introduced to fundamentals of programming including program algorithms, variables and constants, decision and condition, and repetition, to name a few. Also, students are expected to apply them in developing business and accounting applications as part of the course's assessment. In addition, students are exposed to database programming using PHP and MySQL databases. Students are required to develop business and accounting-related systems as their group assignment. All applications and systems are developed using NetBeans IDE, an integrated development environment for web-based applications. Overall, this course offers students with creative problem-solving activities which include designing, implementing, and testing applications particularly business and accounting-related applications.

This course underlines four learning outcomes where students are expected to have the ability to: (i) describe the history of early computing and basics of programming concepts; (ii) demonstrate fundamental programming skills to solve business information system problems; (iii) apply appropriate programming functions in managing the database; and (iv) generate business reports from the developed system using appropriate tools. With regards to assessment, the course's assessment is divided into two components namely coursework and final year exam which both carry fifty percent of marks respectively. The coursework

comprises three sub-components which include quizzes (10%), individual assignments (20%) as well as group projects (20%).

2.2 Implementation of Hands-on Approach

The hands-on approach was adopted since the course is technical in nature and all students that enrolled do not have prior programming experience. Additionally, the challenge to create and maintain interest throughout the semester requires this type of engaging approach. This course requires students to spend a long time in front of a computer, and do trial and error, in order to complete the assignments and projects in particular. If they are unable to understand the concepts and acquire sufficient programming skills during the class, the students might lose interest in the course. The implementation of the hands-on approach for the course according to the topic is presented below:

Topic	Hands-on Approach
1.0 Introduction to Programming Accountants and Systems Development Phases in software development life cycle Algorithm: Pseudocode and flowchart	Students were given case scenarios to analyze the problem and design the solution using either pseudocode or flowchart.
2.0 Programming Software Components of a programming software environment Building the Interface Multiple forms Procedures / Functions Input Validation and Exception Handling	Students were introduced to the NetBeans IDE. They were guided on the usage of all the important features in the software. Students were taught the PHP codes and were guided to write their very first program. Explanations on each line of codes were given soon after they successfully completed the exercise.
3.0 Variables, Constant & Calculations Data Formatting	
4.0 Decisions and Conditions If/ Then/ Else Selection Structure Nested Control Structure	
5.0 Repetitions For/ Next Repetition Structure Do/ Loop While and Until Repetition Structure	
6.0 Sub Procedures and Function Procedures Form Modules, Sub Procedures, and Function Procedures	Students were given questions/problems where they have to apply all concepts listed in the respective topics. Sufficient assistance was given to students so that they are able to complete the exercise. Explanations on each line of codes were given soon after they successfully run the application.
7.0 Arrays Sorting and Searching in Arrays	
8.0 Database Management Creating the database files Database-file concepts Database manipulation using structured query language	

3. METHODOLOGY

This study is basically a course reflection concept of study. It is a qualitative study where the unit of analysis is an individual learner who registered for the BKAS3143 Accounting Programming Package course. A total of 31 students who enrolled for this course were chosen due to their experience in concepts as well as technical types of knowledge. The link to the survey questions which are open-ended questions was posted in Online Learning on students' reflections on the class conducted for the semester (i.e., semester one session 2022/2023).

The focus of this study is to know the level of achievement among learners of the Accounting Programming Package course in the first semester of session 2022/2023 (A221 semester). Upon completion of the course, learners are expected to possess the ability to: (i) describe the history of early computing and basics of programming concepts; (ii) demonstrate fundamental programming skills to solve business information system problems; (iii) apply appropriate programming functions in managing the database; and (iv) generate business reports from the developed system using appropriate tools. Generally, via the practice of a hands-on learning approach, learners are expected to gain accounting programming knowledge and be able to at least do the assessment project.

The reflections collected from the 31 learners are then analyzed via thematic analysis. The analysis is expected to highlight the theme created from the survey response and reflect the learners' understanding of the subject matter via a hands-on approach. In answering the two objectives of this study, a few questions were put forward to the learners of the BKAS3143 Accounting Programming Package course. The questions were "What did I actually achieve while attending this course?"; "How have I developed my knowledge and skills?"; "What are your recommendations for a possible improvement?"; and "In what way did this course help me in my future learning and career?".

4. FINDINGS AND DISCUSSION

In this study, the responses were received from 31 learners who enrolled in the BKAS3143 Accounting Programming Package course for semester one of session 2022/2023. Demographically, the 31 learners consist of seven males and 24 females who were majority from semester five and only one learner from semester ten. In terms of cumulative grade point average (CGPA), most of the learners with CGPA of more than 3.66, and ten of the learners with CGPA of below 3.66.

The responses received via online reflection answered the two objectives of this study. The first objective is to know how the acceptance of a hands-on approach in a programming course i.e., BKAS3143. This objective is gathered from two main questions forwarded to the respondents i.e., "What did I actually achieve while attending this course?" and "How have I developed my knowledge and skills?". The second objective is to get ideas on the improvements expected in the course which is answered by means of two questions i.e., "In what way did this course help me in my future learning and career?" and "What are your recommendations for a possible improvement?".

Objective 1: The acceptance of a hands-on approach

In general, the acceptance of a hands-on approach in the programming course is good and expected to be taught in the way. The hands-on approach is highly effective in promoting learner engagement, increasing learners' motivation as well as retaining knowledge by encouraging active participation, exploration, and reflection.

Hands-on learning requires learners to actively engage with the subject. This could prevent passive learners' attitude who waiting and receiving information only. This is because such a learning approach indirectly forces learners to actively participate in the learning process. Learners of BKAS3143 for instance were able to develop a website or web page via applications such as NetBeans, Xampp, PHP, HTML, and CSS which promotes a deeper understanding of the concepts being taught in coding. Indeed, the hands-on approach could develop active participation as well as keeps learners engaged and focused on the task at hand. This is supported by a few reflections from the learners of BKAS3143 as the following:

"In attending this course, I can construct a website fully using NetBeans and Xampp".
(Respondent 1)

"I can run code".
(Respondent 2)

"While attending this course, I have learned how to use PHP, HTML, and CSS to create web pages".
(Respondent 3)

"I obtained knowledge on how to create/build a system using PHP".
(Respondent 4)

"I can make the system function".
(Respondent 5)

In addition, hands-on learning often involves practical activities that encourage learners to explore and discover knowledge on their own. This indirectly, allows learners to develop a sense of ownership over the learning and encourages a natural curiosity to investigate deeper into the subject matter. This is supported by the view of the learners of BKAS3143 whereby actively exploring and creating or developing their own website or web page, they become more motivated to seek out knowledge and ensure the creation is workable as supported by a few respondents:

"I learn a lot about how to implement theory knowledge from the previous course (DMSAIS). Learned on the HTML and JavaScript while completing my group project".
(Respondent 6)

"I understand MySQL that I don't understand before. Learn programming languages such as PHP, HTML, Java, etc. via S3School".
(Respondent 7)

"Throughout the semester, I have learned the basics of coding and I have more understanding of how accounting software is running".
(Respondent 8)

“Through this course, I know how to build a website which able to record and retrieve data through a database”.

(Respondent 9)

“I learned a lot about both PHP and HTML which were really new to me”.

(Respondent 10)

“What I achieve in this class is I get knowledge about programming”.

(Respondent 11)

The learners via hands-on approach stressed that the learning style gives opportunities for learners to develop their knowledge and skills through the experiences and knowledge gained from the learning process. Indirectly, the hands-on style allows the learners to associate their understanding, identify connections between different concepts and recognize the relevance of what they have learned. Hence, the approach deepens the learning process and enhances knowledge retention as learners suppress, explore, and engage which makes meaning of their experience. Active engagement and contextualization keep learners interested and motivated to explore further as they see the direct application of what they are learning. Learners are more likely to be motivated to explore further and retain the knowledge they have acquired as supported by a few of the reflections the following:

“Via exploring w3 school, tutorial on YouTube video, I understand the template on website”.

(Respondent 12)

“I knew my possibility to do coding and how to learn coding with w3Schools”.

(Respondent 13)

“I learn or explore how to apply the correct programming languages based on the requirements”.

(Respondent 14)

“I think I will be able to do the basic PHP function to create a system and during this course, we are exposed to many elements and functions that we can use in the future”.

(Respondent 15)

“To develop my knowledge and skills in programming, I refer to the W3Schools website, YouTube, and other resources. Furthermore, I will keep practicing and finish the individual assignments that have been assigned by myself”.

(Respondent 16)

“I normally will watch YouTube and GitHub to get the code and knowledge about the coding”.

(Respondent 17)

“Class, W3 school, stack overflow”.

(Respondent 18)

“Through w3school and google”.

(Respondent 19)

Objective 2: Ideas for improvement of the course

The feedback gathered provides valuable insights into the course's effectiveness and areas for improvement. Course coordinators and instructors could use this information to enhance the learning experience and ensure it aligns with the learners' future goals and aspirations. Indirectly, it could support the development of practical skills, critical thinking, and deeper conceptual understanding, making the learning more meaningful as well as applicable to real-life. Indeed, gained valuable knowledge and skills which could assist learners of BKAS3143 to choose relevant fields or career aspirations after graduation. Moreover, problem-solving abilities should be enhanced especially in the learners' ability to approach and solve challenges related to their professional domain later. This could increase career advancement opportunities as learners could associate the course contribution with new job opportunities, promotions, or professional growth. Indeed, the hands-on practical part would enhance confidence in their knowledge and skills in real-world scenarios. The feedback from the respondents supports the ideas for improvement of the course as the following:

“Added value to get internship placement”.

(Respondent 9)

“If I were to choose a career in IT scope, it will really help me a lot as nowadays technology has advanced, and everything is based on this. By learning this course, we are given exposure to basic skills and slowly introduced to the world where we actually see how people build systems and websites. So it will build up our knowledge and we will feel attracted to learn more”.

(Respondent 15)

“This course provides me with the knowledge about how to write codes for creating a web page as well as a system. It is beneficial to me as later on in the workplace, I can help the company I work with to design a system that can solve the problems faced by the company itself. Furthermore, it can help me to complete the tasks assigned to me efficiently and effectively”.

(Respondent 19)

“Programming is an add value skill to an accountant especially who wish to apply for Audit IT career. Besides, it is useful for data managing”.

(Respondent 20)

“This course will be very useful for me in the future because the knowledge of website developing, I gained in this course will help me to apply in my career in the accounting field”.

(Respondent 22)

“It is probably an additional skill for me to compete and survive in my career path”.

(Respondent 23)

“Maybe I have more career opportunities than a pure accounting student who does not learn coding”.

(Respondents 25)

In terms of ideas or recommendations for possible improvements, a few constructive feedback to enhance the course and cater to the learners' need more effectively are shared. Learners of BKAS3143 request adequate support, flexibility, and accessibility of the system outside the lab. This is to accommodate diverse learning preferences and busy schedules which could give options for self-paced learning. On top of that, suggestions for improving communication and support were also stressed in the feedback by the respondents. Learners in particular recommend better communication space with instructors to seek assistance and clarify doubts promptly. These ideas or recommendations were suggested by the respondents as the following:

“Lecturer can explain where the references are to get the coding and how the coding is in the class”.

(Respondent 20)

“Maybe just if MySQL is shut down unexpectedly. If possible, the lecture needs to guide students on how to solve it”.

(Respondent 11)

“Physical class outside of the lab”.

(Respondent 30)

“My recommendation is the computer lab should spruce up the computer lab with functional decorations as well as improve internet connection to provide a better environment for students to learn”.

(Respondent 4)

5. CONCLUSION

Precisely, hands-on learning approaches indirectly improve learners' understanding and engagement on the subject matter. Basically, it offers a range of benefits, including enhanced understanding, increased engagement, practical application, multisensory learning experiences, teamwork, and communication skills development, as well as fostering a positive attitude towards learning. By incorporating hands-on activities into educational settings, educators can create dynamic learning environments that promote active participation, critical thinking, and long-lasting knowledge retention.

Hands-on learning approaches provide an effective means of improving learners' understanding. By engaging actively with the subject matter, learners are able to apply theoretical concepts to practical situations, enabling a deeper level of comprehension. This active participation enhances knowledge retention and promotes critical thinking skills.

Moreover, a hands-on approach undeniably increased engagement among learners. Indirectly, it fosters higher levels of learner engagement compared to traditional passive learning methods. The interactive nature of hands-on activities captivates learners' attention and stimulates their curiosity. This reinforced engagement leads to improved motivation, participation, and overall enjoyment of the learning process.

Practically, the approach facilitates the transfer of knowledge into real-world applications. By actively developing, creating, and testing the accounting programming knowledge via

experiments, or simulations on the assessment project. This prepares them for future challenges and enhances their ability to apply acquired knowledge in practical scenarios.

The active and enjoyable nature of hands-on learning can cultivate a positive attitude toward learning in general. As learners feel a sense of accomplishment through hands-on activities, it could develop confidence in the learners' abilities, leading to increased self-motivation and a willingness to explore further topics and domains.

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Management of Zakat Surplus and Amil Funds: Case study of Malaysian Islamic Religious Councils

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Abstract: *This paper aims to gauge view on practices of managing zakat surplus and amil allotment funds of Malaysian zakat institutions. The paper employed two methods that are semi-structured interviews and structured interviews. Structured interview using online questionnaires were sent out to all zakat institutions in Malaysia. Out of 14, only eight zakat institutions responded. Meanwhile, semi structured interviews were conducted with Islamic scholars and economists. Result indicates that all respondents agreed that both funds have been efficiently and effectively managed. They also agreed that there should be a special taskforce committee investment in managing both funds consist of capable and experienced expertise. Majority of them also agreed that amil allotment fund could be invested in investment products that could give high returns. Meanwhile, experts interviewed are also highly recommend for both funds to be managed by knowledgeable and experienced taskforce or expert to ensure that the funds are appropriately and efficiently managed.*

Keywords: Zakat Surplus Fund, Amil Allotment Fund, Islamic Religious Council, Malaysia

1. INTRODUCTION

Zakat, which is one of the five pillars of Islam, is an obligatory form of charity that Muslims who meet certain financial requirements must pay (Syukor et al., 2020; Widiastuti et al., 2018). The purpose of zakat is to purify one's wealth and assist the needy. The management of Zakat funds has always been a crucial issue in the Islamic world, particularly in Muslim-majority countries like Malaysia, where the collection and distribution of Zakat are managed by government authorities. The Islamic Religious Councils (IRC) in Malaysia are among the main bodies responsible for the collection and distribution of Zakat funds. These councils are called Majlis Agama Islam or State Islamic Religious Councils, and they operate at the state level. The management of zakat surplus and the IRC amil funds (portion of zakat for the zakat institutions) is a critical area that requires attention, and this paper aims to provide a case study of the management of zakat surplus and the IRC amil funds by the Malaysian IRC.

Previous research has explored various aspects of zakat management, including collection, distribution, and utilization (Sawandi, Abdul Aziz & Saad, 2019; Saad et al., 2017; Saad & Sawandi, 2016). In Malaysia specifically, several studies have examined the efficiency and effectiveness of zakat management by the Islamic Religious Councils. However, little research has focused specifically on the management of zakat surplus and amil allotment funds. While some studies have briefly touched on this area, there is still a significant gap in the literature concerning current practices in managing zakat surplus and amil funds by the Malaysian Islamic Religious Councils. Hence, this paper aims to gauge view on practices of

managing zakat surplus fund and amil allotment fund of Malaysian zakat institutions. The paper will also put forward recommendations to improve the management of zakat surplus and amil funds by the Malaysian Islamic Religious Councils as suggested by the experts.

2. LITERATURE REVIEW

2.1. Zakat Management

Zakat management refers to the process of collecting, distributing, and managing the Islamic obligatory charity known as zakat. In Malaysia, state Islamic religious councils, supervised by the federal government, are primarily responsible for the collection and administration of zakat. Managing zakat entails establishing procedures and structures for the collection, distribution, and administration of zakat funds. This may include the installation of zakat collection centres, the calculation of zakat owed by eligible individuals, the identification of those in need, and the distribution of zakat funds to these individuals (Hudaefi, Caraka, & Wahid, 2022; Kasim & Abdullah, 2022; Lubis, Tasia, Lubis, & Al-Khowarizmi, 2021; Mutamimah et al., 2021). Zakat is utilised to assist the poor and disadvantaged as well as fund community-wide projects. Effective zakat administration ensures that funds are distributed fairly and reach those in greatest need. Administration of Zakat in Malaysia is crucial for multiple reasons. Zakat can initially promote social justice. Zakat is a method for redistribution of wealth and ensuring that all community members have access to life's necessities. Effective collection and administration of zakat can assist the government in reducing economic disparity and promoting social justice (Gamon & Tagoranao, 2018; Hamid & Hamid, 2020; Hasan et al., 2019).

In addition, proper zakat management can strengthen the Islamic community by fostering social and economic well-being in the society. Zakat is a religious obligation for Muslims, and its administration is fundamental to Islam. The government can contribute to the strengthening of Malaysia's Islamic community by ensuring that zakat is collected and distributed in accordance with Islamic principles. Moreover, zakat management enables zakat institutions to promote transparency and accountability in providing the public with the appropriate welfare of zakat collection and zakat distribution (Ahmed, Bin Aiffin, Yousif Alabdullah, & Zuqebah, 2016; Murdayanti & Puruwita, 2017; Noviana, Arifudin, Indah, Tanjung, & Sofyan, 2020). Effective zakat administration requires both transparency and accountability in the collection and distribution of funds.

Similarly, by implementing transparent procedures and reporting mechanisms, the government can ensure that zakat funds are used for their intended purpose and that the public has faith in the system. The distribution of zakat funds by religious institutions such as mosques and Islamic charities that manage zakat may be made more transparent and accountable through the use of technology and other modern management techniques (Ahmed et al., 2016; Murdayanti & Puruwita, 2017; Noviana et al., 2020). Effective zakat administration can simply guarantee that zakat is distributed equitably and reaches those in need in a timely manner. In conclusion, the management of zakat in Malaysia is significant because it promotes social justice, alleviates poverty, strengthens the Islamic community, and encourages the transparent and accountable use of public funds.

2.2. Management of Zakat Surplus and Amil Funds

The zakat surplus is the amount of zakat collected that exceeds the amount required to meet the immediate needs of zakat-eligible individuals. This surplus can be used to fund long-term projects and programmes that aim to improve the well-being and economic development of the community (Lessy, Adamek, & Khaja, 2020; Noviana et al., 2020). Management of zakat surplus and amil funds is the allocation and distribution of excess zakat and amil funds to support zakat-aligned initiatives. This can include activities in education, health care, poverty reduction, and economic development (Bouanani & Belhadj, 2020; Fauziah, 2020; Sumai, Mutmainnah, Nurhamdah, & Arsyad, 2019; Suteki & Putri, 2019; Zain, Mahadi, & Noor, 2019). The management of these funds requires extensive planning, monitoring, and evaluation to ensure their effective and efficient use.

By establishing a zakat foundation or trust, excess zakat and amil funds can be managed. A comparable organisation can be established to manage the collection, investment, and distribution of these funds, with the goal of ensuring the long-term sustainability of the community (Akmal, Majid, & Gunawan, 2021; Fauziah, 2020; Owoyemi, 2020; Tajudin, Omar, Smedlund, & Aziz, 2020). The zakat foundation can establish clear standards for the distribution of funds and construct a transparent and accountable monitoring system for the funds' utilisation. Another method for managing zakat excess and amil funds is to form partnerships with other organisations, such as non-profits and government agencies, to conduct initiatives and activities that align with the goals of zakat (Sarif, 2019). This can help ensure that zakat funds are utilised effectively, and that the community derives substantial benefit from these funds. Good management of zakat surplus and amil revenues is required to ensure that these funds are used to meet the needs of the community as efficiently and effectively as possible.

2.3. Zakat and Sustainability

Sustainability and zakat both encourage social and economic equity, prudent resource management, and long-term thinking (Sarif, 2019). The purpose of zakat, the obligatory charity in Islam, is to alleviate poverty and aid those in need. Therefore, zakat promotes social sustainability by establishing a more equitable society in which everyone has access to basic resources for survival. Zakat also contributes to economic sustainability by encouraging wealth distribution and promoting sustainable economic growth (Delvina, Arifudin, Zulkarnaen, Rustandi, & Prasetyo, 2020; Iskandar, Possumah, Aqbar, & Yunta, 2021; Saripudin, Djamil, & Rodoni, 2020). This can contribute to the development of a more stable and resilient economy, which is advantageous for all.

In contrast, sustainability seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs. This requires accountable resource management, protection of natural resources, and promotion of sustainable economic growth (Noviana et al., 2020; Sawandi, Aziz, & Saad, 2019). Sustainability promotes long-term economic and social prosperity by fostering environmental sustainability. Sustainability and zakat are complementary because they share similar objectives and ideals. By working together, they can create a more just, equitable, and sustainable world for all. For instance, zakat funds can be used to promote sustainable development initiatives such as the promotion of renewable energy and sustainable agriculture (Laila, Quamilla, & Minhajuel, 2020; Morea & Poggi, 2016). This can facilitate the transition to a more sustainable and low-carbon economy while creating long-term gains that can be used to fund the ongoing work of zakat

organisations. Islam's obligatory charity, zakat, has close ties to the concept of sustainability. In essence, zakat promotes long-term economic growth by encouraging Muslims to assist the needy and share their wealth. In this way, zakat contributes to the development of a more equitable society and the alleviation of poverty, both of which are essential components of sustainable development (Abdul-Majeed Alaro & Alalubosa, 2019; Fauziah, 2020; Gamon & Tagoranao, 2018).

Zakat may also promote environmental sustainability in addition to social sustainability. Specifically, zakat can be used to fund environmental conservation and sustainability initiatives, such as the protection of natural resources and the promotion of sustainable agriculture. These types of projects can contribute to the protection of the environment for future generations and the responsible and sustainable utilisation of resources (Sadat et al., 2019). Additionally, zakat funds could be administered in a more sustainable manner. This can be accomplished by investing zakat funds in green technology and renewable energy. Consequently, zakat funds can support the transition to a more sustainable and low-carbon economy, while also generating long-term profits that can be used to sustain the work of zakat organisations (Sadat et al., 2019). Globally, zakat ideals can be combined with environmental goals to create a more just, equitable, and sustainable world. In accordance with Islamic teachings, zakat can contribute to a better future for all by fostering sustainable economic development and promoting environmental preservation especially related to agro business in the zakat economic development community (Syukor et al., 2020).

Zakat, the obligatory charity in Islam, and sustainability share a number of similarities, including the promotion of social justice and equitable resource distribution (Bukhari, Wekke, Thaheransyah, & Sabri, 2019; Hasan et al., 2019). Zakat seeks to alleviate poverty and assist the needy, whereas sustainability aims to create a more equitable society in which everyone has access to the resources necessary to thrive. Secondly, both zakat and sustainability emphasise the responsible utilisation of resources. Both zakat and sustainability emphasise the responsible utilisation of resources. Zakat requires Muslims to support those in need and share their wealth, whereas sustainability promotes the efficient use of resources and the preservation of natural resources for future generations (Razak, 2020). The third similarity between zakat and sustainability is the adoption of a long-term perspective: both zakat and sustainability adopt a long-term perspective (Doktoralina, Ilias, Bahari, Waluyo, & Suryadhi, 2018; Mkuu & Yusoff, 2020).

Zakat encourages Muslims to think beyond their immediate needs and support sustainable economic development, whereas sustainability focuses on meeting the needs of the present without compromising future generations' ability to meet their own needs. Fourth, both zakat and sustainability acknowledge the significance of collective accountability. Sustainability necessitates collective action to address global challenges such as climate change and resource depletion, whereas zakat is a collective obligation of the Muslim community to aid the needy (Chotib, 2021). Fifthly, zakat and sustainability highlight the significance of community involvement (Fauziah, 2020). Zakat encourages Muslims to engage with their community and assist those in need, whereas sustainability necessitates collaboration among diverse stakeholders, such as governments, businesses, and civil society, to achieve common goals. Through the understanding of wealth management and poverty eradication for the impoverished, zakat and sustainability can be viewed as carrying the same weightage of understanding (Iskandar et al., 2021; Razak, 2020). Together, zakat and sustainability can create a more just, equitable, and sustainable world for all people.

Zakat, the obligatory charity in Islam, can enhance the sustainability of the Islamic community in a number of ways. Firstly, zakat seeks to alleviate poverty and aid the needy, thereby contributing to a more equitable society in which everyone has access to the resources required to thrive. By reducing poverty, zakat can improve the well-being of individuals and families, which is essential for long-term sustainability (Iskandar et al., 2021; Razak, 2020). Secondly, zakat can be used to fund sustainable economic development initiatives, such as the promotion of small businesses, sustainable agriculture, and renewable energy (Morea & Poggi, 2016). As a result, zakat can contribute to the development of a more stable and resilient economy that is beneficial to all while promoting environmental sustainability.

The third application of zakat funds is to support environmental conservation initiatives such as the protection of natural resources and the promotion of sustainable land use practises (Abdulai & Shamshiry, 2014). This can contribute to the preservation of the environment for future generations and the use of resources responsibly and sustainably. Fourth, zakat organisations can play a crucial role in promoting sustainability and environmental conservation education and awareness. By doing so, they can foster a culture of sustainability within the Islamic community and promote environmentally responsible behaviour. Fifth, zakat encourages Muslims to engage with their community and aid the needy, which can contribute to the growth of social capital and community resilience (Lessy et al., 2020). Strong and resilient communities are better able to adapt to and respond to changing conditions, which can be especially crucial in the face of environmental and social challenges. Ultimately, zakat can promote sustainability in the Islamic community by combating poverty, supporting sustainable economic development, promoting environmental conservation, raising awareness, promoting education, and strengthening community engagement. Thus, zakat can contribute to a world that is more equitable, sustainable, and impartial for everyone.

3. RESEARCH METHODS

To address the research objectives, the study employed two methods related to descriptive analysis case studies that are semi-structured interviews and structured interviews. Structured interviews using online questionnaires were sent out to all zakat institutions in Malaysia. Despite followed up calls and email, out of 14, only eight zakat institutions responded. For all the eight zakat institutions responded, zakat officers who are responsible in managing zakat collection and/or distribution were the representative of the zakat institutions in responding to the online questionnaire. Data collected from the structured interview was analysed descriptively.

Meanwhile, semi structured interviews were conducted with three Islamic scholars and two Islamic economists in attaining their insights pertaining to the zakat surplus investment, Islamic financial investments elements and governance strategies. The interviews were held for about an hour to an hour and half. All interviews were tape-recorded with the permission of the interviewees. In accordance with Miles and Huberman (1994) and O'Dwyer (2004), the interview data of this study were analysed in three phases to identify patterns, in-depth insights, and irregularities in the evidence gathered from the transcriptions and field notes (Brendan O'Dwyer & Unerman, 2008). In the initial phase, interviews were transcribed word-for-word. Before beginning data coding, the researcher read the transcripts and field notes, as well as listened to the interview recordings, to gain a general understanding of the data (O'Dwyer, 2004). O'Dwyer and Unerman (2008) conducted a post-interview analysis of

transcripts through a close reading of all transcripts and accompanying notes to search for key themes in the evidence collected. Lastly, the analysis (data interpretation) entailed the identification of key patterns in the evidence, a re-examination of the transcripts, the writing of an initial description of the findings, and the interpretation of descriptive evidence using the analytical theme.

4. FINDINGS

4.1. Practices of Managing Zakat Surplus Fund

With regard to the management of zakat surplus fund the responses are as presented in Table 1. From the table, all respondents agree that Kumpulan Wang Zakat Fund has been effectively and efficiently managed. The findings, to some extent indicate the zakat officers believe the IRCs have performed good effort in ensuring the effective resources are being scrutinised in a magnificent manner. They also agree that a special taskforce committee investment comprises of capable and experience experts should be formed to manage the investment of the fund. Perhaps, the officers perceive good-experience special taskforce committee may assist in the decision making of undertaking socially financial investments with considering high return and at the same time securing the responsibility and accountability of the zakat institutions. The zakat institutions are accountable not only to the zakat payers but also to the *asnaf* to guaranteeing their social welfare are being fulfil by the zakat entities (Abdul Ghafar Ismail & Bayu Taufiq Possumah, 2013).

Table 1. View on Practices of Managing Kumpulan Wang Zakat Fund

Practices	Agree	Disagree
Effective management for zakat surplus in Kumpulan Wang fund	8 (100%)	-
Efficient management for zakat surplus in Kumpulan Wang fund	8 (100%)	-
Special taskforce committee investment in managing zakat surplus fund from capable and experienced expertise	8 (100%)	-
Investment in guaranteed return on principal apportionment	7 (87.5%)	1 (12.5%)
Investment in convertible liquid instruments	5 (62.5%)	3 (37.5%)
Investment in good return instruments	4 (50%)	4 (50%)
Investment zakat fund in secured and stable practices	3 (37.5%)	5 (62.5%)

Meanwhile, in term of types of investment, majority of the respondents (87.5%) agree for the fund to be invested in investment that guaranteed return on principal amount. Besides this type of investment, more than half of the respondents (62.5%) agree for the fund to be invested in convertible liquid investment. The findings documented in this study is in line with the nature of this fund that sooner or later need to be distributed to *asnaf*. Hence, it is appropriate for the Kumpulan Wang Zakat to be managed i.e., by knowledgeable and experienced taskforce or expert to ensure that the funds are appropriately and efficiently managed. The same goes with the views on the types of investments that assume to be suitable for the funds. The view of the zakat officers on this aspect is in line with view of the following interviewees:

“The zakat institution is encouraged to have a special taskforce committee for managing the zakat surplus fund, probably for every state in Malaysia.”
(Interview 3 – MAIWP)

4.2. Practices of Managing Amil Allotment Fund

Table 2 presents the respondents’ view on practices of to the managing RIC amil allotment fund. Same as findings for the zakat fund surplus, all respondents agree that this fund has been effectively and efficiently managed. These findings, to some extent, show the zakat officers perceive the zakat institutions have executed the best practices in managing the fund for the benefit and welfare of the social community and the asnaf community in alleviating poverty and providing special needs for them. With regard to the formation of a special taskforce committee investment to manage the investment of this fund, all except one respondent (87.5%) agree with such proposal or initiative. Same reason as the zakat surplus fund, this view could be due to the belief of the zakat officers over good-experience special taskforce committee that might assist in the decision making of undertaking socially financial investments with considering high return and at the same time securing the responsibility and accountability of the zakat institutions.

Meanwhile, in term of types of investment the same finding is documented for this fund to be invested in an investment that could provide high returns as majority of the zakat officers do agree with such initiative., majority of the respondents (87.5%) agree for the fund to be invested in investment that guaranteed return on principal amount. Besides this type of investment, more than half of the respondents (62.5%) agree for the fund to be invested for long term phase. In contrast, more that 50% of the zakat officers disagree for the fund to be invested in short term deposits, investment in shares, and investment in property management. These findings reflect the officers believe that it is important in securing the IRC Amil allotment fund at the minimal risks’ investment level.

Table 2: View on Practices of Managing Amil Allotment Fund

Practices	Agree	Disagree
Efficient management for Amil Allotment fund	8 (100%)	-
Effective management for Amil Allotment fund	8 (100%)	-
Special taskforce committee investment in managing zakat surplus from capable and experienced expertise	7 (87.5%)	1 (12.5%)
Investment in high return	7 (87.5%)	1 (12.5%)
Investment in long term phase	5 (62.5%)	3 (37.5%)
Investment in short term phase	3 (37.5%)	5 (62.5%)
Investment in Shariah compliant shares portfolio	3 (37.5%)	5 (62.5%)
Investment in property management	3 (37.5%)	5 (62.5%)

The findings of the structured interview are coherent with the experts’ viewpoint. The researchers had interviewed three Islamic scholars and two Islamic economists in attaining their insights pertaining to the zakat surplus investment, Islamic financial investments elements and governance strategies for delivering upholding socially sustainable zakat investment (Doktoralina, et al., 2018).

The indication of the Islamic scholars revolves within the recommendation based on the Islamic regulations and the role of zakat management. The emphasis was given on undertaking socially responsible investment by highlighting the function of the zakat institutions as a custodianship for the interested parties and *asnaf* (Abdul Ghafar Ismail & Bayu Taufiq Possumah, 2013). The Islamic scholars accentuate on the zakat money based on the halal and haram elements, permitted acts for Amil and zakat institutions and safeguarding investment for the zakat surplus fund.

Interestingly, the viewpoint of the Islamic economics focusses on the development of the ecosystems in the zakat systems that incorporated the audit committee, special taskforce, and governance in the zakat socially responsible investment. The statement can be viewed from the analysed transcripts from the Islamic scholars and Islamic economist standpoint that are obtained from the fieldwork data gathering.

The Islamic economic specialist highlights on the strategies to be considered in undertaking socially responsible investment (Doktoralina, et al., 2018). The strategies include meticulous negative or exclusionary screening; eliminates investment violated the social norms; selecting investment in the best ESG corporate performance; specific focused fund; ESG integration; active ownership and lastly, optimistic impactful investing.

5. CONCLUSION

In general, the finding indicates that the respondents believe that the zakat institutions have performed good effort in managing both types of funds. The officers perceive the zakat institutions had execute their best practices for the benefit and welfare of the social community and the *asnaf* community in alleviating poverty and providing special needs for them. The management of zakat surplus and the IRC amil allotment funds has to be considered systematically for acquiring optimal return with minimal.

The emphasis is being considered as part of the suggestion by the experts in this area to conform to the socially responsible investment. Development of comprehensive and optimistic strategies has to be aligned with the returning social benefits and securing welfare to the *asnaf* and deprived society since this is the ultimate goal in the establishment of zakat institutions. However, the zakat institutions are being recommend having a special taskforce committee in handling the socially responsible investment in encountering the complex social needs and digital advancement of global economy (Doktoralina, et al., 2018).

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Factors Affected the Level of User Satisfaction with Stamp Assessment and Payment Systems (STAMPS) in Muar, Johor

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Abstract: *The world was affected by the disaster of the Covid-19 disease epidemic that began at the end of the year 2019. This consequence led to the closure of private and government premises and the implementation of online services became an alternative way instead of existing face-to-face services. In order to speed up the current digitization and faced the challenges of the Covid-19 pandemic Inland Revenue Board of Malaysia (IRBM) replaced the manual Digital Franking System with Stamp Assessment and Payment System (STAMPS), especially for agents and companies where it is carried out entirely online. This study was conducted to identify the level of user satisfaction with the STAMPS system in the Muar district. This research also examines the determining factors and their correlation to user satisfaction with the STAMPS system in Muar District. A total of 100 external and internal user respondents were involved in this research, consisting of STAMPS agents from law firms and IRBM officers. Three quality of the e-Service model was applied to determine the factors that contribute to the level of user satisfaction with the STAMPS system. The analysis was carried out descriptively, regression and correlation and the results of this research found that users of the STAMPS system have rated a high level of satisfaction after using this system. Findings of regression analysis, the factors of web design and efficiency are the biggest contributors to the level of user satisfaction of STAMPS in the Muar district. Two factors which are web design and information have a strong correlation with the assessment of user satisfaction. While factors of efficiency, system availability, responsiveness, and ease of use show a moderate relationship with the assessment of user satisfaction. The privacy factor shows a weak relationship strength with user satisfaction ratings. Any good and service marketed or used by the community must be evaluated to find the level of user satisfaction after using it. The high level of customer satisfaction achieved by IRBM Muar through STAMPS is an indicator and appreciation for the organization and it becomes a benchmark demonstrating IRBM is on the right path in achieving the objectives of system development. The contribution of STAMPS which became a new platform for continuing services during the infectious epidemic can be proven by the increase in the collection of stamp duty against Malaysia's direct taxes in 2021.*

Keywords: *STAMPS, satisfaction, users, Net-Qual, ES-Qual, E-RecsQual, IRBM*

1. INTRODUCTION

In an increasingly digital era, the utilization of stamp assessment and payment systems has become an integral part of our daily lives. These systems play a vital role in facilitating secure transactions and providing an efficient means of verifying and validating important documents. However, the success of these systems is not only on their functionality but also on the level of user satisfaction they deliver.

Understanding the factors that influence user satisfaction with stamp assessment and payment systems is crucial for enhancing their effectiveness and ensuring a seamless user experience. This study aims to explore the various elements that impact user satisfaction within these systems, shedding light on both the challenges and opportunities they present. The importance of user satisfaction cannot be overstated when it comes to stamp assessment and payment systems, or any digital platform for that matter. User satisfaction directly impacts the success and sustainability of these systems, as it influences user adoption, loyalty, and engagement.

In Malaysia, the application for stamp assessment has been made mandatory through the Stamps Assessment and Payment Systems (STAMPS) system for users, especially agents, and companies starting from July 1, 2021. Despite the announcement by the Chief Executive Officer of the Inland Revenue Board of Malaysia (IRBM) that was widely publicized in the previous year, specifically in November 2020, the Malaysian Bar Council also disseminated the information to its members on December 28, 2020. In relation to that, IRBM Muar Branch has received numerous complaints expressing difficulties in filling out the provided forms due to a lack of technical knowledge. Based on the researcher's experience, 80% of these complaints were received through telephone calls, while the remaining were through email and face-to-face encounters at the counter. Do these complaints indicate that users are still not ready for this digitalization change?

The assessment of stamp duties requires a good technical knowledge of stamp duty calculations based on the Stamp Act 1949, which can be quite complex. The lack of technical knowledge among users increases the workload of the stamp duty assessors and STAMPS helpdesk, as observed by the author's experience immediately following the implementation of STAMPS. The IRBM Muar branch received a high volume of phone calls and emails to assist and explain the procedures for using the STAMPS system. On average, each day, officers at the Muar branch received 30 phone calls, taking approximately 35 to 47 minutes to resolve each inquiry. Additionally, at the counter, the IRBM Muar branch had to assign an additional officer to assist and guide new users in completing the STAMPS process.

The acceptance of the STAMPS system remains a question mark, whether it can be well-received or if it has caught existing users off guard. This question needs to be addressed because the implications experienced by the researcher after the implementation of STAMPS are the sudden increase in phone calls and email inquiries. This situation affects the quality time of the officers in the office, as their primary tasks are assessing and verifying the stamp assessments. The assessment and verification period has been set by the headquarters to be completed within seven days, and any backlog cases for each branch will be displayed in the system for monitoring. This necessitates officers to allocate additional time at home, even during their days off, to complete these tasks. This can potentially create new pressures for officers involved in stamp duty operations. The effectiveness of the system for all parties involved is a frequently raised concern.

The experience of the researcher, facing an increase in incoming phone calls and email complaints compared to before the implementation of STAMPS, indicates issues that need to be explored in this study, as it is the main purpose of the research. The sudden enforcement may have caused various reactions from both internal and external users, which need to be examined. Hence, this study aims to identify the level of user satisfaction with the STAMPS system in the Muar district. In addition to that, this study also examines the determining factors and their correlation to user satisfaction with the STAMPS system in Muar District

2. LITERATURE REVIEW

The measure of success for any business lies in the measurement of customer satisfaction. Therefore, to strengthen a company or organization, efforts must be made to enhance customer satisfaction as a means to improve business performance.

Satisfaction is a positive or negative feeling towards a product or service, based on the evaluation and comparison of its performance. Customers give positive ratings and feel delighted when they are satisfied with the product purchased or the service received (Kotler & Keller, 2012). Customer satisfaction arises from the evaluation made by customers after using or purchasing a product and comparing their feelings afterward with their expectations for that product or service (Yamit, 2020). Indeed, customer satisfaction is highly valuable as customer retention can prolong the lifespan of a firm (Kumar, 2018). Marketing and promotion costs can be reduced when attracting new customers and retaining existing ones who continue to make purchases or use the firm's services.

For an information system, user satisfaction is the best measure of success. If users hold a negative perception that a particular system is unsatisfactory, they will lose interest in using it. Therefore, an organization needs to improve the system and view it through the lens of the users to determine whether it is truly satisfying or not (Zviran & Erlich, 2003). Consequently, improving a system requires substantial investment, which may reduce the profit margin or yield of a firm. Thus, it is crucial for an organization to measure the level of user satisfaction transparently.

2.1 Service Quality and e-Service Quality

Service quality measurement is an important management tool for understanding user needs and preferences by analyzing user experiences in services provided by firms or any entity, and accepted by customers and users (Ghotbabadi et al., 2015). It can serve as a benchmark that helps firms identify their strengths and weaknesses in their efforts to provide better services to users. Furthermore, the most important role of service quality is to achieve customer satisfaction. If service quality is high positively and significantly, it can influence customer satisfaction and loyalty (Ghotbabadi et al., 2015). Electronic service quality, simply known as e-Service, is defined as a comprehensive evaluation for customers online or in the virtual realm (Santos, 2003).

Fundamentally, electronic services are easier to evaluate and more precise compared to face-to-face or traditional services, which leads customers in the virtual realm to expect a higher level of quality or at least the same as traditional services (Santos, 2003). Parasuraman et al. (2005) argue that e-Service quality is broadly defined and encompasses all customer interaction phases on a website, considering the effectiveness of a system or website. This

can help customers make online purchases easily and have efficient delivery capabilities. The same opinion is expressed by Zeithaml et al. (2000), who define e-Service quality as the extent to which a website facilitates purchasing and assists with efficient and effective purchasing and delivery. The dimensions of electronic service quality differ from traditional service quality in terms of human-technology interaction, website design, and face-to-face interaction (Rotchanakitumnuai, 2008).

The rapid pace of technology resulting from globalization has made all transactions of this millennium accessible at our fingertips. In line with the opinion of Sylvie and Ina (2010), who states that the rapid growth of e-commerce has made e-Service-related research a hot and popular topic to be studied and explored. However, the question remains on how to accurately measure e-Service quality, besides identifying the appropriate factors in evaluating online service quality.

3. METHODOLOGY

Research Methodology aims to serve as a guideline for researchers throughout the research process until its completion. Three quality e-Service theory models, namely Net-Qual Model, ES-Qual Model, and e-RecSQual Model, are applied in the questionnaire, which serves as the platform to achieve the objectives of the study, namely, to determine the determining factors for the level of user satisfaction with the STAMPS system in the Muar District and the relative satisfaction level of the participants. According to Hayes (2008), customer perception can be effectively measured through proven effective models.

This research utilizes a questionnaire as a procedure and procedure for data collection to achieve the objective of obtaining the level of user satisfaction with the STAMPS system and significant factors that determine this system's user satisfaction level. A pilot test was conducted with 30 users, consisting of 14 external users from law firms and 16 internal users, including stamp assessors and TPDS personnel who are currently serving and former stamp assessors, including TPDS personnel who were appointed but transferred units in 2022. Through this pilot test, it was deemed necessary to modify the Likert Scale, which was originally given a scale of one to five. In this modification, a score of three does not indicate uncertainty or neutrality, but rather "slightly agree," to ensure that survey participants do not take the easy way out in answering and to obtain more accurate and robust results.

This online survey was self-administered by the researcher using Google Forms and was sent to officers and former officers who have used the STAMPS system, as well as to law offices in the Muar District registered as STAMPS system agents. A total of 100 responses were received, including 68 from external users, consisting of STAMPS system agents and law firms, and 32 from assessors who were former stamp assessors of LHDNM Muar, as well as current and former TPDS personnel of LHDNM Muar. The data collected from the questionnaire was then converted into Microsoft Excel format for ease of analysis. To achieve the research objective, Statistical Package for the Social Sciences (SPSS) version 23 was used for data analysis, including descriptive and inferential analyses.

4. FINDINGS AND DISCUSSION

The STAMPS system should not be taken lightly as stamp duty collection through the STAMPS system is greater compared to counter payments. The revenue generated from stamp duty proves that the STAMPS system could help the public pay duties more easily

without having to queue at the LHDNM counter or purchase physical stamps, as payments can be made online.

Any service or product marketed or used by the public must be evaluated for user or customer satisfaction after its use. High levels of satisfaction are perception and appreciation of the organization, indicating that the organization is on the right track in achieving the objectives of the developed system. This study was conducted to examine the user satisfaction level of the STAMPS system in the Muar District and identify the determining factors contributing to user satisfaction for this system.

4.1. Objective 1: The Level of Satisfaction among Users of the STAMPS

The research findings are satisfaction for the system provider, LHDNM, as even though the system is still new, the survey responses indicate that the developed STAMPS system has achieved a high level of satisfaction, with 100% of respondents agreeing that they are satisfied after using the STAMPS system.

This is based on the minimum scores for each item indicated by the customer satisfaction level in the survey feedback. Thus, this study found that 100% of the items were at a high satisfaction level. The minimum scores for the four items range from 3.99 to 4.33. Overall, the satisfaction level is high. The item contributing to the highest satisfaction level is "I choose to use STAMPS instead of queuing at the LHDNM counter to complete tax assessment and stamp duty payments" (M=4.33, SD=0.836), where 43% of respondents strongly agree with their choice of using the system over the counter. The second highest item is "STAMPS is a good system, and I would recommend it to anyone" (M=4.28, SD=1.082), with 61% of respondents strongly agreeing that they would recommend this system to others.

The feedback received is not biased, as 61% of respondents stated that they would recommend it to other users. This indicates a benchmark that the STAMPS system is successful among users in the Muar District. Aligning with Aminul Islam's (2012) opinion that customer satisfaction is a benchmark for measuring the success of a business, businesses must strive towards it.

4.2. Objective 2: The Factors Affected the Level of Satisfaction among Users of the STAMPS

This study involved a regression analysis on eight predictors (information, web design, ease of use, efficiency, system availability, privacy, and responsiveness). Analysis of variance in regression explains whether the model built produces a good predictor of significance for the existing predictors. It tests hypotheses and the differences between the dependent and independent variables. Accordingly, the results show that only two predictor variables, web design, and efficiency, have an influence. Based on the model design, the predictor variable of web design and satisfaction has an F-value of 123.573 and a significance value of $p=0.000$ ($p<0.05$). Similarly, the predictor variables of web design and efficiency affect user satisfaction with an F-value of 84.705 and a significance value of $p=0.000$ ($p<0.05$). Therefore, the hypothesis stating that there is a significant contribution by these predictor variables is successfully supported.

The analysis findings indicate that all seven independent variables make a significant contribution ($p < 0.05$) to the total variance in customer satisfaction ratings. These variables include information, web design, ease of use, efficiency, system availability, privacy, and responsiveness. Together, these variables account for 62.8 percent of the variance in customer satisfaction ratings. Therefore, the hypothesis stating that there is a significant contribution from these seven independent variables to customer satisfaction ratings is successfully supported.

The e-Service quality models, namely Net-Qual, ES-Qual, and E-RecsQual, have become standards for identifying dimensions and determining factors for customer satisfaction with the STAMPS system, including information, ease of use, website design, privacy, system availability, efficiency, and responsiveness. Efficiency and website design are the main factors contributing to a high level of satisfaction among STAMPS system users. Therefore, these findings can serve as a reference point for existing systems and future system development to provide highly efficient systems with good and appealing designs.

The survey research found that over 70% of respondents in this study have a good educational level, specifically a diploma or higher. This may be one of the factors why STAMPS users in the Muar District find it easy to understand and learn the intricacies of the STAMPS system. This is related to the research findings that website design and information have a strong correlation as determining factors for user satisfaction with the STAMPS system in the Muar District. Knowledgeable users will make the best use of information on the website to complete any ongoing transactions. According to Chen et al. (2016), effective product characteristics that are visible, clear, and reliable help users reduce uncertainty about the product and facilitate decision-making. This indicates that information is closely related to a good level of user satisfaction in evaluating a system. Information is one of the interactions between the system provider and the user to achieve mutual understanding. According to Aziz and Idris (2012), achieving mutual understanding indirectly leads to a willingness to cooperate. Thus, enabling the tax authorities to communicate and provide support effectively and smoothly, in addition to receiving more effective and seamless support from taxpayers.

5. CONCLUSION

The STAMPS system was recently made mandatory starting from July 1, 2021. Although its implementation has elicited various reactions from both internal and external users, it is actually an appropriate alternative in the era of disease outbreaks for users to continue accessing government services online.

The importance of letter authentication is crucial, especially in the future, to verify any documents that involve agreements between two parties. If this service is disrupted, it will inconvenience the public and other entities such as banks that frequently engage in letter authentication for loan agreements, developers who need to authenticate property transfer documents, and so on. The user satisfaction reactions in this study, where the researcher employed three e-Service quality models, namely Net-Qual, ES-Qual, and E-RecsQual, serve as indicators of the satisfaction level of the STAMPS system users in Muar, Johor. The findings indicate a high level of user satisfaction with the STAMPS system in the Muar District.

From a cost perspective, the STAMPS system is recognized for reducing the documentation cost of a letter and solving space-related issues at the premises of LHDNM, where a significant amount of space was previously required to store copies of these letter documents. Printing costs, document preparation, and disposal can be reduced in the future, making the administration costs of LHDNM more effective and efficient.

The research findings indicate that two determining factors, web design, and information, have a strong correlation with contributing to user satisfaction assessments. Meanwhile, factors such as efficiency, system availability, responsiveness, and ease of use show a moderate relationship with user satisfaction with the STAMPS system in the Muar District. The last factor, privacy, demonstrates a weak relationship with the assessment of STAMPS user satisfaction. Overall, it can be concluded that the user satisfaction level of the STAMPS system in the Muar District is high and positive, with web design being the primary and most significant contributing factor, followed by efficiency as the second contributor.

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Process, People, Technology Innovation and Tax E-Filing Acceptance

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Abstract: *Inland Revenue Board of Malaysia (IRBM) has made tremendous effort in campaigning tax filing through electronic system (e-filing). Although the system is considered a success to the IRBM, especially among the salaried taxpayers, it is crucial to examine what are the factors that contribute to the success of the system after more than 10 years of e-filing implementation. Number of HASiL4U counters and users at the counters portray that taxpayers still need assistance to file their tax forms. There are still a few taxpayers who are not confident and unable to fill up e-filing by themselves without helps. Indirectly, high demand in HASiL4U counters signify hesitancy and confidence level of taxpayers in using and accepting e-filing. It is believed that interconnected success factors for Malaysian Electronic Government Initiative are innovative technology, process and people. Since the IRBM is yet to achieve its target of 100 percent e-filing users, this study would be able to assist IRBM in identifying the factors that can help achieve its target. This study aimed to review previous literature related to innovation technology, process, people and e-filing system acceptance in order to develop proper hypotheses for testing the relationships between the variables and the acceptance of tax e-filing system. This study contributes theoretically in terms of the directions for hypotheses development for testing in the study of the tax e-filing system acceptance.*

Keywords: e-filing, people, process, technology.

1. INTRODUCTION

In the 21st century, Information Technology and Communication (ICT) have become pervasive, particularly within the public sector, aiming to enhance service delivery for its users. Malaysia has actively embraced ICT across various sectors of its economy, encompassing the public, private, and community domains. This commitment was catalysed by the establishment of the Multimedia Super Corridor (MSC) in 1996, aligning with the aspiration of Malaysia Vision 2020. To further fortify public sector service delivery, in line with the Whole-of-Government approach outlined in the Twelfth Malaysia Plan (2020 – 2025), Malaysia must harness the potential of the latest Industrial Revolution 4.0 (IR4.0).

The implementation of e-government initiatives has ushered in a multitude of advantages, particularly in catering to citizens' needs and demands. The broad spectrum of e-government interactions between citizens and the government not only restores trust in governmental

institutions but also delivers improved services while fostering transparency and accountability. Previous research has demonstrated the potential of e-government to enhance efficiency (Horobeţ et al., 2023; Moon, 2002), reduce costs (Maluleka et al., 2023; Tegethoff et al., 2023), and provide faster and more precise responses (Chen et al., 2023) to its users.

Recognizing the substantial benefits of e-government, the Inland Revenue Board of Malaysia (IRBM) initiated the development of an electronic tax filing system known as e-filing, with the aim of replacing the manual income tax filing process that had been in place since 1947. Under the auspices of the e-government framework, IRBM embarked on the challenge of introducing e-filing, driven by two primary objectives: enhancing operational and processing efficiency, and delivering superior services to taxpayers. E-filing revolutionized the traditional tax declaration method by modernizing operations and, most notably, enhancing service delivery efficiency, enabling taxpayers to interact with tax agencies from anywhere and at any time.

E-filing has streamlined the process of submitting tax returns, making it faster, more convenient, and more secure compared to traditional manual tax forms. Research by (Santhanamery & Ramayah, 2015) indicates that e-filing enhances the efficiency and accuracy of tax payment refund processes, resulting in significant savings in operational and administrative costs. (Azmi & Kamarulzaman, 2010) further assert that e-filing not only reduces the workload of tax administrators but also trims operational expenses. In a statement featured in *The Edge Malaysia* issue 772 dated September 14, 2009, former IRBM CEO Tan Sri Hasmah Abdullah emphasized the critical importance of increasing user numbers for the organization, stating, "Given the substantial investment, it is imperative for IRBM to expand its user base, with a target of reaching 100 users." However, if a segment of taxpayers still insists on filing their tax forms manually.

Based on one of the author's experiences as a responsible officer at the e-filing service counter within IRBM, it has become evident that certain taxpayers express discontent and resistance towards adopting e-filing, opting instead to employ manual tax forms. A notable proportion of these taxpayers gravitate towards manual tax submissions due to their limited proficiency in computer and information technology, a dearth of tax-related knowledge, and the perceived complexity of e-filing processes, particularly during the login phase. Furthermore, apprehensions regarding the security and privacy of e-filing platforms contribute to this reluctance.

Significantly, a considerable number of taxpayers continue to seek assistance with e-filing procedures, a trend that persists to this day. This reliance on the HASiL4U counters, commonly recognized as e-filing assistance centres, and the enduring preference for conventional manual tax submission methods underscore the complexities surrounding the acceptance and adoption of e-filing. According to IRBM's 2019 statistics, the visitors of HASiL4U counters increase from about 3.4 million in 2018 to about 3.5 million in 2019 (Inland Revenue Board of Malaysia, 2021). This highlights the pressing need for IRBM to proactively address this disparity, implementing corrective measures to enhance e-filing adoption.

The aims of this study are to suggest a framework for tax e-filing acceptance through the lens of people, process and technology innovation model and to develop proper hypotheses for the relationships between the independent variables (i.e., people, process and technology innovation) and the dependant variable (i.e., the acceptance of tax e-filing system). As such,

this paper is organised as follows: next section discusses tax e-filing system in Malaysia generally. This is followed by the discussion on people, process and technology innovation model and development of hypotheses for relationships between people, process, technology innovation and the acceptance of tax e-filing system.

2. TAX E-FILING SYSTEM IN MALAYSIA

Within the e-government framework, IRBM has undertaken the challenge of introducing e-filing with the aim of providing enhanced, efficient, and satisfying public interactions. E-filing transforms the conventional tax declaration method by modernizing its operations, making it more efficient and accessible. Taxpayers can engage with tax authorities via e-filing from any location at any time. In Malaysia, taxpayers can commence their e-filing submissions annually from March 1. E-filing has gained popularity due to its simplicity and user-friendliness. Unlike the complex traditional method that necessitates manual income tax form completion and calculations, e-filing automates the tax assessment process. E-filing has gained favour among taxpayers for its convenience, speed of tax filing, and faster tax refunds, as indicated in a study conducted by (Fatimah & Lai, 2008).

The substantial advantages of e-filing have been a driving force in its adoption, with increasing usage in Malaysia over the years. Nevertheless, technology failures, such as e-filing server instability leading to system disruptions, have been a recurring concern. IRBM has invested considerable effort in enhancing and maintaining the system to ensure taxpayers' convenience while using e-filing. Complaints have arisen due to prolonged waiting times and occasional inaccessibility during peak periods when the system becomes overloaded. Such instability has discouraged taxpayers from utilizing e-filing for tax declarations. In addition, according to IRBM's Annual Report for 2019, the visitors for physical counter opened by the IRBM around the country increased slightly from about 3.4 million in 2018 to about 3.5 million in 2019 (Inland Revenue Board of Malaysia, 2021) (this is the latest published annual report by the IRBM at the time of writing). The figures indicate that many taxpayers still need face-to-face consultation to file their tax returns despite the availability of tax e-filing system.

Another challenge faced by IRBM is the complexity of certain procedures, such as password reset and obtaining a PIN number, which require taxpayers and tax agents to visit the nearest branch office. These procedures have resulted in increased complaints and frustrations, especially among last-minute taxpayers who prefer manual submission. Simplifying these processes is crucial to increasing e-filing adoption.

Failure to address these challenges may deter taxpayers from choosing e-filing as their preferred tax declaration method. Therefore, this study aims to identify the factors influencing e-filing acceptance, whether related to people, processes, or technology, to help IRBM overcome these challenges and achieve a zero-rated manual tax filing system. These challenges indirectly impact taxpayers' choices between traditional and electronic income declaration methods.

3. PEOPLE, PROCESS AND TECHNOLOGY INNOVATION

The realms of technology acceptance and adoption have long been explored by prominent models such as the Technology Acceptance Model (TAM) introduced by Davis (1989), the Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1975), and the Theory of Planned

Behavior (TPB) proposed by Ajzen (1991). These models have gained renown in the context of understanding e-filing acceptance, as evidenced by studies conducted by researchers in Malaysia such as Azmi and Bee (2010), Yaso'a'MBA (2009), and Zamzami and Zulkafli (2023). These studies delve into the acceptance of information technology applications within e-government frameworks.

Nonetheless, there remains a paucity of studies investigating e-filing acceptance in Malaysia through the lens of the People, Process, and Technology (PPT) Model. Thus, this study endeavours to bridge this theoretical gap by employing the PPT model to probe into the acceptance of tax e-filing among Malaysian taxpayers. This research is in alignment with a study by Wood-Harper et al. (2004), which underscored that People, Process, and Technology (PPT) form interconnected success factors crucial for Malaysia's Electronic Government Initiative. Within the domain of e-government, "People" encompasses government officials and the public, "Process" pertains to the re-engineering of all government processes, and "Technology" encompasses information applications and technology systems.

Numerous studies have examined the success or failure factors of e-government systems, with these factors invariably tethered to the PPT framework. Noteworthy examples include studies by Bhattacharya et al. (2012) in India, Sarosa and Zowghi (2005) in Indonesia and Wood-Harper et al. (2004) in Malaysia that found PPT factors significantly determine the success or failure of e-government systems.

"People" within the PPT model entail individual activities, abilities, knowledge, performance, and improvement efforts, as articulated by Prodan et al. (2015). Meanwhile, the American Society for Quality (ASQ) posits that "Process" consists of a series of interconnected activities characterized by specific inputs and value-added tasks, culminating in a set of specific outputs (Pearson, 2009). "Technology" encompasses information management systems and is fortified by architecture, hardware, and software (Sorensen & Ing, 2006).

The PPT model enjoys widespread application across various industries and sizes, particularly in the realm of Information Technology (IT). It stands as a critical success factor in IT-related disciplines such as Information Technology Infrastructure Library (ITIL) and Customer Relationship Management (CRM). PPT elements made one of their initial appearances in the ITIL framework in the 1980s (Prodan et al., 2015). ITIL, a framework designed to align IT with business objectives, seeks to enhance efficiency and service delivery. Organizations employ ITIL to deliver value, formulate strategies, maintain competency, and create baselines for planning, implementation, and measurement.

Another illustration of PPT integration is in CRM applications. Chen and Popovich (2003) elucidate CRM as a customer-centric business model that integrates PPT elements to comprehend and manage customer relationships. The triumph or downfall of CRM hinges significantly on PPT factors. The CRM implementation model incorporates PPT within the context of an enterprise-wide, customer-driven, technology-integrated, and cross-functional framework. Effective customer relationship management not only enhances customer satisfaction but also bolsters loyalty rates (Fernando et al., 2023; Rahmani et al., 2023). Fig. 1 illustrates a CRM Implementation Model as suggested by Chen and Popovich (p. 676, 2003).

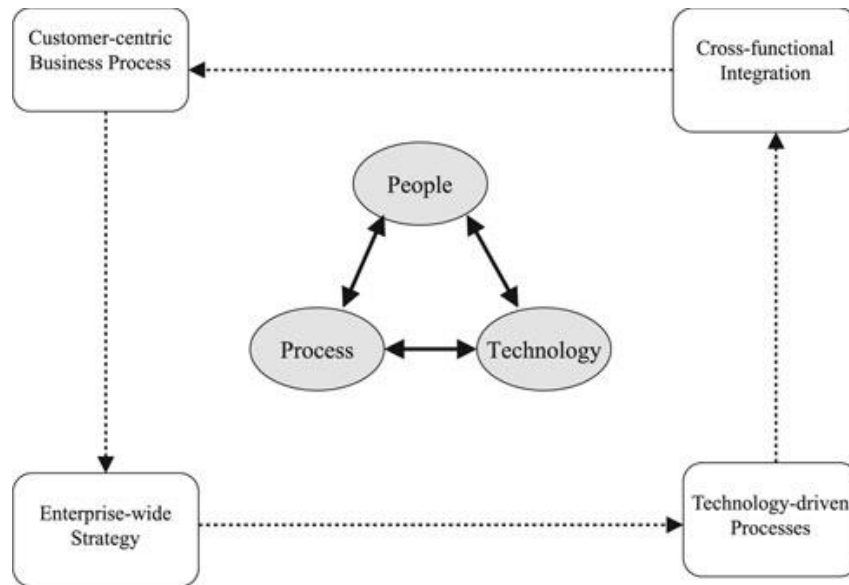


Fig. 1. A CRM Implementation Model.

Process Improvement Model (PIM) is a model that is closely related to PPT. The model was found extensively applied in various industries, particularly the IT sector, comprising three fundamental elements, namely People, Process, and Technology (PPT) (Prodan et al., 2015). This model aids organizations in enhancing their performance by concentrating on the areas of PPT. In the IT realm, the Information Technology Infrastructure Library (ITIL), which aligns IT with business objectives, incorporated the PPT concept into its framework in the 1980s.

Within the purview of PIM, "People" are those who possess the knowledge and skills required to carry out activities, are motivated to improve their daily performance, and strive for higher performance levels (Prodan et al., 2015). "Process" is defined as a set of interrelated work activities characterized by specific inputs and value-added tasks that make up a procedure for a set of specific outputs (Pearson, 2009). "Technology" directs the tools and techniques employed for efficient communication and work execution (Pearson, 2009).

In summary, the PPT model is a versatile framework for understanding the interplay between People, Process, and Technology in various contexts, including ITIL and CRM applications. It underpins the success of IT initiatives and offers valuable insights into the dynamics of knowledge management. This study tested the PPT factors in the context of tax e-filing system.

4. HYPOTHESES FOR THE RELATIONSHIPS BETWEEN PEOPLE, PROCESS, TECHNOLOGY INNOVATION AND TAX E-FILING ACCEPTANCE

4.1 People and Tax E-Filing Acceptance

People, encompassing both system users and providers, represent a pivotal asset for any organization. Their integration and interaction significantly dictate the success or failure of systems (Al Salmi, 2016). People, while a valuable resource, can also pose risks to the desired program outcomes, potentially contributing to incidents and accidents (Wood-Harper et al.,

2004) or, conversely, facilitating program success. Errors stemming from individuals can impede the achievement of desired outcomes.

According to (Al-Azri et al., 2010), the end-users' paradigm, referring to the individuals who establish and utilize systems, wields a profound influence over the success or failure of e-government initiatives. Success in e-government can be achieved when a comprehensive understanding of the critical success and failure factors is attained. Numerous studies conclude that the acceptance or rejection of e-government services hinges on citizens' willingness to use these services (Azmi & Bee, 2010; Chen et al., 2023).

Personal factors also exert a significant impact on taxpayers' intentions to use e-filing. One such factor is self-efficacy. Bandura (2006) defines self-efficacy as the belief in one's capabilities to consolidate and perform actions required to achieve specific accomplishments. Self-efficacy reflects individuals' belief in what they can or cannot do with their abilities (Tan & Foo, 2012) and their capacity to utilize technology to interact with systems (Bieattant et al., 2023).

Computer literacy skills similarly influence individuals' intentions to use systems. Higher computer literacy among individuals correlates with a greater eagerness to employ e-filing. Taxpayers possessing advanced technology skills are more inclined to embrace electronic services, while computer illiteracy often steers individuals toward traditional methods, particularly among older generations who may struggle with advanced technology (Reneland-Forsman, 2018)

Self-efficacy also plays a role in shaping individual attitudes and behaviours. High self-efficacy levels prompt individuals to persevere in the face of obstacles and master new skills (Bieattant et al., 2023). Elevated self-efficacy enhances the likelihood of individuals engaging in desired behaviours in the future (Bandura, 1982). Positive attitudes or behaviours are pivotal for the successful implementation of information technology, as recognized by empirical studies conducted by Davis and Songer (2008) and Carter and Schaupp (2008).

Numerous prior studies have underscored the significance of self-efficacy as a crucial factor positively influencing e-government acceptance. Research conducted by many studies (Carter & Schaupp, 2008; Suki & Ramayah, 2010; Wulandari & Dasman, 2023; Yulianto et al., 2021) have all identified self-efficacy as a critical determinant of e-government acceptance.

Perceptions related to security, privacy, and trust play a pivotal role in influencing individuals' choices to adopt and use online applications. A lack of trust in the security features of online transactions can deter citizens from utilizing online services. Trust in the context of the internet encompasses faith in the security features and performance structures of the online environment (Shapiro, 1987) which also include perceptions related to security, privacy of personal data, system stability, competency, and integrity all influence users' confidence in adopting or rejecting a system (Hooda et al., 2022). Online users are particularly concerned about security and privacy before opting for online services (Kanaan et al., 2023).

In situations involving online transactions, individuals encounter significant uncertainty, which may hinder their intentions to proceed. Trust serves as a means to mitigate this uncertainty (Kanaan et al., 2023). Emrah and Özkan (2009), in their study on users' perceptions of e-services, asserted that trust on the internet, advanced technology skills,

technology accessibility, and trust in e-government all influence the acceptance of government online services.

Furthermore, the perception of usefulness and ease of use can be considered as people factors that have consistently emerged as influential factors in taxpayers' acceptance of e-filing systems (Mpinganjira, 2015; Tahar et al., 2020; Venkatesh et al., 2003). When these elements are perceived to be at a lower level among taxpayers, the likelihood of e-filing acceptance tends to increase. This observation underscores the significance of these perceptions in shaping taxpayers' decisions.

As such, based on the existing literature, we propose the following hypothesis:

H1: There is a positive relationship between people and e-filing acceptance.

4.2 Process and Tax E-Filing Acceptance

Processes within an organizational context can be defined as a sequence of coordinated activities aimed at achieving specific objectives. These processes encompass the integration of people, technology, information, and structural components in alignment with an organization's mission and objectives (Wood-Harper et al., 2004). Ineffective processes can lead to a myriad of problems, including customer complaints regarding subpar products or services, escalating costs, and resource wastage. Procedures that fail to cater to the needs of customers can result in negative impressions, prompting customers to take actions such as spreading negative word-of-mouth. Such consequences can erode a company's customer base and profitability. Research by Rauyruen and Miller (2007) highlights that firms can substantially enhance their profitability by offering safe products and services to loyal customers.

Failures in service delivery can often be traced back to flawed processes, which fail to meet operational standards and disrupt the service delivery system. Such failures invariably impact user satisfaction, a critical driver, particularly in the context of online customers and the establishment of long-term customer loyalty. User satisfaction can be defined as the attitude or reaction of customers toward services or products, comparing their expectations with the actual experience (Griffiths et al., 2007).

Customer satisfaction forms the bedrock for building customer loyalty, a cornerstone for a company's survival. Anderson and Srinivasan (2003) assert that customer loyalty contributes to enhanced profitability, as satisfied customers are more likely to return and engage in repeated business transactions. Ideally, satisfied customers not only return but also become brand advocates, sharing their positive experiences with others. Many studies indicated that user satisfaction emerged as a key determinant of the success of e-Government initiatives (Byun & Finnie, 2011; Irani et al., 2012; Wirtz & Kurtz, 2016).

The relationship between processes and e-filing acceptance warrants exploration. In this study, processes refer to the set of procedures that fall below the e-filing standard requirements, failing to meet user expectations. The Inland Revenue Board of Malaysia (IRBM) should prioritize ensuring that e-filing systems are up-to-date, user-friendly, with clear, relevant, accurate, effective, and efficient procedures. Such efforts are essential to encourage taxpayers to voluntarily embrace e-filing. Research by (Azmi & Bee, 2010)

corroborates the positive effects of system usefulness and ease of use on behavioural intentions, driving taxpayers to choose e-filing for their tax returns.

In this study, process challenges are manifested in issues related to login procedures and password reset complexities. A majority of taxpayers have expressed dissatisfaction with these convoluted processes. For the 2017 requirements, obtaining the e-filing 16-digit PIN and resetting e-filing passwords (for taxpayers who did not input their phone number or email address into the e-filing system) necessitated physical visits to the nearest IRBM office. This often required taxpayers to take leave, queue for extended periods, especially during peak times, and resulted in frustration. These cumbersome procedures have likely contributed to the low acceptance of e-filing.

In addition to login issues, taxpayers have voiced complaints about the user-unfriendly nature of e-filing systems. These include the absence of a "next" button for navigating between pages, excessively short time limits for using e-filing, incomplete item information, slow processing, and occasional system hang-ups. Furthermore, concerns about the security and privacy of e-filing persist. These procedural inefficiencies have become a prominent deterrent for taxpayers when considering e-filing as their preferred tax return submission method. Processes involved in using e-filing must strike a balance between simplicity and effectiveness while providing comprehensive process documentation. Transparency, reliability, and high-level security are essential attributes for e-filing processes to engender trust and loyalty among taxpayers.

In-line with the definition of process above, process can be measured by assessing the degree of complexity in e-filing procedures, the extent of user satisfaction, and the perceived reliability of e-filing. Moore and Benbasat (1991) have demonstrated that a complex user interface, characterized by intricate procedures and instructions, can diminish system acceptance among users. Conversely, Featherman and Pavlou (2003) found that problematic system performance, usage uncertainties, and performance issues reduce the number of system users.

The dimensions of trustworthiness that influence user preferences in e-filing encompass perceived technical competence of the system, perceived performance in terms of speed, reliability, and availability, and human operators' understanding of the system's underlying characteristics. Accordingly, the following hypothesis is proposed:

H2: There is a positive relationship between processes and e-filing acceptance.

4.3 Technology Innovation and Tax E-Filing Acceptance

In this era of globalization and intense competition, the role of technology in supporting robust systems cannot be overstated. Technology, including the internet and computers, has become an indispensable part of human life, offering countless benefits for improving our daily existence. However, it is crucial to recognize that technology can also pose significant risks to entire systems. When technology malfunctions or fails, the consequences can be catastrophic for both consumers and businesses. Sarosa and Zowghi (2005) refer to such occurrences as "technology hiccups" – when one or more e-Government systems do not function as intended, leading to system disruptions and unavailability.

Technology or system failures can profoundly impact the overall application process. Mohamad et al. (2019) assert that technology hiccups often arise due to obsolete technology, system requirements mismatches, and inadequate documentation. Organizations must remain vigilant in assessing and aligning their processes with current technology to ensure user satisfaction. Therefore, meticulous planning and examination of existing processes are imperative before implementing a new system.

The increased use of information technology, particularly among the older demographic, has heightened concerns about the risks associated with online transactions. When customers harbour suspicions about a system's reliability, they naturally become apprehensive about potential delays, payment issues, and illicit activities. A successful system must offer excellent facilities, such as an attractive website design, to attract and retain (Lau, 2004). Besides factors such as accessibility, security, privacy, efficiency, confidence, and trustworthiness in the adoption of e-government services, ultimately, individuals' attitudes and beliefs about technology significantly shape their intentions to embrace e-filing (Afrizal & Wallang, 2021).

Despite the reengineering of the e-filing process, making it simpler, faster, and virtually error-free over the past decade, there remain taxpayers unwilling to utilize e-filing. The acceptance of technology among taxpayers is a pivotal determinant of whether they will adopt e-filing. Individual intentions to use technology are contingent upon taxpayers' expectations that e-filing is user-friendly and easy to navigate. Conversely, if taxpayers perceive it as complex or unfriendly, they may opt not to use e-filing. Previous research provides compelling evidence that user satisfaction, the time required for system use, the image of the application, and other factors related to system use exhibit a positive relationship with the adoption of information technology (Azmi & Bee, 2010; Tan & Foo, 2012; Yasoa'MBA, 2009).

In this study, the term "technology" refers to issues within the e-filing system that disrupt its operation, encompassing factors such as system currency, maintenance, and server or e-filing network backups. The assessment of technology in this study considers e-filing's user-friendliness, ease of access, system flexibility, and security. According to (Venkatesh et al., 2003), the technology's context can significantly influence the adoption and use of the system. Furthermore, design characteristics, such as ease of use and usefulness, are positively associated with system acceptance (Anderson & Srinivasan, 2003). Neglecting design characteristics can not only lead to system failures but also reduce the number of existing adopters. A user-friendly system not only enhances users' sense of control but also boosts their self-efficacy in utilizing the system. The provision of relevant, timely, accurate, and comprehensible information influences individuals to accept the system.

Therefore, the corresponding hypothesis for this study is as follows:

H3: There is a positive relationship between technology innovation and e-filing acceptance.

5. PPT TAX E-FILING FRAMEWORK AND ITS HYPOTHESES

This study proposing a people, process and technology innovation as the determinants of tax e-filing system acceptance. Research framework proposed by this study is illustrated in Fig. 3 explained the three elements of PPT factors towards e-filing acceptance.

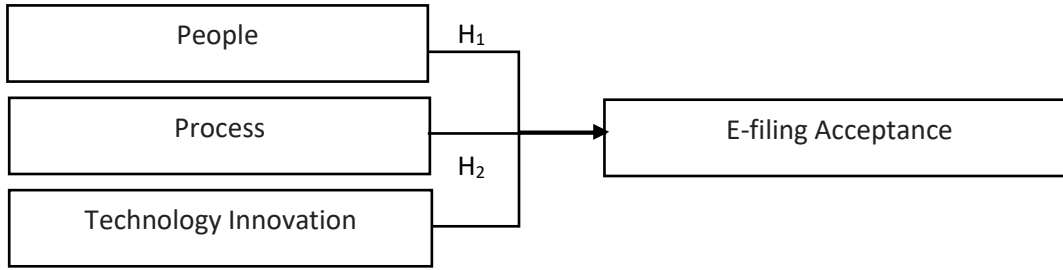


Fig. 3. PPT E-Filing Acceptance Framework

Based on the discussion in previous section, the hypotheses that were developed to be tested for each of the relationship in the framework are summarised in Table 1 below.

Table 1. Hypotheses for the PPT E-Filing Acceptance Framework

No.	Hypothesis Statement
H1	There is a positive relationship between people and e-filing acceptance.
H2	There is a positive relationship between processes and e-filing acceptance.
H3	There is a positive relationship between technology innovation and e-filing acceptance.

6. CONCLUSION

Complex procedures pose significant challenges for the Inland Revenue Board of Malaysia (IRBM). One illustrative example is the process for resetting passwords and obtaining PIN numbers, which has compelled taxpayers and tax agents to visit the nearest branch office. These intricate procedures have led to an increase in complaints, burdens, and, ultimately, frustration among taxpayers, especially those who file their taxes at the last minute. Faced with these cumbersome processes, many taxpayers have opted to submit their tax forms manually rather than through e-filing. To encourage greater adoption of e-filing, IRBM should consider simplifying these procedures.

The presence of such challenges can create hesitancy among taxpayers when it comes to utilizing e-filing for tax submissions. It is imperative for IRBM to address and minimize these challenges to ensure the continued viability of e-filing, with the ultimate goal of achieving a significant reduction in manual tax form submissions. These challenges play an indirect yet pivotal role in influencing taxpayers' choices regarding the method of income declaration, be it traditional or electronic.

For future research endeavours, it is recommended for researchers to employ the same theoretical framework using survey questionnaire or qualitative methods to gauge the perceptions of PPT on the acceptance of e-filing system among individual taxpayers. However, using the interview method when engaging with non-e-filers as respondents to gain in-depth understanding seems more suitable. This approach is anticipated to yield more robust outcomes in uncovering the factors impeding the acceptance of e-filing. Moreover, forthcoming research should emphasize investigating the underlying causes influencing individuals' attitudes towards e-filing acceptance. This can be achieved through a thorough examination of individual characteristics and the level of management support in the context of e-filing adoption.

7. ACKNOWLEDGEMENT

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Expanding the UTAUT Model: A Conceptual Framework Integrating Trust and Religiosity in Zakat Online Payment among Microenterprises in Kedah

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Abstract: *The aim of this study is to investigate the intention of using the Zakat online payment among the micro entrepreneurs using the UTAUT model that includes trust and religiosity as additional variables to determine the intention. This study used the extended unified theory of acceptance and use of technology (UTAUT) as the theoretical framework, where trust and religiosity are added to the model's main components (i.e. performance expectancy and social influence). Primary data was collected through an online survey involving 110 micro-entrepreneurs in the state of Kedah who are active and registered with the Company Commission of Malaysia (SSM), an agency under the Ministry of Domestic Trade, Cooperation, and Use (KPDNKK). The structural equation modeling is used as the empirical approach. The findings indicate that trust, performance expectancy, and social influence significantly affect the intention to use zakat online payment among the micro entrepreneurs in Kedah. However, religiosity is found to be insignificant in this study. This research could aid zakat organizations and policymakers in structuring payment methods to attract zakat contributors. This study demonstrates zakat payers' willingness to switch from traditional to digital payment methods.*

Keywords: Zakat, Online Payment, Trust, Religiosity, Micro-entrepreneurs, UTAUT

1. INTRODUCTION

Several research works have discussed the usage of technology when collecting zakat in Malaysia (Yahya & Ahmad, 2019, Ibrahim, 2016, Tantriana & Rahmawati, 2018). Kaslam (2009) observes that e-zakat has surfaced as one of the government's programs for assimilating internet applications and is utilised to back the way zakat institutions render services, particularly in the gathering and distribution of zakat treasuries. This outlook is backed by Chowdhury et. al. (2012) who noted that utilising online applications can decrease leakage issues in fiscal management and enhance service efficacy. The goal of this study is to examine the UTAUT model that includes trust and religiosity as additional variables to determine the intention of Muslim micro-entrepreneurs in using the Zakat online payment. This study builds on the UTAUT model to look at how Muslim business owners' intent to use technology as well as to demonstrate their willingness to switch from traditional to digital payment methods. UTAUT is one of the most recent models of technology acceptance created by Venkatesh et al. in 2003. UTAUT integrates eight prior theories of technology acceptance into a single theory. It is regarded as a useful theory for evaluating the

introduction of recent technologies and comprehending acceptance factors, which can contribute to the design of multiple interventions such as training, campaign programs, and website designs aimed at encouraging individuals to adopt and utilize the new system. According to Khechine et al. (2016), the UTAUT model is the most accurate model for predicting the intention to implement and utilize recent technology. Venkatesh et al. (2003) stated that UTAUT was more effective than the other theories in explaining up to 70% of the variance in the intention to use technology.

The paper is structured as follows. The second section examines previous research on the topic. The third section describes the methodology utilized to accomplish the aims of this study. Section 4 contains the findings. Section 5 discusses this research's contribution and makes suggestions for future research.

2. LITERATURE REVIEW

Zakat contributes significantly to the financial growth of the Ummah. Zakat is a significant factor in governing Muslim properties in Malaysia and other Islamic nations (Abdullah & Ali, 2017). It is because zakat is an important means by which income equality is achieved. With a well-organised zakat custom, it enables financial growth and income equivalence - in other words, equity of income (Saefuddin, 1986). Additionally, zakat not only contributes to the economy of the Muslim nations by efficiently using zakat funds but also is an income source to the nation (Hamizul, 2012). Zakat impacts consumption through marginal tendency of zakat receivers who use zakat money on fundamental needs. Zakat consumption and CSR (corporate social responsibility) are related and sometimes is used as a means for social marketing (Abdullahi, 2019).

Today, technology plays a crucial role in facilitating and simplifying people's daily activities, such as online bill and debt payment and zakat payment. This simplifies matters, as Muslims no longer need to pay in person at the counter, but can instead do so via computer or mobile device. The applicability of information systems has been improved with the progression of technologies. The traditional manual systems are fast being substituted by new, user-friendly technologies that help to surmount the ineffectiveness and inefficiencies of government services. However, the existing information on electronic zakat applications in Malaysia indicates the contrary. For instance, factors such as dilapidated facilities, security issues, outdated software, inaccessible internet connection, low internet bandwidth, contribute to the lack of e-zakat adoption in government agencies (Hairunnizam et al., 2004). Moreover, there are challenges with citizens such as a lack formal education, aging population, unemployment, and physical or mental disabilities that contribute to the low usage of e-zakat, as these citizens are completely out of touch with the ICT development. The data published recently on internet usage indicate that 70 percent of internet access are concentrated in the major cities such as Pulau Pinang, Kuala Lumpur, Selangor, and Johor Baharu (MAMPU, 2011), where on the other hand, rural areas lack any sort of telecommunication infrastructure. This kind of significant gap in digital infrastructure compels the government to take essential steps that will ensure that low-income citizens in rural areas can also have equal access to and participation in ICT.

Although several studies have been conducted in Malaysia on zakat compliance (Hairunnizam et al., 2004; Abu Bakar & Abdul Rashid, 2010; Arif et al., 2011; Abu Bakar & Abd. Ghani, 2011; Siska & Siswantoro, 2012; Sapingi et al., 2013), it is difficult to find studies related to zakat literature on the zakat cashless payment system environment. Studies

conducted on the factors that impact the usage of e-zakat in Malaysia are still in nascent stage. A few literatures exist on zakat that emphasises on the manual method of zakat payment. The majority of research works carried out by Malaysian academics are on zakat compliance such as Sapongi et al., 2011; Azman et al., 2015; Mohmad Zaki, 2008; Husna, 2009; Othman, 2011 and Saad, Aziz and Sawandi, 2014. As concern, there are lack of studies on zakat that are related to the digital environment. Due to this reason, the present study tries to explore the determinants of the usage of zakat cashless payment system in Malaysia.

2.1. Underpinning Theory and Research Framework

Based on a review of the previous literature, Venkatesh et al. (2003) developed UTAUT as a comprehensive synthesis of prior technology acceptance research. UTAUT has four key constructs (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) that influence behavioral intention to use a technology. This study adapts these constructs and definitions from UTAUT to the Muslim entrepreneurs/zakat payer technology acceptance and use context. Here, performance expectancy is defined as the degree to which using a technology will provide benefits to entrepreneurs in paying zakat; effort expectancy is the degree of ease associated with entrepreneurs' use of technology; social influence is the extent to which entrepreneurs perceive that important others (e.g., family and friends) believe they should use a particular technology; and facilitating conditions refer to entrepreneurs' perceptions of the resources and support available to perform a behavior (e.g., Brown and Venkatesh 2005; Venkatesh et al. 2003). According to UTAUT, performance expectancy, effort expectancy, and social influence are theorized to influence behavioral intention to use a technology, while behavioral intention and facilitating conditions determine technology use. Also, individual difference variables, namely age, gender, and experience and voluntariness are theorized to moderate various UTAUT relationships.

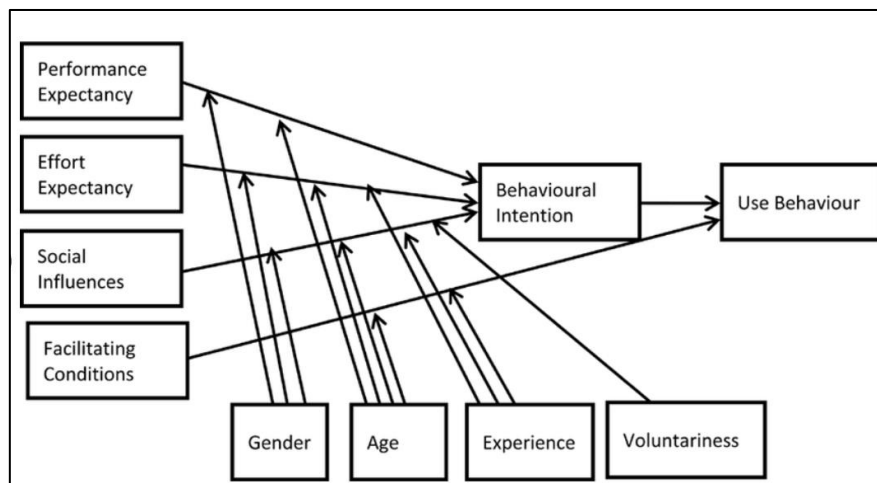


Fig. 1. Unified Theory of Acceptance and Use of Technology (UTAUT) model

The transformation of traditional modes of Zakat, towards online platforms presents unique challenges and opportunities. To better understand and predict the factors that influence individuals' intentions to use zakat online payment services, this research extends the Unified Theory of Acceptance and Use of Technology (UTAUT) model, incorporating the pivotal constructs of Trust and Religiosity.

The conceptual framework seeks to shed light on the complex dynamics of technology adoption in the context of Zakat Online Payment by integrating these additional elements.

Trust, recognized as a fundamental element in online transactions, plays a central role in shaping individuals' intentions to engage with e-zakat systems. Religiosity, on the other hand, reflects the degree of religious devotion, potentially influencing the way individuals approach their zakat obligations in the digital era.

In the following sections, we will delve into the components of this extended UTAUT framework, highlighting the significance of Trust and Religiosity in shaping users' intentions to adopt Zakat Online Payment. Through empirical research and analysis, we aim to contribute to a deeper understanding of technology adoption in the realm of religious philanthropy, with the ultimate goal of enhancing the effectiveness and accessibility of e-zakat services.

2.2. Hypotheses Development

The relationship between trust and behavioral intention is consistent with the Trust Model by Myers (1995). The theory claims that trust is a party's willingness to be vulnerable to the actions of another party based on the expectation that the other party will perform a specific action that is important to the vulnerable party, regardless of the vulnerable party's ability to monitor or control the other party. Kim et al. (2009) define trust as the assumption that the other party in an exchange relationship will behave dependably. Jarvenpaa and Tractinsky (1999) define trust in the context of Internet shopping malls as a consumer's propensity to rely on the vendor and take action when doing so renders them exposed to the seller. With regards to the relationship between trust and behavioral intention of micro-entrepreneurs to use zakat cashless payment system, therefore, the following hypothesis is formulated:

H1: Trust is positively associated with intention to use e-zakat.

This hypothesis suggests that individuals who have a higher level of trust in e-zakat systems are more likely to have the intention to use them. Trust is a fundamental element in the context of online transactions, as individuals need to trust the system to ensure the secure and proper handling of their zakat payments.

Al Mamun et. al. (2019) found that religiosity of muslim consumers are positive significant factors of growing perceptions towards tax rebate over zakat on income in Malaysia. Abdullah (2017) research shows that three dimensions of religiosity, namely obligation, virtues and vices and optional ritual had significant influence on zakat compliance. Furthermore, religiosity is found to have minimal but statistically significant positive impact on voluntary tax compliance (Ali & Pope, 2014). The above discussion shows that religiosity influences the behaviour, social norms and intention to pay zakat. Hence, the purpose of the present study is to analyse and explore the relationship between religiosity and the intention to use e-zakat. Based on this, the following hypothesis is formulated:

H2: Religiosity is positively associated with intention to use e-zakat.

This hypothesis suggests that individuals with a strong sense of religiosity, or religious devotion, are more likely to have the intention to use e-zakat services. This reflects the notion that individuals who prioritize their religious obligations may be more inclined to adopt online platforms for zakat payments.

Performance expectation is the degree to which an individual believes that utilizing the system would improve his/her job performance. Under the UTAUT paradigm, performance expectation is defined as when a person believes that key others believe he or she should use a new system and that using that system will help individuals enhance their performance (Venkatesh et al., 2003). In other terms, performance expectation is the anticipation of a system's performance in enhancing the efficiency of an online activity. Consequently, in the context of this study, performance expectation may be conceptualised as the extent to which participants believe that using online platforms to pay zakat will increase their efficiency, particularly with regard to payment.

H3: Performance Expectancy is positively associated with intention to use e-zakat.

This hypothesis posits that individuals who expect e-zakat systems to perform effectively and meet their needs are more likely to intend to use them. Performance Expectancy relates to users' perceptions of the system's usability and utility.

Numerous research have proven that social influence promotes technological adoption (Venkatesh et al., 2003; Sudeep, 2007). Karahanna and Straub (1999) found that social influence strongly affects technology use. Through the UTAUT model, Martins et al. (2014) found that social impact strongly predicts internet banking adoption. Abbasiet al. (2011) found that social influence boosts internet banking intentions. Mathieson (1991), Lewis et al. (2003), Shih and Fang (2004), and Malhotra and Galletta (1999) found no social influence on behavioural intention.

H4: Social Influence is positively associated with intention to use e-zakat.

This hypothesis suggests that individuals who perceive a higher level of social influence or pressure from their peers and social networks to use e-zakat are more likely to have the intention to use this payment method.

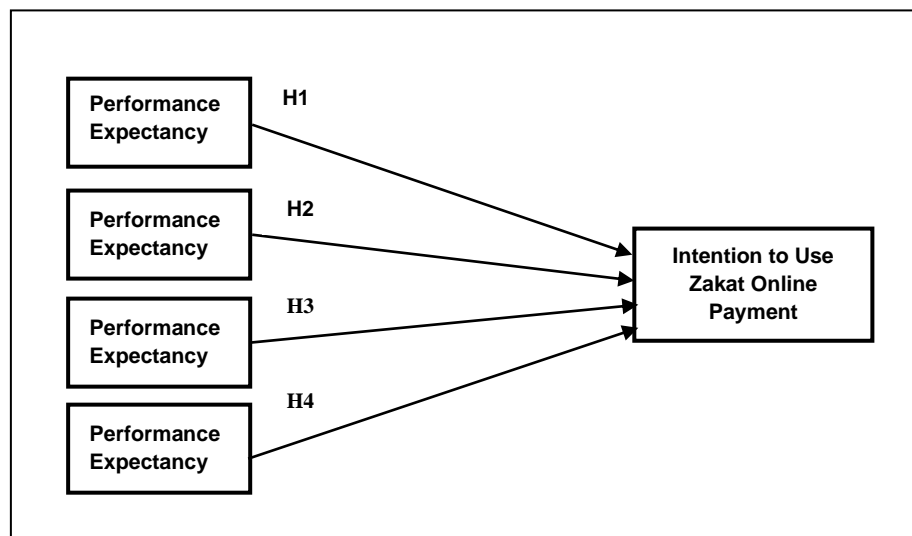


Fig. 2. Research Framework

3. METHODOLOGY

The population for this study comprises all the micro entrepreneurs in the state of Kedah who is active and registered with the Company Commission of Malaysia (SSM). The study

samples micro entrepreneurs who were engaged in their business in 2020. This particular demographic is being singled out because their contributions to the overall zakat collection are relatively low. The list of traders 2020 is an active trader throughout 2021 and the one year period (2020-2021) is known as *haul* period for them to pay zakat. Data for this study was obtained from 110 cross-sectional survey conducted during a specific time period. This sample size exceeds the size recommended by Hair, Anderson, Tatham, and Black (1998), who set it between 100 and 200 respondents to ensure that samples are sufficient for statistical analysis employing Structural Equation Modelling (SEM). To meet the requirements of the study, all questionnaire items were adapted and modified based on existing UTAUT models.

4. CONCLUSION

In conclusion, the current study delved into the direct relationships between Behavioral Intention, Trust, Performance Expectancy, Religiosity, and Social Influence in the context of Zakat Online Payment. This novel framework builds upon well-established research in the fields of technology adoption, religiosity, and social influence. This study posit that understanding the interplay between these constructs in the context of zakat online payment services will not only provide a more comprehensive understanding of user intentions but also offer valuable insights for zakat institutions and policymakers seeking to promote online payment services tailored to diverse individual needs and preferences. The result will shed light on the multifaceted dynamics of technology adoption in the context of trust and religious obligations, offering valuable insights for zakat institutions and policymakers in promoting online payment services tailored to diverse individual needs and preferences.

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