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Content Analysis of Sustainable Development Goals Information on Malaysian City Councils' Websites

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Abstract

Purpose: The objective of this paper is to examine: 1) the type of Sustainable Development Goals (SDGs) information (financial and non-financial) and 2) the extent of SDGs information disclosed on Malaysian city councils' websites.

Design/Methodology/Approach: The Sustainability Development Goals Disclosure Index (SDGDi) consists of 150 items used as the instrument for content analysis to achieve the objective.

Findings: The analysis of websites revealed that more non-financial sustainable development goals information is disclosed compared to financial information. On average, 28 out of 150 items of SDGDi were disclosed, which suggests a 'fair' level of SDGs information disclosure. Of all the SDGDi categories, SDG 9 (industry, innovation, and infrastructure) score was the highest, while SDG 14 (life below water) was the lowest.

Practical Implication: This paper contributes significantly to the literature on the disclosure of SDGs information, particularly in the local authority context. It is also useful for the local authority to improve its disclosure practices to promote better sustainability.

This article is part of a research on Sustainable Development Goals Disclosure on Malaysian Local Authority Websites, supported by the Accountant General's Department through *Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Bil. 1 Tahun 2021* (JANM.IPNC PD.100-3/3/2 Jld. 2(7)).

Originality/Value: This paper is among the first papers that used a newly developed Sustainability Development Goals Disclosure Index (SDGDi) to measure the readiness of Malaysian local authorities to advance the sustainable development agenda via disclosure practices.

Keywords: Sustainable development goals, local authority, disclosure, website.

Introduction

Sustainable development is always the focus for all countries globally, making the world a better place for future generations. It began with the establishment of the Millennium Development Goals (MDGs) in 2000, superseded by the Sustainable Development Goals (SDGs) in 2015. The increasing awareness and call for urgent action in both businesses and communities on the growing importance of sustainability have signalled the high commitment of governments worldwide (Ahmed, 2019), including Malaysia, towards public accountability. One way to discharge public accountability is by implementing sustainability reporting. In moving towards becoming a high-nation status, the 2030 SDGs Agenda becomes a boost for Malaysia to carry out the sustainable development agenda. This can be seen in the inclusion of the SDGs principles in all aspects of Malaysia's five-year development plan that covers the period 2016 to 2020. With 17 goals of the SDGs Agenda, 'Anchoring Growth on People' is selected as the theme for the development plan, indicating the commitment of our government towards the people in our country and in line with the government's aspiration to steer a sustainable development agenda. This is relevant to the local government¹, which is the closest tier to the community at large.

Although SDGs research has made significant progress in many areas and strives to integrate knowledge from the environmental, social and economic sciences, it still needs new knowledge to find novel ways to secure the future (Nieman & Hoppe, 2018). More specifically, Nieman and Hoppe (2018), in their study on disclosure by the local governments in Switzerland, Netherlands, Germany, Ireland, and Germany, concluded that the local governments lacked insights and relevant data. They further described that the local governments struggled to maintain public interest over time, as well as lacked news value and politically salient information.

In Malaysia, despite the inclusion of SDGs principles in all aspects of Malaysia's five-year development plan, SDGs are still a voluntary disclosure by the local government. Therefore, it is timely to develop a disclosure index that will be useful to measure the level of SDGs implementation and commitment among local authorities in Malaysia (see Joseph et. al.,

¹ Local government, local council, and local authority are interchangeably used in this paper.

2021). To date, several local authorities in Malaysia, such as Shah Alam, Seberang Perai, and Ipoh, acknowledge the importance of SDGs implementation at the local level and have prepared their SDGs Voluntary Local Review (VLR) Report. Forthcoming, a few other city councils, including Alor Gajah, Kuala Lumpur, Subang Jaya, Putrajaya, and Melaka, were suggested by Stefan Priesner, the United Nations Coordinator for Malaysia, Singapore, and Brunei, to carry out their VLR.

SDG implementation requires collaboration and development efforts across all sectors and levels of authority. In developed countries, SDG 17 has already entered a maturity stage in enhancing disclosure credibility and is already talking about the assurance stages. However, in Malaysia, the level of awareness of SDGs is still unknown. The presence of instructions on how to accomplish it in the form of standards for the disclosure index will also further improve it (Bardal, 2021). This paper is a continuation of Joseph et. al.'s work (2021) that has developed the Sustainable Development Goals Disclosure Index to measure the extent of SDG information on websites. Thus, in examining the local government's commitment towards advancing the United Nations SDGs, it is imperative to examine the extent of SDGs information disclosed on websites as a strategic tool under the public sector reform agenda. Therefore, the following objectives have been formulated:

1. To examine the type of sustainable development goals information (financial and non-financial) disclosed on Malaysian city councils' websites.
2. To examine the extent of sustainable development goals information disclosed on Malaysian city councils' websites.

This paper is organised as follows: the next section reviews prior literature related to sustainability and its reporting. Next, the research methodology used in this paper is discussed, followed by a presentation and discussion of the SDGDi findings. Finally, this paper concludes with remarkable findings, significant contributions, and potential SDG areas to be explored for future research.

Literature Review

Sustainability is the key to sustainable development, which comprises a three-pillared concept consisting of economic, environmental, and social dimensions (Lee & Jung, 2019). The sustainability development issues have been mostly discussed today and gained attention from current global communities (Mutiarani & Siswantoro, 2020). The concept of sustainable development is increasingly becoming part of various areas of life and the development of decisions made by man (Kapera, 2018). This can be observed by a number of studies that incorporate sustainability in various areas, such as economics, educational psychology, energy, entrepreneurship, ethics, Islamic, engineering, agriculture, architecture, tourism, innovation, sciences, and many more.

The global goals to achieve a better and sustainable future for all have been incorporated into the Sustainable Development Goals (SDGs) agenda, which provides a powerful aspiration for improving the world. With 17 goals and 169 targets, the SDGs' implementation and achievement have been communicated with stakeholders through the integration of the SDGs into the non-financial report. This serves as a way of increasing accountability towards society (Bebington & Unerman, 2018). SDGs reporting plays an important role in engaging the stakeholders, enhancing sustainable decision-making processes (Frey, 2021), and revealing their legitimacy on issues related to sustainability (Alcaraz-Quiles, Navarro-Galera & Ortiz-Rodríguez, 2015). Better reporting enables organisations to understand, communicate, and manage their contributions to SDGs.

Current research (Izzo, Ciaburri & Tiscini, 2020; Hummel & Szekely, 2021) has shown that a lot of information on SDGs has been narratively published, although the precise essence and criteria of SDGs and the descriptions of specific key performance indicators (KPIs) related to those goals are still missing. In most cases, organisations tend to publish information about their commitments to SDGs using non-financial statements and sustainability reports (Izzo et al., 2020). Others might use integrated reporting (Hummel & Szekely, 2021).

To better achieve a sustainable future, it requires local action, which can be realised by localising the SDGs agenda. Public sector organisations (PSOs) play a crucial role in society by connecting the government to businesses and civil society organisations while also offering a range of services. The inclusion of sustainability demonstrates that organisational processes for management, strategy, and governance have begun to evolve (Lozano, 2022). Local governments with a strong institutional environment supporting their citizens' participation are more effective without jeopardising their official functions or processes (Khoo & Tan, 2019). However, Niemann and Hoppe (2018) suggested that in order to achieve sustainable development in the local governments, more extensive strategies would be required as there are many stakeholders within the local governments, and hence, more extensive, multiyear reports with summarised information in several forms of dissemination mode are required. It has been emphasised in the United Cities, and Local Governments (UCLG) Report 2015 (UCLG, 2015, p.2) that 'local governments are policy makers, catalysts of change and the level of government best-placed to link the global goals with local communities'.

Due to the public sector's crucial position in society, stakeholders have consistently put pressure on it to be more accountable. A growing requirement for sustainability and SDG reporting has also evolved (Stefanescu, 2021). Local authorities must carefully plan their SDG activities to ensure the SDGs are implemented successfully. According to Bardal et al. (2021), the local authority's capacity to execute the SDGs in local authority is impacted by financial, technical, knowledge, political, cultural, institutional, and legal considerations.

Several recent studies examined the disclosure and achievement of SDGs by local governments. For instance, Guerrero-Gómez, Navarro-Galera, and Ortiz-Rodríguez (2021)

analysed the factors determining the online transparency on the sustainability of local governments in Latin America, which are helpful to achieving the SDGs. On average, the local governments in Latin America published only 60% of the SDGs information on their websites. Another study by Joseph, Gunawan, Madi, Janggu, Rahmat, and Mohamed (2019), incorporated the integrity aspect into the disclosure framework developed based on SDG 16. It compared the extent of integrity framework information disclosed on Malaysian and Indonesian local authorities' websites. The results of the study revealed that the Indonesian local authorities outperformed the Malaysian local authorities in terms of the online integrity framework information disclosure. Mutiarani and Siswantoro (2020) identified that the accomplishment of SDGs in the Indonesian provinces was dependent on the local governments' characteristics, such as region size, number of regional work units, and the existence of local own-source revenue. Based on the literature review, the examination of SDG information on websites is still lacking. Thus, an examination of city councils' websites is vital to assess the readiness of Malaysian larger councils to commit to the sustainable development agenda via disclosure practices.

Research Methodology

The entire 19 city councils were selected as the sample for this paper (see Ahmad, et. al, 2021). The list of city councils' websites is available at: http://www.epbt.gov.my/osc/PBT2_index.cfm?Neg=00&Taraf=0. The examination of websites was carried out in April 2021. The analysis was carried out on the websites of these 19 city councils with the assumption that the city councils had fully utilised the websites as the official medium for disseminating information. However, during data collection, one city council's website was inaccessible due to maintenance and update. The disclosure of SDGs information on city councils' websites was observed using content analysis. A new Sustainability Development Goals Disclosure Index (SDGDi) was adopted to determine the type and the extent of SDGs information disclosed on the websites of the city councils (see Joseph et al., 2021). Each item in SDGDi is dichotomous – i.e. a score of '1' if the information was disclosed on the websites, '0' if otherwise. This was in consistency with Guerrero-Gómez et al. (2021) and Joseph et al. (2019). The SDGDi is a comprehensive checklist that consists of 150 items developed based on the SDGs recommendation made by Adams, Druckman, and Picot (2020), SDGs 2030, Malaysian SDG Roadmap, and Star Rating System for Malaysian Local Authorities. Several studies (Joseph et al., 2019; Midin, Joseph, & Mohamed, 2017) served as references for the examination of the website disclosure by the local authorities. The steps involved in measuring the total amount of information disclosures are as follows:

- Step 1 - examine the websites of the 19 city councils in Malaysia
- Step 2 - classify the information based on the categories of SDGDi
- Step 3 - count the total amount of SDGs information disclosed on the websites based on the categories of SDGDi
- Step 4 - record the scores in the scoring sheet
- Step 5 - calculate the total amount of the SDGs information disclosed on the websites

An unweighted approach to scoring was adopted in this study to achieve the first and second objectives, where each index item was given a score of '1' if the item was disclosed and '0' if otherwise. The unweighted scoring approach is selected over the weighted scoring approach because it is believed to have the same result as the weighted scoring approach (Joseph et. al., 2019). The total SDGDi score is mathematically expressed in the equation, as follows:

$$SDGDi = \frac{\sum_{i=1}^n X_{ij}}{n_j}$$

Where:

SDGDi = Total sustainable development goals disclosure Index

n_j = Number of items expected for the local authorities n_j ≤ x items

X_{ij} = "1" if the local authority discloses the items and "0" if otherwise

Results and Discussion

The results were generated and presented for the extent of SDGs information disclosed on the websites of 18 city councils. Furthermore, through content analysis, the type of SDGs information (financial and non-financial) disclosed can be identified. It was found that more SDGs qualitative information was disclosed on the websites of city councils as compared to quantitative information. Despite the different units of analysis (website versus annual report), the finding of this paper in terms of the information type was consistent with Hummel and Szekely's study (2021) in examining the disclosure of SDGs in the European firms' annual reports. The results were presented for the overall SDGDi and for each category of SDGDi.

The descriptive statistics, as shown in Table 1, revealed that on average, the Malaysian city councils disclosed 28 out of 150 items related to SDGs information on their websites. The disclosure represents 18.78 per cent of the total disclosure items of SDGDi. The level of disclosure suggests a 'fair level'² of the extent of disclosure of SDGs information on the Malaysian city councils' websites. In comparison with a prior study by Joseph et al. (2019), which examined the disclosure of integrity information by Malaysian local authorities, the result of this study was comparatively lower. Hence, this indicates that the extent of the SDGs information disclosure on the websites of the city councils needs to be improved in future.

² Joseph et al. (2018) introduced five scales of disclosure index (DI), which were classified into poor (DI between 0.00-0.20), fair (DI between 0.21 – 0.40), satisfactory (DI between 0.41 – 0.60), good (0.61 – 0.80), and outstanding (DI between 0.81 – 1.00).

Table 1: Descriptive Statistics – SDGs Information

	Min	Max	Mean	Standard deviation
Disclosure of Sustainability Development Goals information	16	56	28.17	11.41

The disclosure of SDGs information deviated about 11.41 with the minimum and maximum disclosures of 16 items (by council 17) and 56 items (by council 8), respectively. The SDGDi scores for each council are presented in Table 2. Of 18 city councils examined, the SDGDi scores for six councils were considered as ‘poor level’, nine councils were considered as ‘fair level’, and three councils were considered as ‘satisfactory level’. There were still a number of councils reporting a ‘poor level’ of SDGs information on their websites despite their status as city councils, which indicates a need to put more commitment towards achieving and localising the SDGs 2030 by Malaysian city councils.

Table 2: SDGDi Scores for City Councils

Council number	SDGDi Scores
1	33
2	25
3	17
4	24
5	30
6	41
7	56
8	47
9	28
10	21
11	37
12	17
13	19
14	17
15	20
16	16
17	24
18	35

Table 3 shows the SDGDi scores for all categories of SDGDi. The first four categories, namely: (i) governance, (ii) strategy, (iii) management approach, and (iv) performance and target, are four recommendations made by Adams et al. (2020) as part of the improvement to achieve SDGs, support value creation, and communicate the implications and impacts of SDGs through reporting. Meanwhile, the remaining categories are part of the SDGs 2030 Agenda and information that are actually disclosed on the websites of local authorities. Scores presented in Table 3 indicated that SDG 9 (industry,

innovation, and infrastructure) had the highest scores among all categories at 32.72 per cent. In contrast, two categories were not disclosed by the city councils, namely, Governance and SDG 14 (life below water).

Table 3: SDGDi Scores based on Categories

No.	Categories	Index score (in percentage)
1	Governance	0
2	Strategy	6.94
3	Management approach	14.96
4	Performance and target	14.44
5	Financial information	14.81
6	SDG 1	10.19
7	SDG 2	5.56
8	SDG 3	30.86
9	SDG 4	22.22
10	SDG 5	11.11
11	SDG 6	7.14
12	SDG 7	19.44
13	SDG 8	17.59
14	SDG 9	32.72
15	SDG 10	14.81
16	SDG 11	31.48
17	SDG 12	28.57
18	SDG 13	18.52
19	SDG 14	0
20	SDG 15	6.48
21	SDG 16	23.74
22	SDG 17	29.26
23	Others	11.81

Frequencies for each item (for all 150 items) of SDGDi are reported in the Appendix. Next, a discussion for each category of SDGDi is presented, where examples of actual disclosures of SDGs information on websites are also included.

Governance

Governance is an essential tool for guidance in organisations to successfully achieve their objectives. Strong and effective governance practices help cultivate the culture of ethics, integrity, and accountability in organisations, which leads to positive performance and sustainability. Recommendation on the governance component of SDGs made by Adams et al. (2020) is associated with risks and opportunities of sustainable development and oversight

of processes to integrate sustainable development considerations into the organisation's processes. Governance consists of five disclosure items (items 1 until 5), none of which was disclosed by the city councils (refer to Table 3). The possible explanation for the non-disclosure of items by the city councils is that the information is more suitable to be reported in full reports, such as an annual report, strategic planning report, or management report.

Strategy

Referring to Adam et al. (2020, p. 6), the strategy includes 'changing what business is done and how business is done to maximise long-term value creation for the organisation and society and positive impact on the achievement of the SDGs'. Reporting or disclosure has become a magic tool for public sector sustainability (Niemann & Hoppe, 2018) and part of strategies of achieving sustainable nation status. The strategy consists of four disclosure items (items 6 until 9), where on average, the information under this category was disclosed on the websites by 6.94 per cent of the entire city councils. Among four disclosure items under the strategy, item 6 (11.11 per cent) was frequently disclosed on websites, while the others were disclosed by 5.56 per cent of the city councils. The following is a good example of disclosure for the item 6 strategy made by Council 18.

Item 6 – Council 18

Quality Policy

Our management is committed to continually improve the quality management system and its services from time to time. To achieve the intended outcomes of the quality management system, we shall determine the external and internal issues (negative and positive) that are relevant to the purpose of our organisation and initiate timely actions to address the risks and opportunities associated with these issues.

Management Approach

Management approach refers to any approaches used by organisations towards 'integrating consideration of sustainable development risks and opportunities into all aspects of the organisation' (Adams et al., 2020, p. 6). There are 13 disclosure items (items 10 until 22) under the management approach. The analysis of websites revealed that, on average, 14.96 per cent of the city councils disclosed the information under this category. Item 17, which was associated with the management approach on recycled materials, was disclosed on the websites by 55.56 per cent of the Malaysian city councils. Three out of 13 items (items 11, 14, and 22) were not disclosed on the websites by all the city councils. The management's commitment and approach towards sustainability can be seen from the disclosure of information on the descriptions of policies and functions of the council's departments or divisions, as illustrated below:

Item 15 – Council 2

Functions of Enforcement and Safety Division

Enforcement is a form of legal action by the government, government agencies, legal bodies and local authorities against offenders. The Enforcement Committee was established in 1971 and is now put under the Management Services Department of Council 2. Their main role is in the parking and hawkers' section. Enforcers' Tasks:

- Carry out tasks according to directions in groups at pre-determined zones.
- Monitor Council's markets during weekend and public holidays.
- Carry out Council's operations as directed by the Legal Division.
- Submit reports from the Enforcer's Report Book (Green Book) every Thursday.

Performance and Target

The performance and target category consists of five disclosure items (items 23 until 27). On average, items in this category were disclosed on the websites by 14.44 per cent of all the city councils. For the individual items under performance and target, item 23 revealed the highest disclosure (38.89 per cent). In comparison, items 24 and 25 showed the least disclosed items (5.56 per cent) observed on the websites of the Malaysian city councils. The following example was extracted from the website of Council 2, which illustrates the disclosure of item 23 that explains the connection between its mission and approach to sustainable development.

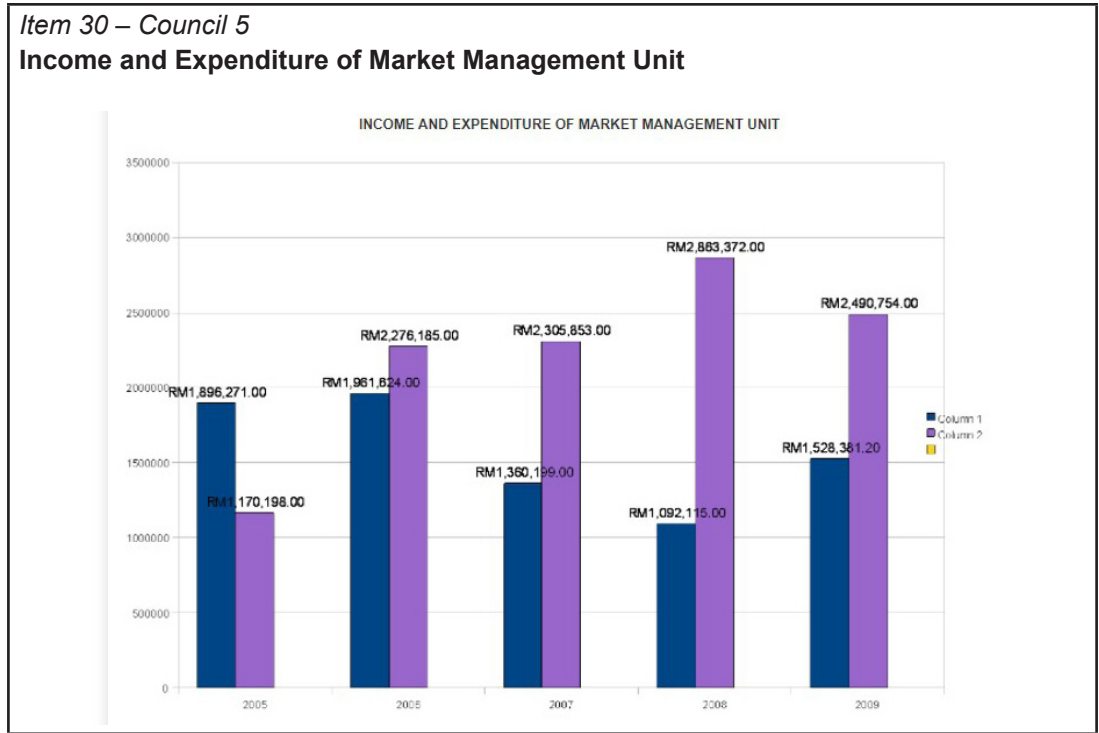
Item 23 – Council 2

Mission

Driving the excellence of a well-established City Council based on organisational quality, innovative, responsive, and committed to sustainable development to achieve Liveable Municipality 2035.

Financial Information

Financial information is composed of three disclosure items (items 28 until 30), namely, financial statement, budget, and other financial information. The analysis revealed that financial information was poorly disclosed on the websites of the city councils. On average, 14.81 per cent of the city councils disclosed the information under this category. The reason for the poor disclosure of this category on the websites is because the disclosure was voluntary (Engku Ali & Saidin, 2016). In addition, it was found that 22.22 per cent of the city councils disclosed items 28 and 30 on websites, whilst zero disclosure for item 29. The example of disclosure of item 30 – other financial information on the website for Council 5 is presented as follows:



SDG 1 No Poverty

Poverty could become a barrier to more effective implementation of the SDGs Agenda (Saha & Paterson, 2008). Six items (items 31 until 36) under SDG 1 are associated with the initiative of the government to end poverty in all its forms everywhere. The local authority, as the closest to the society, plays crucial roles in achieving this goal. Several programmes, such as e-Kasih, Poor House Repair Programme, Prosperous Home Project, and Urban Community Economic Empowerment Programme (PEKB), have been organised and implemented by the Ministry of Housing and Local Government (MHLG) under the local authority’s jurisdiction.

The analysis of the city councils’ websites revealed that the average disclosure of SDG 1 information was 10.19 per cent. The most and least frequently disclosed items under SDG 1 were item 36 (22.22 per cent), and items 31, 33, and 35 (5.56 per cent), respectively. Several initiatives, as previously mentioned, are examples of programmes carried out by the Malaysian councils to improve the poor’s life quality, which explains the highest disclosure of item 36. The following is an example of disclosure made by Council 5 of such a programme on the website.

Item 32 – Council 5

Eradicating Poverty in City

- Assist in the implementation of the Urban Well-being projects including the well-being terminal as well as building new and repair of house projects.
- Implementation of PPKB Aids – review the status of recipients, and determine aids.
- Channelling of PPKB allocation / aids to recipients – coordination with other agencies for Well-being Aids Distribution to the Target Groups.
- Conduct PPKB monitoring programmes.
- Registration of e-Kasih registry information.
- Census and ‘Cleansing’ of Aids Recipients List.
- Aids programmes for the urban poverty eradication programme.
- Coordination with Districts and States.

SDG 2 Zero Hunger

By 2030, SDG 2 aims to end all forms of hunger, achieve food security and improved nutrition, as well as promote sustainable agriculture. In Malaysia, several initiatives to combat hunger have been taken by the government through local authorities, government agencies, and non-government organisations (NGOs). Among the hunger programmes carried out by both government and NGOs in Malaysia are the National Plan of Action for Nutrition of Malaysia (NPANM), Zero Hunger Programme, the Foodbank Malaysia Programme, the Lost Food Project, Rise Against Hunger, and Yayasan Food Bank Malaysia. However, Malaysia is still in a crisis of hunger and malnutrition that may affect the poor in the long-term (Sharma, 2020).

In the 2020 Global Hunger Index, Malaysia was ranked 59th out of the 107 countries and endured a moderate hunger level. Perhaps, this occurred because the information related to hunger programmes did not reach the intended groups of society. It was found that SDG 2 was at the ‘low’ level of disclosure, with only 5.56 per cent of the entire city councils disclosing the SDG 2 information on their websites. Out of two items (items 37 and 38) under SDG 2, only item 37 was disclosed on the websites, where only 11.11 per cent of the city councils made the disclosure. Despite the low level of disclosure, several councils that put effort into making SDG 2 information available and accessible were considered to be in the direction of achieving zero hunger. The following is an example of information disclosure of SDG 2:

Item 37 – Council 2

Programs Under LA21

The City of Council 2 Zero Hunger Program is a program held in conjunction with the Sustainable Development Goals (SDG). The first focus is done with the homeless. This program was held in collaboration with the NGO Kindness Malaysia North Kedah/Perlis Branch. The items distributed to the homeless are in the form of snacks, such as bread and mineral water along with basic personal hygiene kits, such as toothbrushes and toothpastes.

SDG 3 Good Health and Well-being

Nine disclosure items (items 39 until 47) are associated with good health and well-being under SDG 3. From the analysis of the websites, the average disclosure of SDG 3 on the websites for the entire Malaysian city councils was 30.86 per cent. Item 47 – human resource development (88.89 percent), was found to be frequently disclosed on the websites of the city councils. Meanwhile, two items, namely items 39 and 41, revealed zero disclosure score, indicating none of the councils made the disclosure.

Item 40 – Council 1

Health and Environment Department

Department of Health and Environment is responsible for monitoring the health of citizens, while also trying to enhance the health quality of its citizens. In addition, this department is also responsible for resolving complaints relating to emergencies – to monitor and improve the health status of the citizens of Council 1 Federal Territory.

Objectives:

1. To improve the health status of individuals
2. To protect and improve the quality of environment in the Council 1 Federal Territory
3. To control and improve the quality of food prepared for the masses
4. To prevent and control infectious diseases
5. To improve public health through health promotion and education

SDG 4 Quality Education

The government of Malaysia has aligned the SDG Agenda with the 11th Malaysia Plan (11MP) in order to achieve all SDGs. SDG 4 emphasises the agenda to provide quality education and promote lifelong learning opportunities for all. This category has three disclosure items (items 48 until 50). The average disclosure of SDG 4 information on the websites of the city councils was 22.22 per cent. For individual items under SDG 4, item 50 (44.44 per cent) appeared to be the most frequently disclosed item, while item 48 (5.56 per cent) was the least disclosed item.

Item 50 – Council 7

Knowledge Resources Division

- Provide current awareness on library services offered through various activities including for children and hold programs towards the reading movement.
- To improve the quality of library services by introducing the use of information technology as an alternative to conventional information access. Library services will be fully automated and multimedia services introduced.
- To make the Community Library as a one-stop-information center for the collection of Government Publication References (PBT), such as holding a collection of Malaysian Acts and collecting published and unpublished publications for Council 7 documents, as well as all course notes ever held by Council 7.

SDG 5 Gender Equality

SDG 5 aims to end all forms of discrimination against women and girls, which is crucial for a sustainable future. It is believed that empowering women and girls helps economic growth and development (UNDP, 2021). Hence, giving women and girls equal rights to be involved in the market is important. Awareness through the dissemination of information associated with gender equality (such as policies and programmes implemented) should be created, available, and accessible to achieve this goal. SDG 5 consists of five disclosure items (items 51 until 55). Based on the analysis, on average, SDG 5 was disclosed on the websites by 11.11 per cent of the city councils. The disclosure of SDG 5 for the city councils was considered to be low; hence, there is a need for greater disclosure in the future. However, several councils were still committed to disclosing related information. Item 53 was the most frequently disclosed (16.67 per cent) on the websites of the city councils. Below is an example of disclosure of SDG 5 related information that is incorporated in the policy of Council 4.

Item 53 – Council 4

Gender Inclusion Policy (*Dasar Keterangkuman Gender*)

This policy also takes into account women's rights and gender equality enshrined in the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and Beijing Declaration and Platform of Action.

SDG 6 Clean Water and Sanitation

Countries around the world need to protect and restore the water-related ecosystems of their countries to avoid water scarcity. On average, SDG 6 information was disclosed by 7.14 percent of the city councils. There were seven disclosure items (items 56 until 62) in this category. Under this category, item 56 (38.89 per cent) was the highest disclosed item on the websites of the city councils. Meanwhile, four out of seven disclosed items, namely, items 57, 58, 60, and 62 (zero disclosure), were not disclosed by any of the city councils on their

websites. Councils that made information disclosure in this category disclosed the general information related to SDG 6, as illustrated below.

Item 59 – Council 10

Rainwater Collection and Reuse System

The accumulated rainwater can be used for a variety of purposes, such as general cleaning, toilets, and landscaping.

SDG 7 Affordable and Clean Energy

This category was composed of only two disclosure items (items 63 and 64). The average disclosure for SDG 7 information was 19.44 per cent. For individual items, items 63 and 64 were disclosed on the websites by 11.11 per cent and 27.78 per cent of the Malaysian city councils, respectively. Despite the low level of disclosure, information related to SDG 7 on affordable and clean energy was interesting, with detailed explanations of related programmes and strategies implemented. Two examples of disclosure were extracted from the websites of the city councils, as shown below.

Item 64 – Council 3

Low Carbon City

Climate change and global warming have left huge impact on the world and steps need to be taken to slow down this problem and reduce the impact it has on us. To ensure the sustainability of our city, Council 3 will focus on the implementation of the Nature-based Climate Adaptation Plan (Natural Climate Adaptation Plan); among others is to plant more trees in the island to lower the temperature in the city. In addition, Council 3 will also explore the Smart Mapping for Smart City Planning project, where 3D mapping and PiMap are used to assist the Council in making the right plans and decisions that can benefit the people of Penang. Council 3 will also continue to strengthen cashless payment initiatives to create a Cashless Community in Penang.

Council 9 incorporates SDG 7 in its strategic thrust, where the information and explanations of the strategy implementation are accessible on the website.

Item 64 – Council 9

Strategic Thrust

Implementation of 'greenhouse gas' and 'heat island' control strategies through projects, such as gazetting of open space - green lung project (urban forest / recreational park / etc.) - green building project - green transport / public transport promotion campaign) - use of green vehicles as official government vehicles - use of biodiesel for government owned vehicles (lorries / etc.) – achievement of 40% carbon reduction target.

SDG 8 Decent Work and Economic Growth

SDG 8 promotes sustained, inclusive, and sustainable economic growth with full and productive employment and decent work for all. On average, 17.59 per cent of the city councils disclosed SDG 8 information on their websites. This category comprises six disclosure items (items 65 until 70), where the highest disclosure came from items 65 and 69 (33.33 per cent). None of the city councils disclosed item 68 on their websites. An interesting disclosure of item 67 was found on the website of Council 16 on SDG 8.

Item 67 – Council 16

Transformation of Education

The hardest of all development is to prepare the people to get maximum employment opportunities in development towards the year 2020 and beyond. Initially, the State may have to source whatever skills being needed in managerial and professional levels to implement SCORE from anywhere in the world. But the primary aim is to get the local people to take over all these senior jobs gradually. That explains why the State has decided to develop SCORE up to year 2030 based on the planning of the State's manpower development.

SDG 9 Industry, Innovation, and Infrastructure

Governments all around the world are committed to building resilient infrastructure, promoting inclusive and sustainable industrialisation, and fostering innovation through the achievement of SDG 9. This category comprises nine disclosure items (items 71 until 79). Among all categories, SDG 9 revealed the highest average disclosure, with 32.72 per cent of the city councils disclosing SDG 9 information on their websites. This indicates a high commitment by the city councils to provide better infrastructure to the society. All the city councils disclosed one item in this category, namely, item 7 (100 per cent disclosure).

Item 78 – Council 6

Information Technology Department

1. Plan, develop, and implement the use of ICT covering all areas of work of Council 6.
2. Provide the latest ICT facilities to Council 6's staff.
3. Provide exposure and cultivate ICT to the citizens of Council 6.

SDG 10 Reduced Inequality Within and Among Countries

SDG 10 comprises three disclosure items. On average, 14.81 per cent of the Malaysian city councils disclosed the SDG 10 related information on their websites. Under this category, only one out of three items (items 80 until 82), namely, item 81 (44.44 per cent), was disclosed on the websites. Meanwhile, the other two items (items 80 and 82) were not disclosed on the websites of the city councils.

Item 81 – Council 1

Economic Planning and Development Department (JPEP) – Administration and Development Unit Profile

Administer and monitor the allocation quota of Bumiputera unit property, as well as coordinate the application for Bumiputera unit property release.

SDG 11 Sustainable Cities and Communities

This category is made up of twelve disclosure items (items 83 until 94). The analysis of the websites revealed that, on average, 31.48 per cent of the city councils disclosed the SDG 11 information on their websites. Two items under SDG 11 that were frequently disclosed on the websites were items 85 and 87 (77.78 per cent). The following is an example of disclosure of SDG 11 information, i.e. item 86, that aims to provide information to reduce the number of deaths caused by disasters, despite only several councils making the disclosure.

Item 86 – Council 8

Strategic Plan: Strategic Thrust

Mental health and psycho – social development; - implementation of mental health programs – records of suicide cases; counseling participation records; ‘Happiness index’; ‘Number of mental health programs’.

SDG 12 Responsible Consumption and Production Set

SDG 12 was among the categories with an average disclosure of more than 20 per cent (refer to Table 3). This category was made up of seven disclosure items (items 95 until 101), with an average disclosure of 28.57 per cent. Among all items, item 97 (83.33 per cent) was the highest disclosed item. The following quote illustrates a good disclosure on SDG 12 that aims to achieve the sustainable management of natural resources.

Item 95 – Council 12

Global Action Plan

Conservation and Resource Management – atmosphere, soil resources, forests, ecosystems-drought, ecosystems-mountains, agriculture, biotechnology, oceans, freshwater resources, toxic waste, solid waste and sewerage, as well as radioactive waste.

SDG 13 Climate Action

The Voluntary National Review (VNR) 2021 emphasises that Malaysia has made progress towards sustainability and managing climate change by adopting a resource-efficient and climate-resilient development model. Despite this progress, based on the analysis, not much information on SDG 13 was disclosed to the public by the Malaysian city councils as the closest to them. For the record, SDG 13 comprised six disclosure items (items 102 until

107). On average, 18.52 per cent of the city councils disclosed the information under this category. The highest disclosure item under SDG 13 came from item 102 (55.56 per cent), while the lowest disclosure was obtained from item 104 (zero disclosure).

Items 102 & 103 – Council 9

Strategic Plan – Strategic Thrust

Disaster resilience and resilience of service continuity – service continuity planning; risk plan; flood mitigation plans; slope management plan; disaster simulation (fire / system 'down' / power outage / water crisis / flood / etc.).

SDG 14 Life Below Water

SDG 14 aims to conserve the life below water from pollution and sustainably use the resources of the oceans, seas, and marine for sustainable development. Malaysia has made a full commitment to achieve a sustainable life below water. However, based on the analysis of the city councils' websites, none of the city councils disclosed SDG 14 related information on their websites even though SDG 14 consists of only three disclosure items (items 108 until 110). One of the reasons for the non-disclosure of SDG 14 is that Malaysia is still far from achieving its target in SDG 14 due to several factors, such as marine pollution, climate change, as well as the depletion of marine and ocean resources (Mohd Zaideen, 2020).

SDG 15 Life on Land

SDG 15 aims to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt reverse land degradation and biodiversity loss. The average disclosure for SDG 15 was considered as low, whereby only 6.48 per cent of the entire city councils disclosed the SDG 15 information. There were six disclosure items (items 111 until 116) in this category, out of which three items (items 111, 112 and 113) were disclosed, and the other three items (items 114, 115 and 116) were not disclosed on the websites. Items 111 and 112 showed the highest disclosure of 16.67 per cent. To illustrate the disclosure of SDG 15 related information, the following quote was extracted from the website of Council 12.

Item 111 – Council 12

Urban Forest: Introduction

The Urban Forest covers an area of 50 acres located at the confluence of Jalan Tasek Utara and Jalan Yahya Awal, Johor Bahru, which is about 1.5 km from the city center. The concept of planning and design based on topographic structure, water resources, as well as flora and fauna blended with activity spaces and facilities in an integrated manner, was inspired by its development since 1987. With the help of expertise from the Research and Consultancy Unit of Universiti Teknologi Malaysia, unique has been born. The speciality of this recreational area is that it maintains its original appearance with tree felling done

at the most minimal level. The result is a green surrounding with aesthetic value, as well as a beautiful and comfortable scenery. With the concept of 'Family Recreation Park' in a cozy, comfortable and harmonious natural environment, it aims to provide recreational and leisure facilities for various levels of Johor Bahru citizens. Johor Bahru Urban Forest Public Recreation Park has been selected as one of the destinations in the Prosperous City program organised by the World Health Organization (WHO), apart from the North Kuching City Hall of Sarawak since 1994.

SDG 16 Peace and Justice Strong Institutions

SDG 16 promotes peaceful and inclusive societies for sustainable development, provides access to justice for all, and builds effective, accountable, and inclusive institutions at all levels. There were eleven disclosure items (items 117 until 127) in this category, where the average disclosure of SDG 16 was 23.74 per cent. Item 119 (72.22 per cent) revealed the highest disclosure, followed by item 126 (61.11 per cent). Meanwhile, items 117 and 127 (zero disclosure) were the least disclosed items on the city councils' websites. One of the targets of SDG 16 is to 'ensure public access to information; therefore, it is important for the local authorities, as the closest to the society, to show their commitment by disclosing as much information as they can for the public use. The following is an example of the actual disclosure of SDG 16 information made by Council 11.

Item 121 – Council 11

Pledge of Integrity

Cooperate fully with any party to fight the crime of corruption.

SDG 17 Partnership to Achieve the Goal

Initiatives have been undertaken by countries worldwide to achieve global partnership. Among the initiatives implemented are international networking and the use of information technology. SDG 17 revealed the most disclosure items among all categories of SDGDi with 15 items (items 128 until 142). The average disclosure for this category was 29.26 per cent, where the highest disclosure for the individual item was 88.89 per cent (item 135), and the lowest disclosure was zero (items 128, 130, 132, 133 and 142). Cooperation and partnership between countries to achieve the goal of global partnership have been undertaken by several Malaysian city councils, where the information is illustrated below.

Item 140 – Council 5

Twin Cities – Council 5 City and Fukuoka, Japan

Since 1988, Council 5 has established a close relationship with Fukuoka City, Japan by holding various programmes, such as cultural, sports, visits, and others. On 21 March 1989, Y. Bhg. Dato' Haji Umar bin Haji Abu, the first Council 5 Mayor with Mr. Toiichi Kuwahara,

Fukuoka City Mayor, had signed an accord on the Twin Cities Council 5 City – Fukuoka, Japan programme.

The ceremony was witnessed by the then Chief Minister of Perak, Y.A.B Dato' Seri Haji Ramli bin Ngah Talib and the Fukuoka City Chairman, Mr. Hirotarō Yamasaki. The ceremony was held at the 10th Floor, Azlan Shah Hall, Council 5. The aim of having this relationship is to strengthen and develop the cooperation between the two cities in order to promote the understanding between the people of Malaysia and Japan. The relationship is in the forms of cooperation in the areas of economy, commerce, science and technology, culture, sports, education, and others.

Others

This category consists of eight disclosure items (items 143 until 150) representing the actual disclosure of SDGs related information on the Malaysian city councils' websites. On average, the disclosure of information under others was 11.11 per cent. For individual items, the analysis revealed five out of 18 city councils mentioned item 143 on the SDGs information in their vision, mission, or objective statement. Hence, this indicates that item 143 (27.78 per cent) was the most frequently disclosed item on the websites of the city councils. In contrast, items that were least disclosed on the websites were items 145, 146, 149, and 150 (5.56 per cent). These four items were disclosed by only one council each. The following is an example of the disclosure for item 146.

Item 146 – Council 6

Achievement – Participation in Malaysia SDG Cities Roadmap

Participate in the preparation of Malaysia SDG Cities Roadmap in conjunction with Malaysia Urban Forum 2020 on 28 September 2020 held at the Sultan Sulaiman Building, Kuala Lumpur.

Council 8 took the initiative to make a green city, which is women-friendly. The disclosure of this item also supports the initiative undertaken for SDG 5 on gender equality. The quote below illustrates the disclosure of item 149.

Item 149 – Council 8

Women-Friendly Green City

Looking at the demographics of women in Council 8 township which is 43.47% of the total population, Council 8's Women Friendly Green City Action Plan (BHMW) has been developed in line with the Selangor Women's Policy and has been constructively planned with the theme of inclusivity and empowerment. Supports the global agenda, namely, the Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA). BHMW aims to ensure that no group is left behind in town planning and always ensure that planned development is done comprehensively and holistically by taking an approach to empower communities to help them overcome the challenges of rising cost of living and poverty. City especially for the B40 group among women.

Conclusion

This paper aimed to achieve two objectives, as mentioned earlier. Regarding the first objective, more qualitative SDGs information was disclosed by the local authorities on their websites compared to quantitative SDGs information. In addition, the extent of SDGs information disclosed on the city councils' websites is still considered as low. It is also expected to be low for other types of councils – municipal and district. This indicates that further attention by local authorities, particularly their top management, is needed in order to achieve better sustainability at the local level; hence, achieving the SDGs 2030 Agenda and sustainable nation status.

This paper is not without any limitations. The content analysis used in this paper is often criticised due to subjectivity. Nevertheless, the SDGDi has been developed and validated, thus reducing the reliability issue. The low disclosure from this paper could be possibly contributed by the Covid-19 situation. Most local authorities' staff are working from home, and updating information on websites could be inconvenient for personnel, which in turn explains the low disclosure of SDGs information. This paper only examined the type and extent of SDGs disclosure on websites. Possible explanations for low disclosures could be explored via semi-structured interviews in future research. In addition, future research could consider using a theoretical framework to explain possible reasons of SDGs information and low disclosures.

This paper also provides several implications. Firstly, the websites have not been fully utilised to disclose the SDGs information. Hence, the top management of local authorities may consider using aggressive websites and social media to promote SDGs as a reflection of the commitment to advancing sustainable development agenda.

Secondly, as the closest tier to the community, local authorities may consider strengthening certain aspects under SDGDi that are poorly disclosed, for example, the governance aspect. The governance aspect is one of the important elements in any organisation, which should be emphasised, implemented, and consequently disclosed. It is recommended that the management of local authorities refer to 'Sustainable development goals disclosure (SDGD)

recommendations Integrated Reporting' by Adams et al. (2020) as a guide to improving the governance aspect.

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Appendix: Frequencies for Sustainable Development Goals Disclosure Index

No.	Items	Frequency (%)
1. Governance		
1	The Board's integration of relevant and material sustainable development issues into overall governance processes (oversight and accept responsibility for the SDG disclosures).	0
2	The Board's integration of sustainable development issues into overall governance processes (stakeholder identification and engagement).	0
3	The Board's integration of sustainable development issues into overall governance processes (strategy and mechanisms).	0
4	The Board's integration of sustainable development issues into overall governance processes (organisation's culture).	0
5	Responsibilities and Committees.	0
2. Strategy		
6	Sustainable development issues to be considered in influencing strategy and their impact on the achievement of the SDGs and the impact of risks and opportunities disclosure on the organisation's business model, strategy, and financial planning (where such information is material).	11.11
7	Sustainable development issues to be considered in influencing strategy and their impact on the achievement of the nature and extent of scenario analysis to test the resilience of the organisation's strategy, considering the likelihood and magnitude of material sustainable development risks and opportunities.	5.56
8	Investments in and benefits generated from opportunities arising from sustainable development issues.	5.56
9	Labour related issues; quantitative.	5.56
3. Management Approach		
10	Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for ensuring stakeholder inclusivity.	22.22
11	Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for determining relevant and material sustainable development issues.	0
12	Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for identifying SDGs, in which the organisation has the greatest positive and/or negative impact on achievement.	5.56
13	Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for selecting the SMART targets.	22.22
14	Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for ensuring that the accounting, finance, strategy and sustainability functions collaborate to develop the organisation's approach and response to sustainable development issues.	0
15	Descriptions of policies, commitments, goals and targets, responsibilities, resources, grievance mechanisms, and specific actions.	27.78
16	Management approach for anti-corruption.	27.78
17	Management approach on recycled materials.	55.56
18	Energy consumption, energy intensity, reduction of energy consumption, reduction in energy requirement of products and services.	5.56
19	Water sources, water recycled and reused.	5.56

20	Emissions – emission intensity, reduction of GHG emission, emissions of ozone-depleting substances.	11.11
21	Waste generation and related impacts.	11.11
22	Environmental Compliance – Significant fines and non-monetary sanctions.	0
4. Performance and Target		
23	The connection between the organisation's approach to sustainable development's vision and mission.	38.89
24	Performance against short, medium, and long-term SMART target reports.	5.56
25	The organisation's approach contribution to sustainable development's value creation (or destruction) for the organisation and its stakeholders.	5.56
26	Detailed disclosure of organisation's impact on SDGs.	11.11
27	Customer Relationship Management.	11.11
5. Financial Information		
28	Financial statement.	22.22
29	Budget.	0
30	Other financial information.	22.22
6. SDG 1 No poverty – end poverty in all its forms everywhere		
31	Reduction of at least by half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions by 2030.	5.56
32	Nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.	11.11
33	All men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance by 2030.	5.56
34	The resilience of the poor and those in vulnerable situations and reduction of exposure and vulnerability to climate related extreme events and other economic, social and environmental shocks and disasters by 2030.	11.11
35	Significant mobilisation of resources from various sources, including through enhanced development cooperation to provide adequate and predictable means for developing countries, particularly least developed countries, to implement programmes and policies to end poverty in all its dimensions.	5.56
36	Local authority initiatives to improve the quality of life of the poor (motivational programs, entrepreneurship, guidance classes, etc.)	22.22
7. SDG 2 Zero hunger – end hunger, achieve food security and improved nutrition, and promote sustainable agriculture		
37	Hunger is ended and access by all people is available, in particular, the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round by 2030.	11.11
38	Sustainable food production systems and resilient agricultural practices that increase productivity and production that help maintain the ecosystems and strengthen the capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters that progressively improve land and soil quality by 2030.	0
8. SDG 3 Good health and well-being – ensure healthy lives and promote well-being for all at all ages		
39	The efforts to end epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, combat hepatitis, water-borne diseases and other communicable diseases by 2030.	0

40	Universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all.	16.67
41	Reduction in the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination – waste management by 2030.	0
42	The capacity of all countries, in particular developing countries, for early warning, risk reduction, and management of national and global health risks.	27.78
43	Health facilities.	33.33
44	Regular health check-up for local authority's staff.	11.11
45	Local authority's actions undertaken to prevent dengue.	66.67
46	Monitoring of dengue-risk areas.	33.33
47	Human resource development.	88.89
9. SDG 4 Quality education – ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		
48	Knowledge and skills acquisitions for all learners to promote sustainable development, including among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.	5.56
49	Education facilities upgrading for children, disability, and gender sensitivity, and providing safe, non-violent, inclusive, and effective learning environments.	16.67
50	Educational equipment / method / publicity used (billboards, posters, and webs).	44.44
10. SDG 5 Gender equality – achieve gender equality and empower all women and girls		
51	Eradication of all forms of discrimination against all women and girls everywhere.	22.22
52	Elimination of all forms of violence against all women and girls in the public and private spheres, including trafficking, sexual and other types of exploitation.	5.56
53	Women's participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public lives.	16.67
54	Enabling technology usage in particular information and communication technology to promote the empowerment of women.	5.56
55	Sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.	5.56
11. SDG 6 Clean water and sanitation		
56	Clean water and sanitation – availability and sustainable management of water and sanitation for all.	38.89
57	Adequate and equitable sanitation and hygiene for all and end of open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030.	0
58	Water quality improvement by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.	0
59	Water-use efficiency improvement across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity by 2030.	5.56
60	Integrated water resources management at all levels, including through transboundary cooperation as appropriate by 2030.	0
61	Water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.	5.56

62	The participation of local communities in improving water and sanitation management.	0
12. SDG 7 Affordable and clean energy – ensure access to affordable, reliable, sustainable and modern energy for all		
63	Infrastructure and technology upgrading for supplying modern and sustainable energy services for all in developing countries, particularly least developed countries, small island developing states, and landlocked developing countries in accordance with their respective programmes of support by 2030.	11.11
64	Effective energy and renewal energy implementation.	27.78
13. SDG 8 Decent work and economic growth – promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		
65	Economic productivity improvement through diversification, technological upgrading and innovation, including through a focus on high value-added and labour-intensive sectors.	33.33
66	Development-oriented policies improvement to support productive activities, decent job creation, entrepreneurship, creativity and innovation, and formalisation and growth of micro, small and medium-sized enterprises, including through access to financial services.	5.56
67	Full and productive employment and decent work for all women and men, including young people and persons with disabilities, and equal pay for work of equal value by 2030.	22.22
68	Measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025, end child labour in all its forms (looking at the business licensing).	0
69	Labour rights protection and safe and secure working environments for all workers, including migrant workers, particularly women migrants, and those in precarious employment.	33.33
70	Policies to promote sustainable tourism that creates jobs and promotes local culture and products by 2030.	11.11
14. SDG 9 Industry, innovation and infrastructure – build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation		
71	Sustainable infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.	100.00
72	Sustainable industrialisation and raising the industry's share of employment and gross domestic product in line with national circumstances and double its share in least developed countries.	11.11
73	The small-scale industrial and other enterprises access to financial services, including affordable credit, and their integration into value chains and markets particularly in developing countries.	5.56
74	Infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities by 2030.	16.67
75	Scientific research and the technological capabilities enhancement of industrial sectors in developing countries, including by 2030, improvement in the number of research and innovation, and development workers per 1 million people, as well as public and private research and development spending.	16.67
76	Sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical supports to African countries, least developed countries, landlocked developing countries and small island developing states.	16.67

77	Domestic technology development, research and innovation in developing countries, including a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.	11.11
78	Access to information and communication technology strives to provide universal and affordable access to the Internet in least developed countries.	55.56
79	Innovation and creativity that have been produced and certificates of recognition.	61.11
15. SDG 10 Reduced inequality within and among countries		
80	Income growth of the bottom 40 per cent of the population at a rate higher than the national average.	0
81	The social, economic and political empowerment of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, economic, or other status.	44.44
82	Adequate safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies – illegal migration.	0
16. SDG 11 Sustainable cities and communities – make cities and human settlements inclusive, safe, resilient, and sustainable		
83	Adequate, safe, and affordable housing and basic services, as well as upgrade slums by 2030.	50.00
84	Sustainable urbanisation and capacity for participatory, integrated, and sustainable human settlement planning, as well as management by 2030.	38.89
85	Efforts to protect and safeguard the world's cultural and natural heritage.	77.78
86	Reduction in the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to the global gross domestic product caused by disasters, including water-related disasters, focusing on protecting the poor and people in vulnerable situations by 2030.	11.11
87	Access to safe, inclusive, and accessible, green and public spaces, in particular for women, children, older persons and persons with disabilities by 2030.	77.78
88	Positive economic, social, and environmental links between urban, peri-urban, and rural areas by strengthening national and regional development planning.	5.56
89	The number of cities and human settlements improvement by adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.	5.56
90	Financial and technical assistance, in building sustainable and resilient buildings utilising local materials.	5.56
91	Initiatives to improve the quality of life of youths/students (motivational programs, entrepreneurship, guidance classes, etc.).	33.33
92	Initiatives to improve the quality of life of the disabled (motivation, entrepreneurship, guidance classes, etc.).	33.33
93	Initiatives to assist in the achievement of the NKRA: improving public transport.	11.11
94	Facilities for the disabled – special ramp/elevator, parking, toilets, counters for the disabled, help desk, prayer room, etc.	27.78
17. SDG 12 Responsible consumption and production set – ensure sustainable consumption and production patterns		
95	The sustainable management and efficient use of natural resources by 2030.	11.11

96	The environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks, and significantly reduce their release to air, water, and soil in order to minimise their adverse impacts on human health and the environment.	72.22
97	Reduction of waste generation through prevention, reduction, recycling, and reuse by 2030.	83.33
98	Public procurement practices that are sustainable in accordance with national policies and priorities.	5.56
99	Relevant information and awareness for sustainable development and lifestyles for public in harmony with nature.	22.22
100	Developing countries assistance to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.	5.56
101	Tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local cultures and products.	0
18. SDG 13 Climate action – take urgent action to combat climate change and its impacts		
102	Resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	55.56
103	Climate change measures integration into national policies, strategies, and planning.	5.56
104	Education, awareness-raising and human and institutional capacity improvement on climate change mitigation, adaptation, impact reduction, and early warning.	0
105	The commitment undertaken by developed country parties to the United Nations Framework Convention on Climate Change to a goal of mobilising jointly \$100 billion annually from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalise the Green Climate Fund through its capitalisation as soon as possible.	5.56
106	Mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing states, including focusing on women, youths, as well as local and marginalised communities.	16.67
107	Climate Strategy, Biodiversity Impacts.	27.78
19. SDG 14 Life below water – conserve and sustainably use the oceans, seas and marine resources for sustainable development		
108	Reduction of marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution by 2025.	0
109	Sustainable management of marine and coastal ecosystems to avoid significant adverse impacts by strengthening their resilience and taking action for their restoration to achieve healthy and productive oceans.	0
110	Ocean acidification impact, including through enhanced scientific cooperation at all levels.	0
20. SDG 15 Life on land – protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss		
111	The conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, particularly forests, wetlands, mountains, and drylands, are in line with obligations under international agreements.	16.67
112	Sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.	16.67
113	Land and soil utilisation, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world by 2030.	5.56
114	Mountain ecosystems conservation, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development by 2030.	0

115	Natural habitat degradation reduction, halt the loss of biodiversity and protect and prevent the extinction of threatened species.	0
116	Integrated ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.	0
21. SDG 16 Peace and justice strong institutions – promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive		
117	Reduction of all forms of violence and related death rates everywhere.	0
118	Eradication of abuse, exploitation, trafficking and all forms of violence against and torture of children.	16.67
119	Equality access of rule of laws at the national and international levels and ensure equal access to justice for all.	72.22
120	Reduction of illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organised crime by 2030.	16.67
121	Corruption and bribery reduction.	33.33
122	Effective, accountable and transparent institutions at all levels.	22.22
123	Responsive, inclusive, participatory, and representative decision-making at all levels.	11.11
124	Public access to information and fundamental freedoms protection in accordance with national legislation and international agreements.	22.22
125	Relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.	5.56
126	Actions to support the NKRA: reducing street crime, for example, campaigns, lighting in the hotspot, CCTV installation, cooperation with the police, etc.	61.11
127	“No Wrong Door Policy” implementation.	0
22. SDG 17 Partnership to achieve the goal – strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development (Finance, Technology, Capacity-building, Trade, Systematic issues)		
128	Domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.	0
129	Enhancement of North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.	5.56
130	The development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed – green technology (composting), e-waste.	11.11
131	Full operationalisation of the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhancement on the use of technology, in particular format – websites, online and communication technology.	16.67
132	Policy coherence enhancement for sustainable development.	0
133	Respect on country’s policy on space and leadership to establish and implement policies for poverty eradication and sustainable development.	0
134	Effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.	77.78
135	Management of tax/non-tax revenue collection – online tax collection.	88.89

136	Management of tax/non-tax revenue collection – performance of revenue collection (tax and non-tax) based on estimates.	83.33
137	Management of tax/non-tax revenue collection – performance of tax revenue arrears collection.	55.56
138	Management of tax/non-tax revenue collection – efforts to control the security of collection.	27.78
139	Networking/linkage with international bodies/foreign cities – Memorandum of Understanding.	5.56
140	Networking/linkage with international bodies/foreign cities – any related activities.	27.78
141	Knowledge sharing at the international/national level conventions.	38.89
142	Members to the international/national local authority bodies.	0
23. Others		
143	Vision, mission, objective statement – mention about sustainable development.	27.78
144	Mayor statement – mention about sustainable development and related activities/programmes.	11.11
145	Voluntary Local Review Based on Sustainable Development Goals (SDGs).	5.56
146	Involvement in the preparation of Malaysia SDG Cities Roadmap.	5.56
147	Strategic planning mention about SDG.	16.67
148	The existence of an independent Sustainable Development Department.	16.67
149	Action plan for women-friendly green city.	5.56
150	The existence of SDG section on the website.	5.56

Malaysian Public Sector Accounting Standards (MPSAS) Implementation in State Governments of Malaysia: Status and Challenges

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Abstract

Purpose: This paper aims to share the experience of state governments in Malaysia in implementing the Malaysian Public Sector Accounting Standards (MPSAS).

Methodology/Approach: A mixed methods study involving questionnaire survey and interview was employed. The study covers all 13 state governments of Malaysia. A total of 147 accounting and finance staff responded to the questionnaires and 12 interview sessions were held in 12 states involving the state treasurers.

Findings: Similar challenges observed in other countries in implementing IPSAS prevailed in the 13 state governments, which are (i) resources related to lack of competent accounting and finance staff, and lack of IT facilities and IT support; (ii) accounting and reporting issues related to difficulties in assets, liabilities, revenue and expenses recognitions and measurement; and (iii) top management commitment in ensuring successful change management programmes. However, many of those challenges have been tackled except for the application of MPSAS, where trained staff is still lacking.

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Research Limitations/Implications: This paper explores the implementation of accrual accounting via the computerised accounting system used by the state governments in Malaysia. The system caters to both MPSAS accrual accounting and cash accounting reports. Production of MPSAS accrual accounting reports has not been made mandatory. Thus, the discussion in this paper is limited to respondents' experience with the computerised MPSAS-based accrual accounting system used to produce cash accounting reports.

Practical implications: Findings from this paper provide insights for state governments to plan for effective implementation of MPSAS.

Originality/value: This paper discovers the real issues faced by the state governments of Malaysia in implementing MPSAS.

Keywords: Accrual accounting, IPSAS, MPSAS, public sector, developing countries.

Introduction

Accrual accounting has been on the financial management agenda in Malaysia since 2010, when the Malaysian government introduced the New Economic Model (NEM) 2011-2020 (National Economic Advisory Council, 2010). The main objective of adopting accrual accounting is to facilitate asset-liability management in the public sector. There has been a global financial management reform agenda where governments follow the private sector management practices to promote economy, efficiency and effectiveness in the public sector. To facilitate the accrual accounting adoption, the Malaysian government developed national standards, the Malaysian Public Sector Accounting Standards (MPSAS) based on the International Public Sector Accounting Standards (IPSAS). Only minor changes were made to the IPSAS to adapt to the national circumstances (IFAC, 2013). Two committees were responsible for developing and implementing MPSAS: the Government Accounting Standards Advisory Committee (GASAC) and the Accrual Accounting Steering Committee (ACSC). GASAC was responsible for developing the standards while ACSC is tasked with approving the standards for application in preparing government financial reports.

The Malaysian government made the decision to adopt accrual accounting in 2011 with the target for full implementation in 2015. A year lapse was given for the state governments' full implementation, which should be in 2016. Given the various issues and challenges faced by both the federal and state governments, the target year for full implementation has been pushed forward several times, with the latest being 2022 for the federal government and 2023 for the state governments. Several countries have adopted accrual accounting prior to the introduction of accrual basis IPSAS, while many more are in the process of implementation.

Various studies were conducted by researchers from professional bodies as well as academics and findings on the experiences, issues and challenges in the accrual accounting or IPSAS implementation were shared. Thus, it may be easier for other countries that are still in the progress of implementation, like Malaysia and the state governments, to learn from other countries' experiences.

This paper aims to share findings on the status, issues and challenges faced by the state governments in Malaysia in implementing MPSAS. The following section discusses the problem statement while highlighting the significance of the study. This is followed by the literature review, methodology and discussions. This paper ends with a concluding remark and recommendation.

Problem Statement and Research Objectives

Many studies in Malaysia focus on either the federal government's adoption of accrual accounting or specific accounting issues pertaining to the adoption, while this paper elaborates on the overall experience and challenges faced by the state governments of Malaysia in the implementation of MPSAS. It is worth noting that accrual accounting has been on the agenda since the 1990s, and the MPSAS has only been completed recently, thus, publications on MPSAS adoption are close to none, especially among the state governments.

There are several studies on the issues and challenges in adopting and implementing accrual accounting. Those studies either focus on the federal levels or specific ministries only while others examine specific issues at specific ministries or only a few state governments. A study on the implementation of accrual accounting in central governments by Isa, Saleh and Abu Hasan (2013) reported the key success factors for the accrual accounting implementation at the federal government of Malaysia include strong support from top management, availability of hardware, the readiness of accounting systems, sufficient accounting skills, enhanced awareness among all staff and detailed action plans prepared for each organization.

A case study conducted on Ministry of Education employees by Azmi and Mohamed (2014) found that the employees are ready to implement accrual accounting but pointed out that the qualification and skills of the employees to apply the new system are of major concern. Similarly, Atan and Yahya (2015) found a positive attitude towards change among the accounting personnel in the federal government. Ismail, Siraj and Baharim (2018) found that change valance or belief that change will benefit the organization; while task knowledge and availability significantly influence change commitment. Several other studies have also reported that the issues, challenges and factors influencing accrual accounting implementation are human resource competency, software and technology capability, suitability of accounting policies and standards, and effective communication (Yusof and Jaafar, 2018; Ahmad, 2016). In addition, Mahadi, Noordin, Mail and Sariman (2014) found

implementation barriers such as difficulties in recognizing and valuing assets and liabilities, human competency, and high implementation costs.

Specific studies on accounting standards were undertaken by Ismail, Abdullah and Zainuddin (2013), which reported the issues in implementing IPSAS includes recognition, measurement and disclosure of property, plant, and equipment. They recommended that the Accountant General's Department (AGD) should provide intensive training to address the lack of staff competency before the full implementation of accrual accounting. Basnan, Md. Salleh, Ahmad, Harun and Upawi (2015) investigated the challenges of recognising and measuring heritage assets and found that staff competency is an issue that must to be addressed. Another study that investigated accounting practice was conducted by Md. Yatim and Norhashim (2016) highlighted major obstacles related to obtaining the correct opening balance, particularly for assets.

There are not many documented studies on the development of accrual accounting at the state governments, nor any on the adoption of MPSAS. A study by Sariman, Mahadi, Mail and Noordin (2017) found many similarities in the implementation strategies taken by the federal and state governments. Although state governments are expected to implement accrual accounting a year after the federal government, the study found that for the three states being studied i.e., Selangor, Sabah, and Penang, progress has been made in creating awareness, providing training for the accounting staff, and developing the accounting software. This study aims to explore the status, issues and challenges in implementing accrual accounting in the state governments in Malaysia.

Four research objectives were formulated:

1. To assess the current state of MPSAS-based accrual accounting implementation at the state governments.
2. To assess the current level of individual awareness and commitment to change towards accrual accounting among the state government accounting and finance staff.
3. To examine factors influencing the success of MPSAS-based accrual accounting implementation.
4. To examine issues, challenges and factors influencing the success of full adoption of MPSAS.

All 13 state governments responded to the questionnaire surveys and 11 respondents were interviewed. Thus, it will contribute significantly to knowledge about the state governments' status, issues and challenges in adopting the MPSAS-based accrual accounting. It will also provide information for the AGD in supporting the efforts made by the state governments.

Literature Review

The new public management idea and public sector reform movements which started in the 1980s have led to many governments adopting accrual accounting. Some governments even adopted the International Financial Reporting Standards (IFRS) used by private sector organisations in an effort to improve public sector financial management. In order to ensure financial reporting consistency, quality and harmonisation among accounting practices across different governments, the International Public Sector Accounting Standards Board (IPSASB) issued the IPSAS. The IPSAS, however, were mostly adaptations of the IFRS to suit the public sector context. For several financial reporting issues that are not related or not covered by the IFRS, the IPSASB developed a new set of standards.

Driven by the reforms and perceived benefits of accrual accounting, countries across the globe have been making efforts to adopt accrual accounting. Developed countries have adopted accrual accounting much earlier, evident by published literature about their efforts being dated before the 2020s. Based on developed countries' experience, IFAC and many other accounting professional bodies published guidelines and recommendations for a successful transition towards accrual accounting. IFAC has also been providing consultation and reviews to assist the transition, especially for developing countries that rely on international financial assistance.

Developing countries seem to be having more issues, mainly due to their lack of financial resources to fund the transition. It is also possible that the adoption has not been prioritised because resources can be best spent elsewhere. Listed below are the recommendations made by ACCA (2017) and IFAC (2020) to ensure successful IPSAS adoption. These recommendations are based on their study and working experience with various countries.

- i. Engagement of stakeholders, strong political support at the highest level of elected officials, commitment to implementation from senior appointed officials;
- ii. Transformation of structure and legislation;
- iii. Cultural and mindset change;
- iv. Improve staff skills capacity and willingness to accept accrual accounting;
- v. Budget and cost allocation for the infrastructure, training and others;
- vi. Integration of information technology;
- vii. Gap analysis and proper project planning; and
- viii. Seek external support.

As this paper aims to share the status, issues and challenges faced by the Malaysian state governments in implementing MPSAS, the following discussions enlighten the status, issues and challenges in other developing countries. It is also worth noting that many developing countries adopted accrual accounting because of the requirements from donor organizations that provided financial assistance to these countries. African countries have been recognised

as at the forefront of IPSAS adoption, where they embarked on IPSAS adoption as part of their financial management reform programmes. Both Ghana and Nigeria adopted IPSAS in 2016, but implementation was slowed by the lack of accountancy capacity to cope with the demand for the full implementation of IPSAS. Zambia has expressed its commitment for full adoption by 2020 and the main challenge it faced was the difficulties in collecting and accounting for revenue as well as the lack of information on expenditures, assets and liabilities. Zimbabwe's government targeted to fully implement the IPSAS by 2021 to replace the cash accounting currently used by its central government and local authorities. The challenges faced by Zimbabwe include governance weaknesses, reconciliations, lack of invoices and receipts, delays in submitting accounts and weak debt recovery systems (ACCA, 2017).

Tanzania was among the early full adopters of IPSAS in Africa, where it formally adopted IPSAS in 2013. It published 222 audited financial statements in 2016, out of which 24 had qualified opinions, 3 observed opinions and 5 disclaimers (ACCA, 2017). Among the challenges it faced were identifying and recognizing intangible assets, reconciling cash books and bank statements, and the weaknesses in information technology systems.

Added to the complications was the fact that the budget was prepared on a cash basis while the financial reporting framework was based on IPSAS accrual accounting, resulting in financial statements with some entries based on accruals and others on cash. Similar to many other countries, inadequate capacity building involved in preparing financial statements further aggravated the situation.

South Africa has partially adopted IPSAS, and full implementation can only be realised once the Financial Management Information System that supports Generally Recognised Accounting Practice (GRAP) is completed. Thus, it has significant problems with the quality of its public sector accounts, resulting in many qualified audit reports. Among the main reasons for qualified, adverse, disclaimer opinion was inadequate or missing documentation for accounts disclosed in the financial statements (Auditor-General of South Africa, 2017). South Africa also reported problems of manpower shortage.

The implementation of IPSAS in Asia was triggered by the Asia financial crisis in the late 1990s. Due to the IMF and World Bank requirements, many countries started to embark on financial management reforms in their public sectors. The biggest movement towards IPSAS adoption happened around 2015/2016, with countries such as Indonesia, Malaysia and Jordan announcing their decision to adopt IPSAS. Indonesia started its public sector reform programme in 1999 and was reported to fully implement IPSAS in 2015 in all entities. Full authority was given to the Ministry of Finance to oversee the process. Indonesia developed its own national standards with reference to the IPSAS. By 2016, thirteen Indonesian Government Accounting Standards (IGAS) were issued, comprising 4 interpretations and 9 technical bulletins (ACCA, 2017). Among the challenges reported by Indonesia are the underuse of IPSAS-based reports for decision making, the rise of accounting costs in which

economic benefits remain unclear, the lack of competent staff who can operate the new accounting system and costly implementation (Harun, Eggleton and Locke, 2021).

Jordan is one of the earliest adopters of IPSAS in the Middle East. Its MOF had officially endorsed the adoption and the implementation of IPSAS in 2015, a move from the modified cash basis public sector accounting standards (ACCA, 2017). The Jordan government prepared a five-year implementation roadmap under Jordan's Fiscal Reform Project. Among the reform projects that Jordan implemented are "the adoption of cash basis IPSAS; a review and consolidation of tax legislation; the adoption of results-oriented budgeting; applying a new chart of accounts; applying a common data standard; moving to a Treasury single account; and establishing government financial management information system" (ACCA, 2017, p.11).

In 2015, the Jordanian government issued its financial statement using both cash basis IPSAS and accrual IPSAS. Jordan claimed to be the first Arab country in the region to use full IPSAS, while other countries were still in the process of implementation. The key success factors in adopting IPSAS in Jordan include local legislation (with clear road map and procedures), infrastructure (sufficient hardware and software, sufficient internal and external network facilities, continuous update of the systems and accounting records and forms that comply with IPSAS requirements), stakeholders (support from top management and related parties) and external support (from external experts and the professional bodies) and training (Abu Haija, AlQudah, Aryan and Azzam, 2021).

Nepal had partially adopted IPSAS type standards using cash basis IPSAS for its 16 government ministries. It started with the development of Nepal Public Sector Accounting Standards (NPSAS) by its Accounting Standards Board which stipulates the mandatory and non-mandatory parts for enhanced disclosures. All government entities were required to adopt NPSAS under the guidance of the Financial Comptroller General Office (FCGO). The central government first started the implementation, followed by other operational entities. The problems faced in implementing NPSAS include inadequate qualified staff, especially in finance and audit, lack of support from stakeholders, and difficulty collecting the required data for disclosure of third-party transactions.

Sri Lanka embarked on IPSAS implementation based on a phased approach. Sri Lanka has issued 10 accounting standards out of the 32 IPSAS international standards, referred to as Sri Lanka Public Sector Accounting Standards (SLPSAS). However, the adoption of SLPSAS was not mandatory, resulting in a lack of full compliance in the financial reporting practices by its public sector agencies. In addition, Sri Lanka is also facing challenges such as a lack of experienced staff, inadequate change management structures, failure by the governments to institute professional committees to oversee the reforms, and inconsistencies in the adoption process by the individual public entities (Wang and Miraj, 2018).

Other countries, including Bangladesh, Pakistan, and Vietnam, are in the process of implementing IPSAS. Bangladesh applies cash basis IPSAS in its reporting, but several factors hinder the implementation progress. The country's public sector entities and individual departments do not manage their own cash as it is managed centrally by the government. This has resulted in the accounting functions being categorised as consolidated and treasury funds (ACCA, 2017). Furthermore, the financial authority given to public sector entities through the budget is limited. All self-accounting entities (SAEs) report their financial transactions to the Controller General of Accounts (CGA), which will incorporate them in the monthly central and annual finance accounts.

These factors have contributed to the low-quality reports and lack of timeliness in reporting due to delays in document submission to CGA by the SAEs. This, in turn, adversely affects the ability of the government to monitor the implementation of the budget. Wang and Miraj (2018) reported that separate accounting systems used by ministries and other government entities had compromised the overall quality and effective implementation of the IPSAS in Bangladesh, as well as the delayed production of financial reporting, which impaired its timeliness and usefulness.

Pakistan has also made progress in IPSAS adoption by implementing cash basis IPSAS since 2006/07. It started with the development of the New Accounting Model (NAM). At present, the state and the federal government's Financial Statements of Accountants General are prepared based on cash basis IPSAS. Similarly, as reported by Wang and Miraj (2018), Pakistan faced data reliability issues as the data is provided by various entities, impairing the completeness and timeliness of the information. There are also inconsistencies in recognising and recording the financial transactions, accounting staff are not adequately trained to adapt to the process in each of the phases, thus making it challenging to standardise the process. In addition, the government has yet to integrate the budgeting and accounting standards in a comparable manner, as such, it is difficult for stakeholders to hold specific entities responsible because they spend public resources being among the challenges faced by Pakistan, as reported in Wang and Miraj (2018).

On the other hand, India has been using a combination of cash and accrual-based accounting (Narsaiah, 2019). Initial steps were taken toward IPSAS implementation in 2013, but the implementation was delayed as the Indian government wanted to ensure the challenges were addressed and a detailed roadmap had been outlined. Among the challenges faced by India are the difference in readiness by the entities within the Indian government and other public entities, scarcity of information on assets and liabilities across many public entities and lack of appropriate accounting policies (Wang and Miraj, 2018). Furthermore, restructuring of the organisation, determination of the pilot implementation sites, and a thorough execution plan have not been adequately designed and initiated to support the process.

Malaysia's experience with IPSAS implementation started in 2011 with the government's announcement that the country would fully adopt IPSAS-type standards by 2015. The Malaysian Public Sector Accounting Standards (MPSAS) were then developed together with change management programmes to facilitate the adoption of accrual basis IPSAS. Malaysia has faced many challenges in its journey toward IPSAS adoption, which has impeded its target for full implementation of 2015. The reporting of accrual-based financial reports has been postponed pending approval of amendments to the relevant acts.

In addition, similar with other countries related to lack of expertise, Malaysia also faced inadequate infrastructure and IT support as well as issues related to accounting recognitions and treatments. Generally, the experiences in IPSAS implementation across developing countries are very similar and the factors that influence adoption can be categorised into three broad areas:

- i. **Resources** in which implementation is slowed down due to lack of competent accounting and finance staff and lack of IT facilities and IT support;
- ii. **Accounting and reporting issues** that relate to difficulties in recognition and valuation of assets, liabilities, revenue and expenses; and
- iii. **Top management commitment** in ensuring successful change management programmes. Strong support and commitment from the government to push the IPSAS agenda is considered one of the most critical factors in ensuring the successful implementation of IPSAS.

Methodology

This paper aims to share findings on the status, issues and challenges in adopting accrual accounting in Malaysia's state governments. The conceptual framework used to approach this study has been the new public management and reforms that have seen global accrual accounting adoption in the public sector. IFAC and many other accounting professional bodies have published guidelines and recommendations for a successful transition towards accrual accounting. To realise the aim of this study, a mixed methods approach has been adopted, utilising a combination of archival searches, questionnaire surveys and interviews. The instruments for questionnaires have been developed based on the IFAC and professional bodies' guidelines and instruments used in a study by Abu Haija et al. (2021).

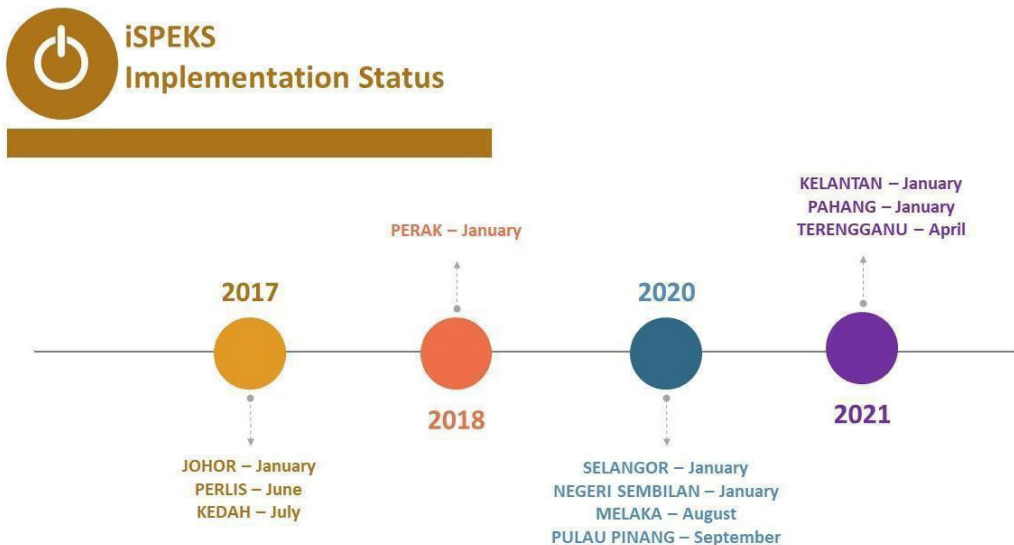
This study covers the 13 state governments of Malaysia, and the respondents are their accounting and finance staff. Online questionnaire surveys were administered, and 147 responses were analysed and tabulated in the findings section. Semi-structured interviews were then conducted with 11 state governments separately to support and confirm the findings obtained from archival searches and questionnaire surveys. The interviews were conducted using similar questions adapted from the questionnaire survey with additional questions based on the findings of the survey. All interviews were held online using the Google Meet platform. All of the information obtained has been analysed descriptively,

while interview data were used to support explanation and discussion. The following section discusses the findings.

Discussion

Generally, it is found that all state governments in Malaysia have made a significant effort to implement accrual accounting with support of the AGD. Diverse awareness and training programmes and workshops were held to prepare staff at the state governments to implement accrual accounting, although initially, the exposures were more on accrual accounting instead of MPSAS. The accounting system for the state governments (except for Sabah and Sarawak) was developed by the AGD. The Integrated State Accrual Accounting System (Sistem Perakaunan Akruan Kerajaan Negeri, iSPEKS) for the state governments started in 2015. The system can produce financial reports on an accrual and cash basis. iSPEKS was implemented on a pilot basis. As shown in Figure 1 below, it started with Johor in January 2017 and ended with Terengganu in April 2021. The implementation of iSPEKS affects the phase in which accrual accounting is implemented since MPSAS are embedded in the system.

Figure 1: iSPEKS Implementation Status



(Source: AGD Website <https://www.anm.gov.my/en/accounting/accounting-system/ispeks>)

Although there is no mandatory requirement to publish MPSAS annual financial statements, the effort to get ready prevailed in all states, especially when the accounting software iSPEKS is installed and running. To use iSPEKS, the state governments must start collecting

information on assets and liabilities to enable opening balances. Thus, the earlier iSPEKS is being implemented, the faster implementation of accrual accounting and adoption of MPSAS would be.

The following discussions will focus on the level of MPSAS adoption in the state governments of Malaysia, their readiness and perceived challenges that they face. To assess the level of MPSAS adoption, questions were asked on the accounting standards being referred to, whether iSPEKS (or their own computerised accounting system, in the case of Sabah and Sarawak) has been fully functional and whether the staff are able to use the computerised accounting system.

Table 1 shows that all three standards, Government Accounting Standards (PPK), Cash Basis IPSAS and MPSAS, are being referred to. The results show that both cash and accrual accounting is still being practiced. All interviewees confirm this. This situation is not a surprise because the Financial Procedure Act 1957 has not been amended, therefore, all state governments are still required to publish cash basis financial statements. Based on the results, 70.1% of the respondents indicated the use of MPSAS, in which 49.7% only refer to MPSAS while 20.4% are using MPSAS with PPK and/or Cash Basis IPSAS or all three standards. To gain further insights on the findings, clarifications were obtained during the interviews. iSPEKS can generate both cash and accrual-based financial reports. Accounting entries are captured under the accrual basis and the system will transform the information to generate cash-based financial statements. Thus, it is understood why almost half of the respondents no longer refer to PPK or Cash Basis IPSAS.

Table 1: Accounting Standards Being Referred To

Accounting Standards	Frequency	%
PPK	37	25.2
Cash Basis IPSAS	7	4.76
MPSAS	73	49.7
PPK and MPSAS	10	6.8
Cash Basis IPSAS and MPSAS	6	4.1
PPK, Cash Basis IPSAS and MPSAS	14	9.5
Total	147	100.00

N= 147

Source: Survey Data

Table 2 shows the respondents' view on the installation and use of iSPEKS (or the computerised accounting system in the case of Sabah and Sarawak), the ability of staff to use the system, opinion on whether accrual has been fully implemented and whether MPSAS has been fully adopted. More than half of the respondents indicated that iSPEKS is fully functioning (63.9%), while only 14.9% of the respondents indicated that iSPEKS is not yet fully functioning.

Table 2: Status of Accrual and MPSAS Implementation

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	Computerised accounting system/iSPEKS is fully functioning	63.9	21.1	14.9
ii.	All relevant staff can use the computerised accounting system/iSPEKS	76.1	12.9	10.9
iii.	Overall, accrual accounting has been fully implemented at the state government	48.3	23.1	28.6
iv.	Overall, MPSAS have been fully adopted at the state government	54.5	21.8	23.8

N= 147. Total is not 100% due to rounding errors

Source: Survey Data

This is confirmed through interviews in which the respondents explained that those that have recently started, they must ensure that the new system is able to generate the cash-based financial statements to be tabled in the State Legislative Assembly. Besides, accrual-based statements are only required one year after the implementation by the federal government. 76.1% of the respondents indicated that all relevant staff could use the system, which is very encouraging. Since the training on the use of the system is still ongoing, it is expected that the percentage of those that can use the system will increase in the future. Overall, less than half (48.3%) indicated that accrual accounting had been fully implemented, while 54.5% of the respondents indicated that MPSAS had been fully implemented.

Based on the recommended prerequisites for successful adoption of accrual accounting, the readiness factors were surveyed, and the findings are presented in the **Table 3** below. Overall, readiness on all the five prerequisites is 4.03 on a 5-point Likert scale, which indicates a high level of readiness. All the factors - infrastructure, training, system and leadership fetched a mean greater than 4, while only staff fetched a 3.48 mean. Thus, almost all factors that are prerequisites to the successful implementation of accrual accounting are almost perfect, except for staffing, which still requires slight improvement.

Table 3: Descriptive Statistics for Organizational Readiness

	Min-Max	Mean	Standard Deviation
Infrastructure	1.33-5	4.04	0.76
Staff	1.00-5	3.48	0.95
Training	2.75-5	4.10	0.58
System	3.00-5	4.15	0.57
Leadership	2.00-5	4.12	0.74
Organisational readiness (overall)	2.12-5	4.03	0.53

N= 147

Source: Survey Data

Various studies conducted by accounting professional bodies, academia, and governments, have highlighted factors influencing the implementation of IPSAS. Adapting the factors introduced by Abu Haija et al. (2021) on Jordan's experience, this study surveyed factors of training, guidelines and legislation, infrastructure, external support and stakeholder engagement to discover employees' perception of the factors and how they influenced them. **Table 4** presents the findings on training aspects.

Table 4: Training

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	Training in MPSAS is needed to enable the staff understand the standards	95.9	4.1	-
ii.	Staff are kept updated regarding the MPSAS	74.1	19.7	6.1
iii.	The accounting and finance department comprises trained staff	68.0	23.8	8.1
iv.	The accounting and finance department get assistance from well-trained people in the implementation of MPSAS	68.1	23.8	8.1

N= 147

Source: Survey Data

A high majority of respondents or 95.9%, agree that training in MPSAS is needed to enable staff to understand the accounting standards, and 74.1% agree that staff are kept updated on the MPSAS. Although they are kept updated on the MPSAS adoption, the level of understanding and ability to apply the standards to the government's accounting items are still insufficient. From the interviews, respondents expressed the need for skillsets, or skilled human resources. A majority of respondents or 68.0%, agree that the accounting and finance department comprises trained staff and 68.1% agree the department gets assistance from well-trained people in the MPSAS implementation. Many staff have attended more than one training since the beginning of the accrual accounting implementation agenda for the initial target implementation of 2015 at the federal government.

As the iSPEKS is not up and running until 2017, the knowledge seems to fade without actual application or trial run. With iSPEKS installed in 2017 and requirements to identify, evaluate and record assets, liabilities, expenses and revenues, accounting and finance staff realised the problems they are facing and the need for more training. Thus, during interviews as well as the open-ended responses from questionnaire surveys, many have indicated the need for training on MPSAS to refresh and the critical need for skilled accounting staff. Training also shall include support staff because their appointment at state governments comes from various levels, especially those without exposure to accounting or MPSAS.

Respondents also highlighted the need for continuous training, suited to current needs and which should also include troubleshooting. Interview responses also indicated that state

governments with more skilled staff, including accounting-trained head of treasurer appear to fare better in implementing MPSAS through iSPEKS.

Table 5 is on the guideline and regulations supporting the implementation of MPSAS. The majority of respondents agree to having a clear road map for adopting MPSAS (73.3%) and availability of periodical reports, including the completion stage of MPSAS implementation (60.6%). The intention to adopt accrual accounting has been communicated since 2000, when an awareness campaign, training and planning have also been initiated.

Table 5: Guidelines and Legislation

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	Related parties had a clear road map, including all steps and procedures for adopting MPSAS	73.3	25.2	5.5
ii.	Related parties issued a periodical report which includes the stage of completion of MPSAS implementation	60.6	29.3	10.2
iii.	Related parties corrected and mitigated the deviations in the adoption process for MPSAS	66.0	27.2	6.8
iv.	Related parties issued a periodical report including the deviations	57.2	34.7	8.2
v.	State government has statutory enactment to adopt MPSAS	65.3	29.3	5.4

N= 147

Source: Survey Data

Various circulars instructing on the move towards accrual accounting, training of staff and securing the infrastructure were made to accommodate the change of accounting system. Thus, there is no doubt why the majority feels the road map, guidelines and regulations are clear. The initial target implementation in 2016 (a year after the Federal Government’s 2015) has been moved several times, where now is set to 2023, has also rang a loud bell and pushed accounting staff to be ever ready. Although the legislation has not been mandated for presenting MPSAS-based financial reports, all state governments have prepared themselves via the accounting system,iSPEKS. The system is developed for MPSAS but allows for concurrently generating modified cash-based reports. Thus, it is worth noting that the MPSAS has been implemented by the state governments gradually since the iSPEKS was introduced in 2017. This also allows state governments ample time to prepare themselves for reporting using MPSAS when the time comes. Having iSPEKS up and running also allows state governments to spot issues with the system and take remedial action evidenced in the majority agreement with the deviations in the MPSAS adoption process being corrected and mitigated (66%) and periodical reports, including the deviations, are available (57.2%).

All state governments in Malaysia are subject to the Financial Procedures Act 1957, thus there is no need to amend any laws or enactment at the state level regarding the implementation of MPSAS. The majority of the respondents, 65.3%, agreed that the state government has statutory enactment to adopt MPSAS, except for some confusion with the unavailability of laws enacted on the reporting of financial affairs using MPSAS. Currently, the financial reports are produced on a modified cash basis. Interviews revealed that some states have started to print reports on accrual-based for internal uses as well as to confirm the accuracy of double entries.

Nevertheless, several states such as Pahang, Kelantan, Terengganu, Melaka and Sarawak are quite behind in the running of iSPEKS (its own accrual-based system in the case of Sarawak). Sarawak has not experimented with the accrual accounting system as their software is still in the development stage. While Pahang, Kelantan, Terengganu and Melaka only installed their iSPEKS in 2021. Johor and Perlis were pioneers with the iSPEKS from 2017, while many other states began in early 2020. Though it started a little later than the piloted states, Selangor and Penang showed advanced development where they have already produced financial reports using MPSAS for internal usage although it is not required yet.

Table 6: Infrastructure

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	This organization has sufficient hardware and software to implement MPSAS	81.6	16.3	2.1
ii.	This organization has sufficient internal networks to facilitate the adoption of MPSAS	81.7	17	1.4
iii.	This organization has sufficient external networks with the AG office to facilitate the adoption of MPSAS.	65.3	28.6	6.1
iv.	The computerised accounting systems are continuously updated to comply with the requirements of MPSAS implementation	68.7	25.2	6.1
v.	The accounting records and information are adjusted to comply with MPSAS implementation	73.4	21.1	5.4

N= 147

Source: Survey Data

Table 6 is on infrastructure available to support MPSAS implementation which is mainly about the computer hardware and software. The majority agreed that the hardware and software are sufficient (81.6%). Responses from interviews also indicate that these aspects are adequate, except that some of the hardware needs replacement as it becomes obsolete. During the early announcements of accrual accounting implementation, departments and units were asked to conduct gap analysis identifying their needs and subsequently obtaining the facilities.

Sufficient internal networks to facilitate MPSAS adoption also recorded a majority agreement of 81.7%, while external networks recorded a slightly lower majority of 65.3%. Interviewees mentioned that they do have problems with the system and networks during the early days of usage, but many of the issues have been solved while they were experimenting with it and the system is very much better now. Some states that adopted iSPEKS later enjoyed the privileges of having fewer issues compared to the pilot states. Respondents also suggested a post-mortem be done to evaluate the system and take remedial action.

A majority also agreed that iSPEKS are continuously updated to comply with requirements (68.7%) as well as the accounting records and information are adjusted to comply with MPSAS implementation (73.4%). Respondents also wrote about the challenge of getting the accounting data correct due to a lack of comprehension towards MPSAS. Nevertheless, it was resolved through communication with other state governments with experience or feedback from the AGD office itself. Though some respondents mentioned the challenges of having different accounting software at state governments, the iSPEKS, while at federal government iGFMAS.

Table 7 is on the external support. A majority agreed that they cooperate with external experts to help in MPSAS adoption (68.7%) and to train their employees on MPSAS implementation (64.6%). They also collaborate with professional bodies to help them understand and apply MPSAS (62.6%) as well as recruits well qualified people to help the employees understand and apply MPSAS (61.2%). Although it is not yet optimum, engaging experts and professionals to help with MPSAS has been done continuously. Interviewees also express the need for MPSAS experts to help them train their employees.

Table 7: External Support

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	This organisation cooperates with external experts to help in MPSAS adoption	68.7	27.2	4.1
ii.	This organisation cooperates with external experts to train the employees on MPSAS implementation	64.6	30.6	4.8
iii.	This organisation cooperates with professional bodies to help the employees to understand and apply MPSAS	62.6	32.7	4.8
iv.	This organisation recruits well-qualified people to help the employees to understand and apply MPSAS	61.2	34	4.8

N= 147

Source: Survey Data

Table 8 is on stakeholder engagement. A majority agreed that the top management has clear objectives and strategies (71.4%), seek to promote the concept and importance of

transforming to MPSAS (71.4%) and mitigates the obstacles of the transformation (73.4%). The majority of the state governments, were proactive towards MPSAS and eager to use its reports. Many of the heads of treasury and accountants are very committed to implementing MPSAS which has also motivated other staff as well.

Table 8: Stakeholder Engagement

		Frequency (%)		
		Agree	Neither Agree nor Disagree	Disagree
i.	Top management has clear objectives and strategies for MPSAS implementation	71.4	25.2	3.4
ii.	Top management and related parties seek to promote the concept and importance of transforming to MPSAS	71.4	23.8	4.8
iii.	Top management and related parties mitigate the obstacles of transforming to MPSAS	73.4	23.1	3.4
iv.	The application of MPSAS requires delegation of authority to use professional judgement in adopting MPSAS	61.9	30.6	7.5
v.	Top management and related parties lead the transformation of organisational culture in line with the requirements of MPSAS	71.4	25.9	2.8
vi.	Top management and related parties seek to amend the local legislation in line with the requirements of MPSAS implementation	61.2	32.7	6.1

N= 147

Source: Survey Data

The majority also agreed on delegation of authority to use professional judgement in adopting MPSAS (61.9%) and highlighted concerns over the insufficient skilled staff to do so. A majority (71.4%) agreed that the top management and related parties lead the transformation of organisational culture towards adopting MPSAS. A slightly lower majority agree (61.2%) on the amendment of local legislation. Interviews confirmed that state governments do not have to amend any state laws for the implementation, as the FPA has stipulated that the state governments will follow the federal government.

Some respondents wrote about the need to have clear policies for adopting MPSAS at the state governments and the importance of having a monitoring unit to oversee the adoption and provide feedback.

In summary, **Table 9** shows the overall mean and standard deviations for all factors elaborated above. The mean is closer to 4, indicating agreement with all the factors, strengthened by the standard deviation below 1. Therefore, it can be said that training, guidance and rule, infrastructure, external support and top management as well as stakeholders' involvement are crucial in encouraging the adoption of the MPSAS.

Table 9: Mean Analysis: Overall Factors

	Min-Max	Mean	Standard Deviation
Training	2-5	4.01	0.64
Guidance and rule	1.8-5	3.72	0.76
Infrastructure	1-5	3.91	0.70
External support	1-5	3.79	0.79
Top management and stakeholders' involvement	1-5	3.83	0.75

N= 147

Source: Survey Data

Respondents were also asked their perception of the benefit of adopting MPSAS accrual accounting. **Table 10** presents the frequency of statements about the benefits of MPSAS adoption. This section recorded high agreement on all statements. A large majority agreed with MPSAS's ability to help state governments produce more comprehensive financial reports for users (89.1%), as well as promote transparency and accountability in financial reporting (89.1%).

Table 10: Benefits of MPSAS

	Frequency (%)		
	Agree	Neither Agree nor Disagree	Disagree
The transition to MPSAS helps the state government to produce more comprehensive financial reports for the financial statements users	89.1	10.9	-
The transition to MPSAS promotes transparency and accountability in financial reporting	89.1	10.9	-
Using MPSAS provides detailed information on the assets and liabilities of the state government.	87.7	12.2	-
Using MPSAS helps the state government to improve the performance evaluation of each unit and department.	84.3	14.3	1.4
The transition to MPSAS helps the state government to improve the performance comparison of each unit and department.	86.4	12.9	0.7
The transition to MPSAS helps the state government to improve the cost control of each unit and department.	85.7	13.6	0.7
The transition to MPSAS helps the state government to obtain financial information of each unit and department much faster.	81.6	17	1.4

	Frequency (%)		
	Agree	Neither Agree nor Disagree	Disagree
The transition to MPSAS helps the state government to obtain financial information of each unit and department much easier.	83	16.3	0.7
The transition to MPSAS helps the state government to obtain feedback on the performance of each unit and department.	82.3	17	0.7
The transition to MPSAS boosts the confidence of investors in the state government's economic performance	82	16.3	0.7
The transition to MPSAS helps the state government to reduce the risks of bribery and fraud in the state government.	78.2	20.4	1.4

N = 147

Source: Survey Data

Higher agreement on using MPSAS provides detailed information on assets and liabilities (87.7%), improve performance evaluation of each unit and department (84.3%), improve performance comparison of each unit and department (86.4%), improve cost control of each unit and department (85.7%), speed up (81.6%) and ease the process of obtaining information (83%). 82.3% agree that MPSAS helps the state government to obtain feedback on the performance of each unit and department as before MPSAS data was diluted across departments and units. 82% also agreed that MPSAS boosts investors' confidence in the state government's economic performance and supports the state government in reducing the risks of bribery and fraud (78.2%).

In the questionnaire survey, respondents were also asked to write about the main challenges they have in adopting MPSAS. Many have responded the main challenge being having to understand and apply MPSAS without proper training, training was held years earlier, which seems not very relevant at the present time, limited staff as well as lack of skill and knowledge, lack of guidance in determining the coding for accounting items and unavailability of data for old assets. Some commented about top management's lack of commitment, which imposed all financial responsibilities on irrelevant staff. Respondents suggested a top-down approach from management to ensure full commitment at the working level, implementation by phases and provide a special portal guiding the adoption of MPSAS, such as to identify coding of accounts for MPSAS.

Table 11: Mean Analysis: Benefits of MPSAS

	Min-Max	Mean	Standard Deviation
Benefits of MPSAS	3-5	4.27	0.65

N= 147

Source: Survey Data

In summary, Table 11 shows the overall mean and standard deviations for all the statements on the benefits of MPSAS. The mean is 4.27 and a standard deviation of 0.65, indicating high agreement on all statements about the benefits of MPSAS. It can be concluded that respondents did not doubt the benefits that will be derived from the adoption of MPSAS as compared to the cash-based accounting system.

Conclusions

This study focuses on the status, issues and challenges of state governments in Malaysia in implementing MPSAS. The results show that all state governments have started using accrual accounting via the MPSAS embedded computerised accounting system developed by the AGD, namely iSPEKS (except for Sabah and Sarawak, which developed their own accounting system). Although initially there were many issues related to the computerised system, through time, Bahagian Khidmat Perunding (BKP) and the vendor managed to solve most of the issues and users have been using the iSPEKS satisfactorily.

With respect to MPSAS adoption, most interviewees agreed that the most critical success factor is staff skill, followed by teamwork and commitment among the staff in the accounting and finance department, top management support and encouragement, frequent refresher courses on MPSAS and adequate infrastructure support. The findings from the questionnaire survey showed that training, infrastructure and top management support are important factors in ensuring the successful implementation of MPSAS.

The postponement of mandatory reporting based on accrual and MPSAS and uncertainty of the exact implementation date have caused fatigue among the accounting staff. Staff who have been trained before would need to be retrained after several years. In addition, the implementation of accrual accounting by state governments is challenged by insufficient qualified accounting staff. Furthermore, the practice of rotation of accounting staff every 3-5 years has added to the difficulty in fulfilling the necessary skill requirements at each state government.

In view of the above, the following recommendations are proposed. The state governments should have well-planned training programs to improve the skills of not just the accounting staff but also all support staff and to ensure sufficient numbers of staff are available at the state governments. In addition, there should be well-planned programmes to address reform fatigue effectively. Issues regarding the adoption of MPSAS are almost similar at all government levels, including the state governments. Accounting and finance staff are facing similar issues of recognising the accounting items or coding. Thus, having specific guidelines using diagrams for step-by-step instructions on aspects of MPSAS would be very helpful. The guidelines or frequently asked questions (FAQ) can be placed on a website for ease of reference. This could also overcome the lack of expertise to refer to when needed.

This study contributes to the body of knowledge by filling in the gap in the literature on a study focusing on state governments in Malaysia while relating to experience in other countries. It provides evidence that the factors influencing the successful implementation of accrual accounting and the accrual-based accounting standards are similar at any level of government. This will be a good lesson for the implementers of accrual accounting in the public sector. This study also put forth several recommendations based on its findings which can help state governments consider remedial measures. The findings and recommendations also help the AGD further strengthen its strategies to support the implementation of MPSAS at various government levels.

Given the short time span for this study and the COVID-19 pandemic, the best alternative to distribute a questionnaire survey is online via a google form. However, the researcher cannot determine whether the right person is answering the survey. Respondents for the survey, though comprising all accounting and finance staff, come from several levels and backgrounds and may have different comprehension of the questions distributed. Interviews have helped a great deal to further understand the issues faced by state governments in the implementation of MPSAS.

Future research should consider users of the accrual-based financial reporting, views of the parliament and state legislative assembly members and comparative study between federal and state governments.

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Exploring Hurtt's Professional Scepticism Scale for Public Sector Accountants in Malaysia

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Abstract

Purpose: This study explores the validity of Hurtt's (2010) scepticism model in the context of accountants in the public sector in Malaysia.

Methodology/Approach: A factor analysis was conducted to determine the suitability of the instrument for accountants in the public sector. Three hundred and fifty-six (356) accountants appointed in various government departments throughout Malaysia participated in this exploratory study.

Findings: The results indicate that only three of the Hurtt (2010) professional scepticism traits, namely questioning mind, suspension of judgment and search for knowledge, are relevant in determining professional scepticism of the accountants in the public sectors. On the other hand, interpersonal understanding, self-determining and self-confidence are irrelevant since respondents possess strong interpersonal understanding, although they tend to listen to others without much questions.

Research Limitations/Implications: The findings of this study make a contribution to the body of accounting literature by presenting accountants, particularly those working in the public sector, with a model of professional scepticism.

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Practical Implications: This study shall provide guidelines for Malaysian state governments in identifying the professional scepticism of their accountants.

Originality/Value: This study is the first that provides a professional scepticism scale for accountants in the public sector.

Keywords: Professional scepticism, accountants, public sector, Malaysia.

Introduction

Fraud and corruption cases occurring in the public sector organisations such as misappropriating government funds in the Ministry of Youth and Sport (Gunaratnam, 2016), the abuse of power in the Sabah State Water Department (Chan, 2016) and graft through assets in the Selangor Ministry (Nazlina, 2015) have raised concerns on the contributing factors that led to such cases. Furthermore, the Malaysian Anti-Corruption Commission Annual Report (2020) revealed that the offence consists of abusing position and power for personal gain, lying when submitting claims, verifying information with false details, insubordination, irresponsibility, carelessness, carrying out official duties inefficiently, accepting gifts and entertainment, soliciting money, serious debts, and engaging in other businesses and politics, which could be attributed by the public sector accountants' credibility in their course of work. Accountants in the public sector are under the purview of the Ministry of Finance (MOF). Besides, their appointees are located in various divisions, branches, states and ministries throughout Malaysia. The responsibility of the accountants in the public sector is to ensure the preparation of financial statements of the government is in accordance with the legal requirements. It should also be generally in acceptable accounting standards, as to ensure compliance and enforcement of financial management and accounting procedures as prescribed under relevant laws and to administer government accounting services. To ensure that these aims can be achieved, accountants are expected to perform their course of work effectively and efficiently. One of the factors contributing to their effective and efficient work is professional scepticism.

The importance of professional scepticism, particularly among the auditors, is part of the Malaysian regulatory requirement whereby the Audit Oversight Board (AOB) imposes all audit firms to apply professional scepticism (Audit Oversight Board, 2011) since evidences of professional scepticism have shown that sceptical attitude of auditors would reduce misstatements resulting from fraud (McCormack & Watts, 2011). Arguably, professional scepticism also forms an integral part of a professional accountant's skill set and is fundamental in performing their work. Accountants with high professional scepticism would be able to identify fraud, such as processing false claims by vendors or subordinates or in situations where the perpetrators seek to deceive the accountants.

In the auditing literature, the issue of professional scepticism has been extensively discussed and researched. For auditors, professional scepticism is an indispensable quality and serves as a key determinant of their behaviours and decisions (Sun, Jia & Liu, 2021). Lack of professional scepticism is often quoted as the main reason for auditors' failure to detect material misstatements (Quadackers, Groot & Wright, 2014; Sayed Hussin, Iskandar, Saleh & Jaffar, 2017). Similar to the auditors, the accountants would also need to have high professional scepticism as their course of work also involves activities involving judgments and decisions such as approving claims or payments from vendors and subordinates. Notably, studies have shown that levels of professional scepticism differ among individuals. Arguably, accountants' lack of attitude would affect not only their credibility as individuals, but also the organisation they are working with. Hurtt (2010) has developed a professional scepticism scale to measure the professional scepticism of auditors. However, a review of the accounting literature shows a study on professional scepticism, particularly on measuring professional scepticism of the accountants, is yet to be explored.

This study aims to explore Hurtt's (2010) professional scepticism scale in examining the level of professional scepticism of accountants in the public sector. Through a questionnaire distributed to 356 accountants working in various government departments across Malaysia, this study demonstrates that only three of the professional scepticism traits identified by Hurtt (2010) are significant in determining the level of scepticism exhibited by accountants working in the public sector. The three traits are questioning mind, suspension of judgment and search for knowledge. The findings of this study will assist Jabatan Akauntan Negara Malaysia (JANM) and other interested parties in understanding the level of professional scepticism among accountants in the public sector. The remainder of this paper is structured as follows. The following is Section 2 which presents the literature review. This is followed by Section 3 which explains the research design. Section 4 presents the results and discussion. Section 5, which is the final, concludes this study.

Literature Review

Professional scepticism refers to the attitude that is often associated with questioning, careful observation, probing reflection, and suspension of belief (Sayed Hussin & Iskandar, 2013). Professional scepticism comprises two components. First is sceptical mindset, which is the way of thinking or processing information. Second is the sceptical attitude, which is the way auditors evaluate the audit evidence obtained cognitively and affectively (Nolder & Kadous, 2018). Nelson (2009) stated that professional scepticism can be classified into two perspectives: neutrality and presumptive doubt. Neutrality represents the individuals' mindset that assumes no bias or dishonesty in financial statements, whereas the presumptive doubt mindset is vice-versa. Nelson (2009) indicated that there is excessive audit evidence in certain areas due to the implementation of a presumptive doubt perspective by regulators in their inspections. To achieve the optimal balance between effectiveness and efficiency, accountants may refer to the professional scepticism continuum that can be used, depending on the particular situation, when performing their tasks

(Glover & Prawitt, 2014). The continuum includes a behavioural range from complete trust to complete doubt, where they have a level of audit evidence at each stage/level of the continuum, except at complete trust. There is no application of professional scepticism at this stage. Most studies on professional scepticism investigated how scepticism influences judgments, for instance, in evaluating material misstatements in financial statements (Sayed Hussin et al., 2017) and audit engagement planning (Rodgers, Mubako & Hall, 2017).

A large group of studies in the audit literature has examined professional scepticism. Often, these studies examined the ability of an auditor to practice professional scepticism in detecting fraud (Harding & Trotman 2009, Sayed Hussain & Iskandar, 2013, Suryandari & Yuesti, 2017). Sayed Hussin and Iskandar (2013) argued that the level of professional scepticism among auditors must be maintained so that proper audit procedures are applied during the audit process. Therefore, a specific professional scepticism scale is needed to measure the auditors' professional scepticism. Hurtt (2010) attempted to develop a scale to measure professional scepticism for auditors. Her professional scepticism scale consists of 30 items derived from the auditing standards and psychological research and tested through a rigorous and iterative scale validation process (Sayed Hussin & Iskandar, 2013). Most of the studies examined professional scepticism using Hurtt's (2010) professional scepticism scale. Hurtt (2010) provides an explanation of professional scepticism into six traits. Each trait consists of items that can contribute to the level of professional scepticism of the auditors. Arguably, these traits may be applicable to accountants as their tasks include validating the authenticity of transactions in the public sector. However, there is yet a study that have examined these traits using accountants in the public sector as the subject.

The first trait is a questioning mind, which describes an individual's disposition in terms of their level of interest and curiosity (Hurtt, 2010). Frequently, a person with a mind constantly questioning things will persist in asking questions to gain clarity and justification (Kurtz, 1992). An auditor will have a mind that is open to questioning to gather adequate evidence before arriving at audit judgments or drawing conclusions (Sayed Hussin & Iskandar, 2013). In addition, there is also a possibility that the auditors would question the veracity of their own judgments (Fogelin, 1994). The literature has in fact discussed questioning mind as an important trait of scepticism. For example, scepticism was defined by Fogelin (1994) as the state that one is in when one call matter into doubt. A sort of scepticism known as a questioning mind attitude is stringently required by auditing standards and is broadly backed by research in the accounting field. It is generally anticipated that this sort of scepticism will lead to an increase in auditor performance, which, in turn, is anticipated to lead to an improvement in the audit's overall quality (Gong, Kim & Harding, 2014).

Hurtt (2010) also posited that an auditor should also possess suspension of judgment, which is the second trait. A person might be said to have a suspension of judgment when they take the stance that they would not make a choice until they have sufficient evidence or clarity (Hurtt, 2010). According to the theory put up by Mautz and Sharaf (1961), an auditor should not make a decision until all of the evidence has been made properly available. Similarly,

Johari, Hati and Sayed Hussin (2022) have also mentioned that *'suspension of judgment emphasised on pursuing and doubting rather than on a specific direction of doubt'* (p. 244). In the psychology literature, this trait is said to be closely related to the inverse of the need for cognitive closure (Hurttt, 2010), which as noted by Kruglanski (1989, p.14), *"the desire for a definite answer on some topic, any answer as opposed to confusion and ambiguity"*. That is, sceptics are people who maintain an open mind while critically analysing evidence. In addition, auditors who have the quality of being able to suspend their judgment will not accept any statement or explanation before thoroughly analysing the audit evidence. Suspension of judgment will lead auditors to hold off on rendering judgments until they have collected adequate supporting data (Kurtz, 1992).

The third trait identified by Hurttt (2010) is searching for knowledge. According to Bunge (1991) and Popkin and Stroll (2002), the term "looking for knowledge" refers to an individual's desire to research in order to gather extra information with the purpose of reducing the amount of uncertainty in a given situation. As Christina and Tjaraka (2018) and Rodgers et al. (2017) have both emphasised, the more knowledge auditors have, the better knowledge transfer will be, which in turn helps better decision-making. Hurttt (2010, p. 154) noted that *"search for knowledge differs from the trait of a questioning mind because a questioning mind has some sense of disbelief or doubt, while the search for knowledge is more of a sense of general curiosity or interest. Sceptics are interested in knowledge in general and are not necessarily motivated to search simply to verify a specific conclusion or obtain specific information"*. These three traits, namely questioning mind, suspension of judgment and searching for knowledge, are associated with how the auditors evaluate evidence (Hurttt, 2010).

The fourth trait is interpersonal understanding, which refers to awareness of the factors that influence an individual's response to a particular circumstance or occurrence (Hookway, 1990). According to Sayed Hussin and Iskandar (2013), auditors with a high level of professional scepticism are more likely to search for information while performing an audit by utilising a wide variety of audit procedures and techniques. Obermiller and Spangenberg (1998, p. 160), in the consumer behaviour literature, noted that *"advertising scepticism consists not only of questioning the "literal truths of ad claims," but also of questioning the "motives of the advertisers"*. In a similar vein, the psychological literature suggested that interpersonal understanding referred to as social competence, is the concept that most effectively captures the interpersonal aspect of professional scepticism.

Self-determination is yet another characteristic associated with professional scepticism, according to Hurttt (2010). She defined self-determining as the capacity of an auditor to determine the sufficiency of the information that was presented prior to making a decision. According to Mautz and Sharaf (1961, p. 35), *"the auditors must have the professional courage not only to examine and perhaps discard the proposals of others critically but to submit his own inventions the same kind of detached and searching evaluations."* Auditors who have a high level of self-determination are less likely to rely on customers'

suggestions and are also less likely to be easily swayed by the beliefs or opinions of others. This is because auditors with a high level of self-determination are less likely to be easily influenced by the beliefs or opinions of others. Those auditors who are sceptical will be determined to conduct additional research and gather additional data until they reach a point where they are personally satisfied and confident enough to make their own decisions (Sayed Hussin & Iskandar, 2013).

The last trait is self-confidence since scepticism also necessitates a certain level of self-confidence. A belief in one's value, as well as one's capabilities, is what defines the trait of self-confidence. Self-confidence is characterised by this belief (Hurttt 2010). Auditors who possess this quality are more confident in their capacity to competently carry out audit tasks and arrive at their own audit judgments and findings. Often, auditors with this trait would become more confident in performing their tasks and making a judgment (Boush, Friestad & Rose, 1994). Sayed Hussin and Iskandar (2013) argued that self-confidence can reduce material misstatements in financial statements due to fraud. Meanwhile, Johari et al. (2022) have also mentioned that trust will develop strong self-confidence and build professional scepticism. In fact, studies in consumer literature have found that self-confidence has positively correlated with advertising scepticism (Hurttt, 2010).

This study proposes that accountants, like auditors, would also require all of these characteristics because the tasks they perform involve processing monetary transactions that are susceptible to fraud. It can be argued that having a high level of professional scepticism is essential for accountants to have to do their jobs effectively. However, to this date, there is yet a study that have examined professional scepticism that used accountants as their subject, particularly in the public sector. Consequently, this led to the question on whether the accountants would possess the same professional scepticism traits as the auditors. Subsequently, this raises doubts on whether the Hurttt (2010) professional scepticism scale can be applied to accountants in the public sector.

Method

Sample Selection

The accountants working in the public sector who have been appointed by JANM are selected as the sample in this study. The accountants may be found in various divisions, departments, branches, states, and ministries across Malaysia and have a salary scale of Grade 41 and above. As at 1 February 2022, there are 1160 accountants appointed by JANM. Following the Krejcie and Morgan's (1970) table, based on 1160 accountants, the sample in this study would be about 290 accountants. In addition, since this study aims to perform exploratory factor analysis (EFA) on Hurttt's (2010) scale of professional scepticism model, a sample size of more than 200 is considered to meet the requirement of performing Exploratory Factor Analysis (EFA).

Research Instrument

This study utilised the questionnaire as the research instrument. The questionnaire was developed based on Hurtt's (2010) work. The questionnaire comprises two parts. The first part requests the respondents to provide their demographic information, such as gender, age, years of working experience, education level, and professional membership. The second part of the questionnaire requests the respondents to answer a series of questions that relate to the level of professional scepticism based on Hurtt's scale. She posited that professional scepticism scale consists of 30 items categorised into six traits: questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, self-esteem, and autonomy. However, her study focuses on auditors. Since this study focuses on accountants, few items in her scale cannot be applied to accountants and are therefore excluded, leaving the total items at 22. Few of the wordings in the items were re-structured to represent the objective of this study. Part 2 requests the respondents to answer based on a 5-point Likert-scale, ranging from 1 as strongly disagree to 5 as strongly agree. Table 1 describes the 22 items.

Table 1: Description of 22 Items

No	Items
1.	Friends tell me that I often question things I see or hear.
2.	I often reject statements until I have true evidence.
3.	I often question things I see or hear.
4.	I take time to make decision.
5.	I will only make a decision until I get satisfactory information.
6.	I always make sure that I have considered the information available before making a decision.
7.	I do not like to make decisions quickly.
8.	I enjoy discovering new information.
9.	I am enthusiastic to learn new knowledge.
10.	I think learning is interesting.
11.	I am excited to determine whether what I hear or see is true.
12.	I am interested in the actions and reasons someone takes.
13.	I am interested in finding out what causes someone to behave the way they do.
14.	I am not interested in other people's behaviour. (r)
15.	I rarely take into account why someone behaves in such a way. (r)
16.	I am used to being confronted with inconsistent explanations.
17.	I usually accept what I see, read or hear as it is. (r)
18.	I readily accept what others tell me. (r)
19.	I often accept other people's explanations without thinking further. (r)
20.	I feel good about myself.
21.	I am confident in my abilities.
22.	I am not confident with myself.

Data Collection

Prior to the data collection, the researchers applied for ethics approval from their university. In addition, the researchers have also conducted courtesy visits to a few of JANM offices throughout Malaysia, including the accountants in the ministries. The purpose of the courtesy visits was to explain to the head of departments the purpose of conducting the research and to seek their assistance in requesting their accountants to participate in the study. A cover letter explaining the purpose and objective of the study and assuring the confidentiality of the information provided was attached to the questionnaire. The questionnaire was then distributed and developed using Google form. The link to the questionnaire was circulated through the Whatsapp application and electronic mail. These mechanisms were chosen to facilitate the respondents in completing the questionnaire. The data were collected over two months. In total, 356 completed questionnaires were collected.

Results and Discussion

Demographic Profile

The main demographic attributes of respondents comprised gender, age, education level, current place of work, experience in the public sector and field of work. These have been examined using a categorical scale and are presented in Table 2. The table is divided into 5 panels, namely gender, age, education level, current place of work, experience in the public sector and field of work. As shown in Panel A, Table 2, 114 of the respondents were male (32 percent), while 242 (68 percent) were female. Most of the respondents were between 31 to 40 years old with 43.5 percent, followed by those between 41 to 50 with 36.8 percent, as shown in Panel B, Table 2. Panel C, Table 2 shows that a significant portion of the respondents possess a Degree in Accounting or Advanced Diploma in Accounting (76.7 percent), followed by respondents who possess Masters in Accounting with 21.3 percent.

Table 2: Respondents' Demographic Profile-Individual

Panel A: Gender	N	Percent
Male	114	32
Female	242	68

Panel B: Age	N	Percent
Below 30 years old	36	10.1
31 to 40 years old	155	43.5
41 to 50 years old	131	36.8
Above 50 years old	34	9.6

Panel C: Education Level	N	Percent
Degree in Accounting	266	74.7
Advanced Diploma in Accounting	7	2.0
Masters	76	21.3
PhD	5	1.4
Others (such as ACCA)	2	0.6

Panel D: Professional Qualification	N	Percent
Yes	240	67.4
No	108	30.3

Five respondents held Ph.D. (1.4 percent). The result also shows that two respondents did not possess any degree. Instead, they possess professional qualifications such as ACCA. Out of these 356 respondents, besides the two respondents who possess only professional qualification, 240 respondents also have professional qualification such as Association of Chartered Certified Accountants (ACCA), Chartered Institute Management Accountants (CIMA), Malaysian Institute of Certified Public Accountants (MICPA), Chartered Institute of Public Finance and Accountancy (CIPFA) and Chartered Public Finance Accountant (CPFA) as shown in Panel D, Table 2.

Table 3 presents the demographic profile of the respondents on work-related. Panel A, Table 3 shows that half of the respondents (55.3 percent) worked in Putrajaya, Malaysia. This is expected, considering the city was established in 1995 as the administrative capital and the judicial capital of Malaysia (Moser, 2010). Therefore, most of the accountants in the public sector would be placed in this city. About 10.4 percent of the respondents worked in the state of Selangor, 30 respondents (8.4 percent) worked in Kuala Lumpur and 22 respondents (6.2 percent) worked in Sarawak, all of which are located in big cities. The remaining 19.7 percent of the respondents were scattered throughout other parts of Malaysia, such as Johor, Sabah and Perak.

Panel B of Table 3 presents the work position held by the respondents. More than half of the respondents who participated in the questionnaire survey of this study hold the post of accountant (62.9 percent). This is followed by senior accountant (25 percent) and treasurer (2 percent). A review of the analysis shows that the accountants appointed by JANM held different work positions depending on the placement of departments and ministries throughout various states in Malaysia. Hence, the scope of work of the respondents may also be different depending on the departments and ministries where they are placed, and their placement would determine the title of their work position. However, regardless of the respondents' positions, they had similar work grades ranging from Grade 41 to JUSA. As shown in Panel B, Table 3, slightly more than half of the accountants are in the work grades between Grade 41 to 44, with 56.5 percent or 201 respondents. The result shows that 111 respondents were in between Grade 48 to 52, with 31.2 percent. Those respondents who

were senior officers such as Head Accountants, Chief Assistant Treasurer and Directors would often be in the work grades of between 54 to JUSA.

Panel C, Table 3 shows that almost half of the respondents (155 respondents) were placed in JANM division, with 43.5 percent, while 49 or 13.8 percent of the respondents were placed in JANM branches. There are 76 or 21.3 percent of the respondents were placed in the ministries, followed by 11.5 percent of the respondents were placed in the state government. There are also accountants in the public sector that are placed in universities, with 9.9 percent (35 respondents). More than half of the respondents have worked in the public sector for more than 10 years (66.1 percent), while the remaining 33.9 percent have less than 10 years of experience working in the public sector. However, most of the respondents have less than 10 years of experience in their current position, with 86.6 percent. Specifically, 62.4 percent of the respondents have less than 5 years of experience in their current position, an indication of their novice experience or still quite new in their current position. Often, a novice may lack knowledge and skills when embarking on new positions.

Table 3: Respondents' Demographic Profile-Work Related

Panel A: Work Location	N	Percent
Putrajaya	197	55.3
Selangor	37	10.4
Kuala Lumpur	30	8.4
Sarawak	22	6.2
Perak	12	3.4
Kelantan	10	2.8
Johor	8	2.2
Kedah	8	2.2
Pahang	7	2
Terengganu	5	1.4
Negeri Sembilan	4	1.1
Perlis	4	1.1
Penang	4	1.1
Sabah	4	1.1
Melaka	3	0.8
Labuan	1	0.3

Panel B: Work Position	N	Percent
Accountant	224	62.9
Senior Accountant	89	25
Treasurer	7	2
Senior Treasurer	6	1.7
Head Accountant	5	1.4

Chief Treasurer	4	1.1
Chief Assistant Treasurer	1	0.3
Senior Chief Assistant Treasurer	1	0.3
Chief Assistant State Financial Officer	1	0.3
Finance Officer	2	0.6
Senior Finance Officer	1	0.3
Director	2	0.6
Branch Director	1	0.3
Senior Assistant Treasurer	5	1.4
Senior Assistant State Financial Officer	1	0.3
Assistant Director	1	0.3
Deputy Treasurer	1	0.3
Senior Deputy Treasurer	1	0.3
Deputy Director	3	0.8

Panel C: Work Placement	N	Percent
JANM Division	155	43.5
JANM Branches	49	13.8
Ministries	76	21.3
State Government	41	11.5
Universities	35	9.9

Panel D: Working Experience in Public Sector	N	Percent
1-5 years	70	19.7
6-10 years	52	14.8
11-15 years	109	30.8
16-20 years	77	21.8
More than 20 years	48	13.5

Panel E: Working Experience in Current Position	N	Percent
1-5 years	222	62.4
6-10 years	66	24.2
11-15 years	30	8.4
16-20 years	6	2.2
More than 20 years	10	2.8

Hurtt's Scale of Professional Scepticism

This section presents the descriptive statistics of the respondents' responses on professional scepticism. The results in Table 4, shows six traits of professional scepticism as identified by Hurtt (2010). The six traits are questioning mind, suspension of judgment,

searching for knowledge, self-determining, interpersonal understanding and self-confidence. With regards to the questioning mind, most of the respondents agree that they possess the trait of questioning mind. Specifically, 97.4 percent of the respondents agree with the statement, *'I often reject statements until I have true evidence'*. The respondents also agree that they often question things they see or hear (62.4 percent). However, the remaining 37.6 percent of the respondents do not agree with such a statement, indicating they do not always question things they see or hear. Table 4 also shows that in terms of suspension of judgment, most of the respondents agree that they will only make a decision until they get sufficient information= 98.3 percent, followed by *'I always make sure that I have considered the information available before making a decision'* with 98.1 percent and *'I take time to make decision'* with 87.4 percent. Surprisingly, less than half of the respondents tend to make fast decisions with 35.1 percent. The results also show that almost all respondents were keen on searching for knowledge. The respondents agreed with all statements with scores of more than 90 percent. For example, the respondents agreed that they enjoyed discovering new information (99.2 percent) and they found learning interesting (98.6 percent).

Table 4: Descriptive Statistics of Professional Scepticism Traits

Item	Statement	Strongly disagree	Disagree	Moderately disagree	Disagree	Moderately agree	Agree	Strongly agree	Agree
Questioning Mind									
1.	Friends tell me that I often question things I see or hear.	11.0	30.3	22.5	63.8	17.7	16.6	2.0	36.3
2.	I often reject statements until I have true evidence.	0	0.6	2.0	2.6	15.7	58.7	23.0	97.4
3.	I often questions things I see or hear.	2.5	15.7	19.4	37.6	32.6	26.4	3.4	62.4
Suspension of Judgment									
4.	I take time to make decision.	0.6	4.5	7.6	12.7	27.0	52.8	7.6	87.4
5.	I will only make a decision until I get satisfactory information.	0.3	0.6	0.8	1.7	7.3	57.6	33.4	98.3
6.	I always make sure that I have considered the information available before making a decision.	0.3	0.3	1.4	2	9.0	62.1	27.0	98.1
7.	I do not like to make decisions quickly	4.2	12.4	18.5	35.1	25.6	34.0	5.3	64.9
Searching for Knowledge									
8.	I enjoy discovering new information.	0.8	0	0	0.8	5.9	62.1	31.2	99.2
9.	I am enthusiastic about learning new knowledge.	0.3	1.1	0	1.4	6.5	52.5	39.6	98.6
10.	I think learning is interesting.	0	0	1.1	1.1	4.5	60.1	34.3	98.9
11.	I am excited to determine whether what I hear or see is true.	0.3	3.1	4.5	7.9	20.2	55.6	16.3	92.1

Item	Statement	Strongly disagree	Disagree	Moderately disagree	Disagree	Moderately agree	Agree	Strongly agree	Agree
Interpersonal Understanding									
12.	I am interested in the actions and reasons someone takes.	0.8	3.9	11.8	16.5	27.5	45.5	10.4	83.4
13.	I am interested in finding out what causes someone to behave the way they do.	0.6	2.0	6.2	8.8	21.1	51.1	19.1	91.3
14.	I am not interested in other people's behaviour. (r)	6.7	19.9	25.0	51.6	32.6	13.2	2.5	48.3
15.	I rarely take into account why someone behaves in such a way. (r)	6.7	27.5	27.0	61.2	25.8	10.7	2.2	38.7
Self-Determining									
16.	I am used to being confronted with inconsistent explanations.	1.4	12.4	18.8	32.6	36.5	24.4	6.5	67.4
17.	I usually accept what I see, read or hear as it is. (r)	3.1	10.4	16.3	29.8	28.4	34.5	7.6	70.5
18.	I readily accept what others tell me. (r)	6.5	29.8	21.1	57.4	26.7	14.6	1.4	42.7
19.	I often accept other people's explanations without thinking further. (r)	22.2	52.8	14.6	89.6	7.6	2.8	0	10.4
Self-Confidence									
20.	I feel good about myself.	5.9	15.4	8.7	30	25.3	36.0	8.7	70
21.	I am confident in my abilities.	0.6	2.0	0	2.6	15.7	58.7	23.0	97.4
22.	I am not confident with myself.	25.3	34.2	17.1	76.6	7.3	3.7	1.4	12.4

With regards to self-determining, the results also show that more than half of the respondents agreed with the statement *'I am used to being confronted with inconsistent explanations'* (67.4 percent). For this trait, three of the four statements are reversed and the respondents provided a response on the statement *'I usually accept what I see, read or hear as it is'* with 70.5 percent). A similar response was given for statement *'I readily accept what others tell me'* with 42.7 percent). This is surprising as in accounting, accountants are trained to practice conservatism, but with such a response, this somewhat indicates that the respondents may be lacking in self-determining. In terms of interpersonal understanding, the results show that the respondents agree with the statement *'I am interested in finding out what causes someone to behave the way they do'* and *'I am interested in the actions and reasons someone takes'* with 91.3 percent and 83.4 percent respectively. Table 4 also shows the respondents' responses on self-confidence. They provide the highest score for the statement *'I am confident about my abilities'* with 97.4 percent, followed by the statement *'I feel good about myself'* with 70 percent. Similarly, the results show that despite the respondents being confident about their capabilities, only 12.4 percent of them are not confident.

Professional Scepticism Scale for Accountants

To determine the professional scepticism scale for accountants in the public study, this study utilised the principal component factor analysis to identify the component items in the 22 items questionnaire. A similar analysis was used in previous studies such as by Sayed Hussin and Iskandar (2013). However, before the factor analysis was performed, this study performed a few analyses. First, this study conducts the data suitability to determine the factorability of EFA analysis and to detect high multicollinearity items in the set of scaled items. The results of this analysis show that all correlation coefficients are less than 0.80, indicating that multicollinearity is not a significant issue. The majority of the correlation coefficients are above 0.30, indicating that this set of scaled items was initially sufficient for EFA analysis. Secondly, this study performed the Kaiser-Meyer-Olkin (KMO) analysis and Bartlett's Test of Sphericity analysis in order to determine the factorability of the 22 scepticism items. The results show the value is more than 0.60 and Bartlett's test is highly significant. Based on Pallant (2007), the results from the tests of the data support the factorability of the correlation matrix and subsequently enable this study to perform factor analysis.

This study then performed the factor extraction and adopted a factor loading of 0.55 above using the principal component analysis. This is to determine the significant loading on a particular factor. Thompson and Daniel (1996) suggested the simultaneous use of multiple decision rules for extracting the factors. They suggested Kaiser's Criterion with an eigenvalue of 1.0 or more maybe retained for further analysis. As a result, only 7 items are extracted from Kaiser's Criterion results and the cumulative percent of variance extracted exceeds 50 percent. The next step in this study is to determine the rotation method to be selected.

Table 5: Descriptive Statistics of Professional Scepticism Traits

Item	Statement	Component Factors					
		Questioning Mind	Suspension of Judgment	Search for Knowledge	Interpersonal Understanding	Self-Determining	Self-Confidence
8.	I enjoy discovering new information.	0.734					
9.	I am enthusiastic about learning new knowledge.	0.728					
10.	I think learning is interesting.	0.698					
13.	I am interested in finding out what causes someone to behave the way they do.	0.630					
6.	I always make sure that I have considered the information available before making a decision.	0.600					
18	I am interested in the actions and reasons someone takes.	0.582					
6.	I will only make a decision until I get satisfactory information.	0.569					
11.	I am excited to determine what I hear or see is true.	0.486					
7.	I do not like to make decisions quickly.		0.639				
1.	Friends tell me that I often question things I see or hear.		0.620				
3.	I often questions things I see or hear.		0.609				
22.	I am not confident with myself.		0.534				
4.*	I take time to make decision.		0.442				0.448
14.	I am not interested in other people's behaviour. (r)			0.602			
15.	I rarely take into account in understanding why someone behaves in such a way. (r)			0.574			
20.	I feel good about myself.				0.631		
21.	I am confident in my abilities.				0.435		
18.	I readily accept what others tell me. (r)					0.521	

Item	Statement	Component Factors					
		Questioning Mind	Suspension of Judgment	Search for Knowledge	Interpersonal Understanding	Self-Determining	Self-Confidence
17.	I usually accept what I see, read or hear as it is. (r)					0.510	
19.	I often accept other people's explanations without thinking further. (r)					0.495	
	Eigenvalues (rotation sum)	4.260	2.386	1.808	1.433	1.390	1.116
	% of various explained	19.362	10.844	8.219	6.513	6.320	5.074
	Cumulative % of various	19.362	30.206	38.425	44.938	51.259	56.332
	Cronbach's Alpha reliability	0.797	0.615	0.678	0.342	0.461	NA

This study utilised the orthogonal rotation, where the assumption of this rotation is the extracted factors are uncorrelated and the techniques used are either Varimax or Quartimax. In this study, the loading value is greater than 0.40, consistent with Field (2009).

Table 5 presents the results of the factor loading matrix for the factor analysis. The results show the three traits extracted from the data: questioning mind, suspension of judgment and searching for knowledge. Hurtt (2010) posited that the three traits are associated with how the auditors or in the case of this study, the accountants evaluate evidence. The results show these three traits loading in this factor have high reliability of Cronbach Alpha of more than 0.60, consistent with Hair, Black, Babin and Anderson (2010) suggested that the reliability coefficient should be 0.60 or higher to be considered adequate in an exploratory study. The results indicate that out of the 22 items of the modified Hurtt (2010) professional scepticism scale, 15 items are extracted and best suited to measure professional scepticism in this study, as shown in Table 5. The remaining 7 items are excluded from the scale due to low factor loading and failure to meet the pattern matrix. The 15 items are loaded into three traits: questioning mind, suspension of judgment and search for knowledge. The results show that the traits of interpersonal understanding, self-determining and self-confidence have Cronbach's Alpha reliability below 0.60. As a result, these traits are not included as a component of professional scepticism in this study. Such results suggest that the traits of interpersonal understanding, self-determining and self-confidence may not be considered attributes of professional scepticism but rather, questioning mind, suspension of judgment and search for knowledge are important attributes of professional scepticism among accountants in the public sector. The findings of this study are consistent with Hurtt's (2010) suggestion that these three traits, namely questioning mind, suspension of judgment and searching for knowledge are associated with how the auditors evaluate evidence.

Conclusion

This study validates the suitability of the scepticism scale developed by Hurtt (2010) in the auditing literature for the purpose of measuring the application of the professional scepticism of accountants in the public sector. This study obtained responses from those in the public sector appointed by JANM, ministries and states. Three hundred and fifty six responses were collected based on 22 modified items of Hurtt's (2010) professional scepticism scale. The results show that Hurtt's professional scepticism scale can be adopted in the context of accountants, although the number of items differs as well as the number of traits utilised in determining the level of professional scepticism. This study shows that out of the 22 items, only 15 suggested by Hurtt (2010), are relevant in determining the traits of professional scepticism for accountants in the public sector. In addition, this study shows out of the six traits proposed by Hurtt (2010), only three traits are applicable in measuring the level of professional scepticism of the accountants.

In the public sector, for accountants, interpersonal understanding, self-determining and self-confidence are found to be irrelevant in maintaining a professional scepticism attitude. The findings in this study show that despite the different context and nature of work (Ferrel & Gresham, 1985), the professional scepticism scale by Hurtt (2010) can be adopted.

Further analysis shows that some of the items initially in one trait in Hurtt's performance measurement have now been included in other traits. For example, Item Number 8 stated '*I enjoy discovering new information*', which was included under the trait of searching for knowledge, has now been reclassified under the trait of questioning mind in this study. One possible reason is that the behaviour of an individual, who tends to look for new information when he is uncertain and question a certain individual on a particular problem or occurrence. Of consequence, this led to the discovery of the knowledge to validate its inquisitive mind, is one possible explanation for this phenomenon (Tversky & Kahneman, 1973).

This study is not without limitations. First, this study does not consider the possible effect of situational variables such as organisational factors. Thus, future studies may be undertaken to include situational factors. Future studies can also be undertaken to examine the factors that may influence professional scepticism among accountants in the public sector. The findings in this study contribute to the accounting literature by providing a professional scepticism model for accountants, particularly in the public sector.

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Awareness of Accrual-based Budgeting in the Malaysian Public Sector

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Abstract

Purpose: The current study hypothesises that the antecedent factors (knowledge, skills and abilities, change attitude, and training) would influence budget preparers' awareness of accrual-based budgeting in the Malaysian public sector.

Design/Methodology/Approach: This study employed a questionnaire survey to investigate three variables, namely knowledge, skills and abilities, change attitude, and training in predicting the accrual-based budgeting awareness among budget preparers in the Malaysian government sector. Before data collection, the questionnaire survey was validated by conducting expert reviews before examining 42 pilot data through exploratory factor analysis (EFA). Subsequently, multiple regression analysis was performed on 174 collected responses.

Findings: The findings revealed that the three variables significantly influence budget preparers' awareness of accrual-based budgeting in the Malaysian public sector. Specifically, fundamental knowledge is essential to assist in implementing accrual-based budgeting, while skills and capabilities, including communication, analytical, interpersonal, and technical skills, are integral to participating in the planning, preparation, negotiation, and

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monitoring of accrual-based budgeting activities. Simultaneously, budget preparers' commitment to change, self-efficacy, and valence would be critical in transforming from cash-based to accrual-based budgeting. Furthermore, robust training is pivotal to increasing accrual-based budgeting awareness.

Practical Implications: The present study contributed theoretical evidence to the existing literature by addressing the knowledge gap due to limited studies on the relevant topic. This study also provided instrumental insights into accrual-based budgeting awareness determinants which supported the Malaysian government in executing the economic transformation agenda.

Originality/Value: The study is among the first to examine antecedent factors influencing accrual-based budgeting awareness to bridge the knowledge gap in the current literature.

Keywords: Awareness, knowledge, skills and abilities (KSA), change attitude, training, accrual-based budgeting.

1.0 Introduction

The Malaysian government has gradually reformed the budgetary approaches since 1981. After the British government adopted traditional budgeting in the 1950s, the Malaysian government employed a similar approach until being replaced by the programme and performance budgeting system (PPBS) in 1969 and followed by the modified budgeting system (MBS) in 1990 to concentrate more on outputs and outcomes. Due to the requirement for budgetary approach refinement, outcome-based budgeting was introduced in 2013 during the launch of the Government Transformation Programme (GTP) and the New Economic Model (NEM). Similarly, the reformation trend in the Malaysian general public sector highlighted the importance to adopt pertinent accrual accounting aspects as the government budgeting fundamental.

Monteiro and Gomes (2013) defined accrual budgeting as the methods implemented by budget preparers to use accrual accounting records and measures in the budgeting process. Accrual-based budgeting proponents suggested that the budgetary approach is essential to macroeconomic stabilisation, resource allocation, increased cost awareness, improved decision-making, and cost management (Diamond, 2006). Owing to the benefits proposed by relevant scholars, several major developed countries, including New Zealand, Australia, and Canada, have implemented the accrual budgeting system (Organisation for Economic Co-operation and Development/International Federation of Accountants Commission (OECD/IFAC), 2017) within two to five years with high adequacy of the required skills and resources. Contrastingly, developing nations, such as Malaysia with elementary systems, processes, and limited access to pivotal skills and resources, would

require a longer period to adopt accrual budgeting. As such, researchers should understand the Malaysian public sector awareness level of accrual budgeting and the relevant antecedents before extensively employing the system.

Prior studies demonstrated that knowledge, skills and abilities (KSA), change attitude, and training were generally associated with implementing management accounting reformations. Although earlier studies examined the accrual-based accounting implementation in Malaysia, relevant studies on accrual-based budgeting remained scarce (Ahmad, Ahmad and Mohamed, 2014; Azmi and Mohamed, 2014; Ismail, Siraj and Baharim, 2018). Moreover, as past researchers mainly examined country-level accrual-based budgeting (Athukorala and Reid, 2003; OECD/IFAC, 2017), more studies were required to scrutinise budget preparers' perspectives on accrual-based budgeting. Therefore, this study aimed to understand the underlying factors (the KSA, change attitude, and training) influencing budget preparers' accrual-based budgeting awareness in the Malaysian public sector. The study distributed survey questionnaires to the recruited budget preparers, who could be either accountants or non-accountants, to explore the effects of the three variables on accrual-based budgeting awareness.

The present study provided practical insights for the accrual-based budgeting regulators regarding the awareness level. Policymakers could implement more initiatives to increase accrual-based budgeting acceptance and further adoption. As the public sector represents the key national economic areas, the study findings significantly indicated the accrual-based budgeting high awareness level among Malaysian public sector budget preparers. Particularly, the KSA, change attitude, and training respectively and positively correlated with accrual-based budgeting awareness. Section 2 reviews previous studies on the awareness of accrual-based budgeting and develops hypotheses based on the KSA, change attitude, and training. Section 3 outlines the research methodology, while Section 4 and Section 5 analyse and discuss the study findings, before concluding the study in Section 6.

2.0 Awareness of Accrual-based Budgeting

Understanding the accrual-based budgeting concept could aid regulators in evaluating the importance of designing the most optimal budgeting approach. In Malaysia, the accrual accounting reformation is in process, with the Government Transformation Programme (GTP) and the New Economic Model (NEM) as the initiatives to drive the implementation in generating significant changes in public finance management. Despite numerous obstacles and challenges (such as unexpected delays) during accrual accounting implementation in the public sector (Yusof and Jaafar, 2018), more relevant research would be the subsequent step to create further progress when existing literature demonstrated that the reformation trend is positive. Accordingly, the Malaysian government should adopt and apply pertinent accrual accounting aspects in financial reports and budgets, before eventually implementing the entire system.

The accrual-based budgeting concept in the Malaysian public sector remains relatively innovative, as the idea is under practical development. Therefore, identifying the awareness level of accrual-based budgeting, especially among budget preparers, is crucial for the reformation progress. Nevertheless, relevant studies in discovering the applicability and practicability are limited, despite the multiple benefits and opportunities provided by accrual-based budgeting (Athukorala and Reid, 2003; Khan, 2013). The migration toward accrual-based budgeting might be hampered when Malaysian public sector employees, especially accountants and other accounting employees, were not highly conscious of the approach (Accountants Today, 2011). The circumstance might jeopardise the migration process with negative consequences on different parties, including the government, citizens, lenders, and stakeholders.

To successfully adopt the accrual accounting system, the Malaysian public sector is required to provide sufficient opportunities for public servants to equip with adequate knowledge in grasping the relevant concepts and procedures. Government accounting employees' readiness before the 2015 implementation plan was examined by Azmi and Mohamed (2014), aside from significant concerns and challenges toward accrual accounting application in the Malaysian Ministry of Education (MOE). The findings revealed that the MOE accounting employees exhibited high preparedness levels to implement accrual accounting by shifting from cash accounting. As such, Malaysian public employees' mindsets would be critical to achieving accrual accounting objectives, wherein high readiness degrees in a paradigm shift were induced when the implementation would provide higher government accounting transparency and efficiency.

Several major concerns about progressing toward accrual accounting exist. Azmi and Mohamed (2014) revealed that numerous accountants were not qualified and without the necessary skills to implement accrual accounting in the government sector. Most accountants were also unfamiliar with presenting accrual financial statements, which were ubiquitous in the private sector. Moreover, the study disclosed insufficient continuous internal training and a lack of a comprehensive roadmap from the top management and the Accountant General's Department during the implementation process. Consequently, the transition to accrual accounting was highly challenging and consumed several years to materialise. Similarly, Atan and Yahya (2015) argued that ensuring reformations to achieve the stipulated targets necessitated appropriate employees' readiness, behaviour, and mind set. The study determined the attributes pertinent to measure the readiness for transformation among Malaysian public sector accountants, wherein positive behaviour with high readiness to change was crucial to applying accrual-based accounting. Nonetheless, the results demonstrated that the accountants refused to be responsible for any unsuccessful accounting reformation.

Ismail et al. (2018) discovered further evidence to support past findings (Atan and Yahya, 2015; Azmi and Mohamed, 2014) that Malaysian public sector employees, particularly accountants, exhibited high readiness for accrual accounting implementation. The findings

suggested that public sector accountants were highly aware of and supported the Malaysian governmental financial transformation agenda. Meanwhile, Ahmad et al. (2014) identified critical factors affecting accrual accounting awareness, in which the regression results revealed that only organisational top management and external parties (external auditors and consultants) with exterior environments and training programmes) significantly correlated with accounting users' awareness of accrual accounting. Although past studies (Ahmad et al., 2014; Atan and Yahya, 2015; Azmi and Mohamed, 2014; Ismail et al., 2018) primarily investigated accrual accounting, the relevant insights are pertinent to accrual budgeting adoption. The current study employed the KSA competency study based on International Education Standards (IES) to examine the KSA construct, the theory of organisational readiness for change to discuss the change attitude construct, and Kirkpatrick's (1998) model to appraise the training construct.

2.1 Knowledge, Skills and Abilities (KSA)

Palmer, Ziegenfuss and Pinsker (2004) discovered the KSA integral to accountants were general business knowledge, accounting knowledge, communication skills, interpersonal skills, problem-solving skills, information technology skills, personal attitudes and capabilities, and computer skills. The KSA are the competence gauges prescribed by the IES under the International Federation of Accountants Commission (IFAC). Knowledge and skills are considered the ability to perform professional responsibilities (Barac, 2009; Brink and Stoel, 2016; Palmer et al., 2004; Wessels, 2005), with knowledge as the primary competitiveness source in public administration. Knowledge could also catalyse organisational change by directly contributing to government programmes' effectiveness and implementation. Furthermore, organisational knowledge is the specific knowledge derived from the collective experience or individual experiences of organisational members to achieve explicit or implicit goals. To ensure financially solid and successful accounting systems and accrual-based budgeting, public sector organisations should provide employees, especially budget preparers, with relevant knowledge and experience, before applying the knowledge or executing practices for desired results. On the other hand, skill is defined by the Merriam-Webster dictionary as the ability to use one's knowledge effectively and readily in execution of performance, while ability is defined as competence in doing something (Merriam-Webster Online Dictionary, 2022).

According to Hiatt (2006), an individual's ability is one of the building blocks in effective management model change and adoption. Nonetheless, the main obstacle to adopting accrual accounting is the scarcity of skilled financial and accrual change experts (Arshad, Omar and Awang, 2013). Hansma and Elving (2008) argued that the success of organisational change and adaptation with high employee acceptance would be contingent on substantial motivation and support from the organisational top management. Hence, top management should provide budget preparers with strong support through relevant training programmes, which would accelerate organisational transformation positively when employees could receive guidelines on executing the new system while enhancing individual

KSA. Resultantly, the public sector administrators could effectively alter employees' behaviour positively to reduce reluctance to adapt to the alternative system while expediting the organisational adoption of accrual-based budgeting. Nevertheless, the current KSA literature review unveiled limited studies examining the relationship between the KSA and accrual-based budgeting awareness among Malaysian public sector budget preparers. Correspondingly, the KSA factors were assessed in this study to understand budget preparers' awareness of accrual-based budgeting. By applying the IES, the following hypothesis was developed:

H1: Knowledge, skills and abilities (KSA) significantly influence accrual-based budgeting awareness.

2.2 Change Attitude

Change is one of the strategies organisations should undertake to adopt the accrual-based budgeting approach by focusing on sustainability, although the strategy is highly potentially ineffective without significant employee commitment (Olafsen, Nilsen, Smedsrud and Kamaric, 2021). Change is frequently unsuccessful when organisations immediately impose transformations before employees are mentally and emotionally prepared, thus negatively impacting employee commitment (Jones, Jimmieson and Griffiths, 2005) and resulting in abrupt change termination (Nilsen, Dugstad, Eide, Gullsllett and Eide, 2016). Moreover, increasing environmental dynamism, including local market environmental changes, alternative products and services demands, and product and service volume volatility, would require effective leadership to swiftly respond to the turbulence (Hoozée and Bruggeman, 2010; Surty and Scheepers, 2020). Therefore, examining the factors facilitating employees' adopting organisational changes is imperative, especially budget preparers' change attitude which is essential to accepting accrual-based budgeting implementation with a successful change (Armenakis, Harris and Mossholder, 1993; Kavaliauskaite and Jucevicius, 2010; Peach, Jimmieson and White, 2005; Vakola, 2014; Atan and Yahya, 2015).

Based on social cognitive and self-efficacy theory, Weiner (2009) proposed the organisational readiness for change theory comprising two components, namely change commitment and change efficacy. Change commitment refers to organisational members' obligation to accept the change, while change efficacy relates to the members' capability to implement the change. As such, organisational readiness for change is defined as organisational employees' shared resolution to implement a change (change commitment) and shared belief in the collective capability to adopt the change (change efficacy). Higher change efficacy would allow the organisation to accelerate the change implementation process (Ismail et al., 2018). Concurrently, when accountants are optimistic about the change, the employees would be highly prepared to implement accrual-based accounting and budgeting (Mosuin, Mat, Ghani, Alzeban and Gunardi, 2019). Public accountants with private sector experience or who have employed accrual

accounting and budgeting would generally exhibit a positive attitude toward the accrual system, compared to public sector accountants with expertise in cash accounting or budgeting (Blidisel and Tudor, 2007; Mahadi, Noordin, Mail and Sariman, 2014; Mosuin et al., 2019). Although certain staff who are accustomed to cash accounting and budgeting might resist the accrual-based accounting system (Mahadi et al., 2014), the government could re-educate the accountants.

Organisational management could further reduce the resistance factors with pertinent efforts to expedite change (Angonese and Lavarda, 2013). Resistance to change is both rational and complex (Busco, Quattrone and Riccaboni, 2007; Scapens and Roberts, 1993), as the change process is perceived to be difficult in adopting the alternative system during the transition process, owing to high familiarity with the current system (Goncalves and Sapateiro, 2008). The situation generally occurs when employees are not aware of and well-trained in the alternative system with the required knowledge, exposure, and clear implementation guidelines. Governments should comprehend the underlying factors to mitigate resistance to embracing change. The current literature review also discovered an existing gap in examining change attitude to predict accrual-based budgeting awareness. Through the organizational readiness to change theory, this study examined change attitude in influencing the awareness of accrual-based budgeting. Organisational readiness for change was hypothesised to motivate employees in seeking accrual-based budgeting knowledge to be more aware of the subject matter. Thus, a relevant hypothesis was developed as follows:

H2: Change attitude significantly influences accrual-based budgeting awareness.

2.3 Training

Training is implemented to facilitate the learning process involving the immediate or short-term application of acquired knowledge, abilities, and attitudes associated with learners' cognitive and behavioural characteristics (Kraiger, Ford, and Salas, 1993). As a cognitive ability, awareness plays a significant role in shaping learners' sentiments and perceptions of a particular idea, concept, or scenario, which requires organisational training programmes to be isolated from profit maximisation and performance objectives (Silberman, Biech and Auerbach, 2015). Nonetheless, an insignificant association between training and organisational profit might render training courses without adequate relevancy for participants to fail in achieving the stipulated objectives. Hence, assessing the need for training types and participants before designing relevant courses could increase the linkage and applicability.

Training is a fundamental action in developing human resources with knowledge skills required for the organisation via effective instruction and practice. Training is an important mechanism to improve employees in effectively and efficiently performing job duties. Correspondingly, appropriate educational and training platforms would assist employees in resolving reformation challenges, including human behaviours, technologies and systems, top management support, and other external issues, during the early stages of accrual-based

budgeting implementation (Ahmad et al., 2014; Alsalamah and Callinan, 2021; Cahapay, 2021). In addition, organisations should transfer knowledge and skills from other nations, especially from the early adopters of accrual-based budgeting (Mahadi et al., 2014). The transfer and collaboration with relevant training would enhance the timely delivery of public services, improve organisational culture, adopt effective accrual budgeting practices, and optimise human resources (Khan, 2018).

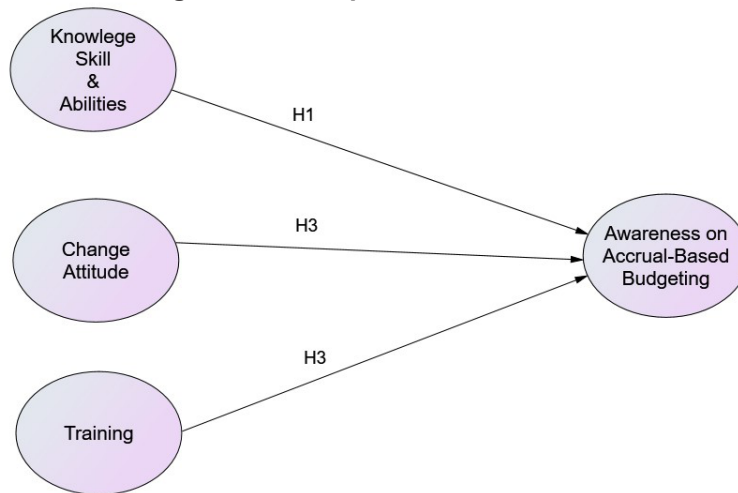
The Malaysian government must provide specific training programmes to enhance budget preparers' KSA, increase accrual-budgeting awareness, and realise the implementation goal in the public sector (Diamond, 2006; Monteiro and Gomes, 2013; OECD, 2002). Despite extensive literature regarding training in the general accounting field, the literature on training related to accrual-based budgeting awareness remains deficient. Nonetheless, conventional training programmes could serve as a reference for training in accrual-based budgeting. For example, Lownie and McQuarrie (2014) explored an alternative model of classroom delivery and instruction by referring to the format of soccer team training sessions, wherein the instructor was facilitating, flexible, and responsive by allowing students to learn independently. The students would perceive more comfortable in groups with more interactive lectures before subsequently improving performance and gaining experience. As such, technology implementation, such as applying artificial intelligence in accounting, could be facilitated by incorporating innovative elements into the conventional training courses to reduce existing accountants' resistance levels in embracing the accrual-based budgeting system (Shaffer, Gaumer and Bradley, 2020) while accommodating the volatile market demands. The current study employed Kirkpatrick's (1998) four-level evaluation model, which was widely applied in past studies to assess organisational training and development programmes. Numerous organisations also adapted Kirkpatrick's model to different training environments due to high accessibility and adaptability (Alsalamah and Callinan, 2021). The model provides an efficient and systematic tool for organisations to evaluate apprenticeship, employee training output, and the organisational system transformation (Alsalamah and Callinan, 2021; Cahapay, 2021). Kirkpatrick's model encompasses the following four levels. Level 1 is Reaction, which measures participants' satisfaction and interest in the training programmes, while Level 2 is Learning, which appraises the extent of skills and knowledge gained. Level 3 is Behavioral, which assesses trainees' ability to apply learned knowledge and skills in the workplace, whereas Level 4 is Results, which determines the training effect on the organisation. Nevertheless, this study only measured training at Level 1 (Reaction) and Level 2 (Learning) among Malaysian public sector budget preparers to gauge accrual-based budgeting awareness. The findings would fill the gap posed by limited studies on the relevant topic by investigating the third hypothesis:

H3: Training significantly influences accrual-based budgeting awareness.

2.4 Conceptual Framework

A conceptual framework was established based on the literature gap and developed hypotheses. Figure 1 depicts the KSA, change attitude, and training as the independent variables (H1, H2, and H3) with accrual-based budgeting awareness as the dependent variable.

Figure 1: Conceptual Framework



3.0 Methodology

The present study employed a quantitative research methodology, specifically the deductive approach, to measure the collected data on study variables (KSA, change attitude, training, and accrual-based budgeting awareness) from respondents who were the public sector budget preparers (accountants and non-accountants). Due to the lockdown situation during the coronavirus disease (COVID-19) pandemic, the survey questionnaires were distributed online. Subsequently, multiple regression analysis was conducted to elucidate the relationships between the variables and assess the accuracy degree of description or prediction from the regression equation. The multiple linear regression model was mathematically computed as follows:

$$Y = \beta_0 + \beta_1\text{KSA} + \beta_2\text{Change} + \beta_3\text{Training} + \varepsilon$$

Notes. Y = Accrual-based budgeting awareness; β_0 = The model parameter; $\beta_0 - \beta_3$ = Estimates (regression coefficient); KSA = Knowledge, Skills and Abilities; Change = Change Attitude; Training = Training; ε = The error term associated with the model.

A 10-point interval scale was adopted to measure the awareness level of accrual-based budgeting influenced by the KSA, change attitude, and training to fulfil data assumptions of the parametric analysis. Two experts were invited to review the survey questionnaire prior to the pilot study. Before data collection, exploratory factor analysis (EFA) was performed on the 42 responses collected from the pilot study to verify the dimensions of the questionnaire items and assess the internal reliability of the study constructs. The study disseminated 300 questionnaires to the targeted Malaysian government sector budget preparers via convenience sampling. The questionnaire instructed the respondents to rate each item on a 10-point scale respectively. Invitation letters were also distributed together with the questionnaires to explicate the study objectives, data collection methods, potential contributions, and potential applications, while reassuring respondents' data privacy and confidentiality. The final number of returned and completed questionnaires was 174, which represented a response rate of 58%. Subsequently, all 174 responses were screened before subjecting to correlation and regression analyses via the statistical package for the social sciences i. e. IBM SPSS AMOS 21.

3.1 Pilot Study

A pilot study was conducted to develop, modify, and examine the study technique feasibility, establish the measurement reliability, and calculate the final sample size. The data collected in the pilot study employed a similar approach to the actual data collection stage. Forty two (42) responses were collected from selected budget preparers, wherein the findings demonstrated well-designed research directions in terms of inquiry, layout, and time with a Cronbach's alpha value exceeding 0.6 in the four study variables.

3.2 Data Reduction Procedure via Exploratory Factor Analysis (EFA)

Principal component factor analysis (PCA) with the varimax rotation for all items under each variable was performed. Table 1 portrays that Bartlett's sphericity test was significant (chi-square, $p < .001$). The data were cleaned whereby responses with missing value were removed from the analysis. Meanwhile, the Kaiser-Meyer-Oikin (KMO) standard stipulated that the sampling adequacy measure should be above 0.60. With the result indicating that the KMO value approaching 1.0 and the p-value of Bartlett's sphericity test below .001, the pilot study data could be further proceeded with the reduction procedure by performing the EFA using SPSS software. Nonetheless, the EFA findings revealed that several items scored below 0.60. The items should be removed from further review.

Table 1: The KMO Sampling Adequacy Measure and Bartlett's Sphericity Test

Construct	The KMO Sampling Adequacy Measure	Bartlett's Sphericity Test		Significance
		Approximate Chi-square Value	df	
Accrual Budgeting Awareness	.871	493.678	45	.000
Knowledge, Skills and Abilities	.687	2,414.752	528	.000
Change Attitude (Commitment, Efficacy, and Valence)	.834	1,889.639	325	.000
Training (Reaction and Learning)	.852	1,055.866	105	.000

3.3 Reliability Analysis

Internal reliability for each construct component was appraised by discovering Cronbach's alpha value, which should be greater than 0.7 to achieve acceptable reliability. Table 2 illustrates that Cronbach's alpha values for all components range between 0.925 and 0.978, hence satisfying the required threshold with all values exceeding 0.7. The survey questionnaire was subsequently modified based on the EFA results before proceeding with actual data collection.

Table 2: Reliability Statistics of Construct Components and Variables

Construct	Component	Cronbach's Alpha Value	Cronbach's Alpha Value for Standardised Items	Item Number
Awareness		.957	.959	9
	Knowledge	.972	.972	9
KSA	Skills	.978	.980	16
	Abilities	.925	.928	5
Change	Commitment	.961	.965	9
	Efficacy	.977	.988	4
	Valence	.978	.980	9
Training	Reaction	.971	.976	10
	Learning	.943	.944	5

4.0 Findings and Discussion

4.1 Descriptive Analysis

Descriptive statistics allow data tabulation on accrual-based budgeting awareness to be meaningful and understandable. Before performing the multiple regression analysis, accrual-based budgeting awareness descriptive statistics were generated by scrutinising the means, standard deviations, minimum levels, and maximum levels of each variable. Table 3 depicts the descriptive statistics relating to accrual-based budgeting awareness, with Panel A reporting all respondents' demographic profiles while Panel B provides descriptive statistics for the study variables. The demographic variables include gender, age group, educational level, job position, and working sector in public organisations. Specifically, 119 respondents (68.4%) were females, with 111 budget preparers (63.8%) being 46 years old and above while 141 respondents (81.0%) were Bachelor's degree holders. 75.3% of the respondents belonged to the management and professional group, with a majority (81.6%) working for the federal government, followed by 7.5% in the state government, 4.0% in the local government, and 3.4% respectively in the statutory bodies and other sectors. Meanwhile, the mean of the variable accrual-based budgeting awareness was discovered as 6.93, while the minimum and maximum levels were 1.22 and 10.00 respectively. The results manifested high awareness of accrual-based budgeting, which was consistent with Ahmad et al. (2014) discovering high awareness of the migration process to accrual accounting. Similarly, Ismail et al. (2018) revealed that public sector accountants were highly committed to accrual accounting with high capacity and readiness to implement the accrual accounting system.

Table 3: Descriptive Statistics

Panel A: Respondents' Demographic Profiles					
	Demographic Profile	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Gender	Female	119	68.4	68.4	68.4
	Male	55	31.6	31.6	100.0
Age	26 – 35 years old	9	5.2	5.2	5.2
	36 – 45 years old	54	31.0	31.0	36.2
	46 years and above	111	63.8	63.8	100.0
Educational Level	Diploma	11	6.3	6.3	87.4
	Bachelor Degree	141	81.0	81.0	81.0
	Master	18	10.3	10.3	97.7
	Professional Qualification	4	2.3	2.3	100.0
Job Position	Management and Professional	131	75.3	75.3	75.3
	Supporting Group	8	4.6	4.6	100.0
	Others	35	20.1	20.1	95.4

Demographic Profile		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Working Sector	Federal Government	142	81.6	81.6	81.6
	Local Government	7	4.0	4.0	85.6
	State Government	13	7.5	7.5	93.1
	Statutory Bodies	6	3.4	3.4	96.6
	Others	6	3.4	3.4	100.0

Panel B: Descriptive Statistics of Continuous Variables

Variable	Minimum	Maximum	Mean	Standard Deviation	Median
Awareness	1.22	10.00	6.93	1.719	7.167
KSA	1.03	10.00	5.83	1.778	5.967
Change	1.30	10.00	6.53	1.754	6.544
Training	2.00	10.00	6.78	1.773	6.833

4.2 Hypothesis Testing

4.2.1 Pearson Correlation Analysis

Pearson (*r*) correlation coefficient analysis was conducted to examine the relationship strengths and directions between the KSA, change attitude, training, and accrual-based budgeting awareness. Table 4 illustrates significant positive correlations ($p < 0.01$) between the KSA, change attitude, training, and accrual-based budgeting awareness, with respective mean scores ranging from 5.834 to 6.929. The findings suggested that respondents perceived a high personal awareness level of accrual-based budgeting, with a strong belief in the accrual-based budgeting benefits positively influenced by the KSA, change attitude, and training to support the transition process. The current findings were consistent with Palmer et al. (2004) who discovered that the KSA components, namely communication skills, interpersonal skills, general business knowledge, accounting skills, problem-solving skills, information technology skills, personal attitudes and capabilities, and computer skills, significantly elevated awareness. Furthermore, the current finding of the significant positive correlation between change attitude and accrual-based budgeting awareness corresponded with Mosuin et al. (2019), who demonstrated high readiness to implement the accrual accounting system when accountants exhibited a positive attitude toward change attitude due to the perceived benefits. Concurrently, training positively influenced the awareness of accrual-based budgeting, as supported by previous studies (Atan and Yahya, 2015; Mohd Ali, Abdullah, Ab Majid, Basri and Noor Minhad, 2020; Mosuin et al., 2019).

Table 4: Study Variable Correlations

		Awareness	KSA	Change	Training
Awareness	Pearson Correlation	1.000	.700 **	.705 **	.674 **
	Sig. (2-tailed)		.000	.000	.000
	N	174	174	174	174
KSA	Pearson Correlation	.700 **	1.000	.725 **	.658 **
	Sig. (2-tailed)	.000		.000	.000
	N	174	174	174	174
Change Attitude	Pearson Correlation	.705 **	.725**	1.000	.830 **
	Sig. (2-tailed)	.000	.000		.000
	N	174	174	174	174
Training	Pearson Correlation	.674 **	.658**	.830 **	1.000
	Sig. (2-tailed)	.000	.000	.000	
	N	174	174	174	174

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

4.3 Regression Analysis

Issues, such as normality, multicollinearity, homoscedasticity, and linearity of residuals, were addressed before the regression analysis. While the KSA data was normally distributed without measurement and specification errors, the other three variables (awareness, change attitude, and training) were normalised to fulfil the data assumptions before performing the multiple regression analysis. Data normality could be determined by examining skewness and kurtosis, via the K-S Lilliefour test or Shapiro-Wilk test. A significant Shapiro-Wilk (W) statistic ($Sig < .05$) would indicate that the data were not normally distributed (Allen, Bennett and Heritage, 2014). Accordingly, the Shapiro-Wilk test manifested insignificant results for all four study variables, namely the KSA, change attitude, training, and awareness at 0.547, 0.274, 0.942, and 0.879 respectively, therefore suggesting that all variables were normally distributed.

According to Gujarati (2003), multicollinearity might indicate a critical problem when two regressors, either pairwise or zero-order, possessed correlation coefficients above 0.80. The variance inflation factors (VIFs), which reflect the multicollinearity problem, should not surpass the value of 10 to ensure that multicollinearity would not impact the least squares estimates (Gujarati, 2003; Neter, Wasserman, and Kutner, 1985). A multicollinearity problem could also occur if the tolerance of the independent variable was below 0.1 (Norusis, 2008). In this study, the VIFs of all three variables (KSA, change attitude, and training), were 2.134, 3.823, and 3.232 respectively, hence propounding no multicollinearity problem. Subsequently, the data residuals were analysed by plotting the studentised residuals against the predicted values to assume homoscedasticity (constant variance). When the residuals randomly disperse without a distinct shape or pattern around a horizontal line through the value of zero, the variance

of predictors at each level would be constant, which suggests the equal variance hypothesis is valid (Norusis, 2008). Meanwhile, the inequality in the residual variance of each predictor might reflect a heteroscedasticity problem (Field, 2009).

The linearity assumption is achieved when the plots are positioned around a straight line. When plotting a dependent variable against an independent variable, a curve that exists in the plot might postulate the linearity assumption not being achieved (Norusis, 2008). Additionally, the mean value of each predictor must be linear (Field, 2009; Norusis, 2008). As such, the scatterplot of standardised residuals against standard predicted values was employed by the current study to assess the assumptions of normality, linearity, and homoscedasticity of residuals. The absence of distinctive patterns in the spread of points posited the fulfilment of data normality, linearity, and homoscedasticity.

Table 5 portrays that the three independent variables (KSA, change attitude, and training) significantly influence the dependent variables (accrual-based budgeting awareness). The findings demonstrated that the KSA t-value was 5.131 ($p < 0.001$), which indicated a significant positive relationship between the KSA and budget preparers' accrual-based budgeting awareness. Furthermore, the change attitude t-value was 2.609 ($p = 0.004$), which demonstrated a significant positive relationship between change attitude and budget preparers' awareness of accrual-based budgeting. Meanwhile, the training t-value was 2.451 ($p = 0.013$), thus discovering a significant positive relationship between training and budget preparers' awareness of accrual-based budgeting. Resultantly, all hypotheses H1, H2, and H3 were accepted.

Table 6: Regression Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t-value	Significance
	B	Standard Error	Beta		
(Constant)	-.086	.049	N/A	- 1.771	.078
KSA	.060	.011	.371	5.255	.000
Training	.234	.094	.236	2.506	.013
Change Attitude	.250	.086	.252	2.902	.004
Standard error		0.181			
F-value		86.414			
Significance F-value		0.000 ***			
Adjusted R-squared		0.597			

Notes. *** Significant at the 0.01 level (two-tailed); Dependent variable = Awareness of accrual-based budgeting; N/A = Not Applicable.

5.0 Discussion

The present study identified and proposed the antecedent factors influencing budget preparers' accrual-based budgeting awareness, while appraising the respective relationships of the three factors with accrual-based budgeting awareness in the Malaysian public sector. The findings demonstrated that the KSA, change attitude, and training possessed significant positive relationships with accrual-based budgeting awareness, which bridged the existing literature gap due to limited past studies on the relevant topic. Contemporarily, one primary challenge in implementing accrual accounting is the lack of skilled financial experts, especially staff with the knowledge to shift to the accrual system (Arshad et al., 2013). Similarly, knowledge is significant and required for budget preparers to assist in implementing accrual-based budgeting with a sufficient understanding of the purpose, advantages, and drawbacks. Moreover, the required skills and capabilities encompass communication, analytical, interpersonal, and technical skills (Barac, 2009; Palmer et al., 2004) to participate in the planning, preparation, negotiation, and monitoring of accrual-based budgeting activities.

Change attitude in the current study refers to budget preparers' shifting from cash-based to accrual-based budgeting, in which the finding revealed that commitment, efficacy, and valence were significant to the transition process. Ismail et al. (2018) also discovered that change attitude significantly influenced organisational and employee readiness to implement the accrual accounting system. In addition, implementing change is required to be comprehensive and executed at all levels during accrual-based budgeting adoption, including a paradigm shift in management to ensure a systematic approach in expediting organisational transformation (Mahadi et al., 2014). Simultaneously, employee participation and leadership would also influence the change outcome (Hoozée and Bruggeman, 2010). When budget preparers are optimistic about accepting the change, high preparedness will be exhibited to adopt accrual-based accounting and budgeting (Mosuin et al., 2019).

Training is defined in this study as educational activities within a public sector organisation to enhance budget preparers' knowledge and skills while providing pertinent accrual-based budgeting information and instruction. The current study measured training based on Kirkpatrick's (1998) model at two levels, namely Reaction (Level 1) and Learning (Level 2). The results propounded that budget preparers were required to comprehensively understand the training objectives, content, theory, and practice regarding accrual-based budgeting before participating in the programmes. Moreover, Ahmad et al. (2014) proposed that the education and training platforms would assist budget preparers in resolving reformation challenges, particularly during the early stages of elevating accrual-based budgeting awareness and readiness before implementation. As such, the most vital prerequisite for successfully implementing accrual-based budgeting would be the development of robust training programmes (Diamond, 2006; Mahadi et al., 2014; Monteiro and Gomes, 2013) to improve the relevant skills of existing accountants who were trained in cash accounting (OECD, 2002).

Budget preparers' accrual-based budgeting awareness refers to the existing knowledge about or understanding of accrual-based budgeting based on received information or experience. The findings revealed that budget preparers were aware of the accrual-based budgeting concept in terms of preparing accrual accounting records and measures in the budgeting process, which were concurrent with prior studies (Ahmad et al., 2014; Atan and Yahya, 2015; Mohd Ali et al., 2020; Mosuin et al., 2019). In addition, the respondents exhibited positive behaviour toward accrual-based budgeting due to the perceived adoption benefits, including increased transparency on public service expenditures, improved accountability, pertinent budget allocation, and effective resource management. Summarily, accrual-based budgeting allows the government to optimally regulate national expenses in the future.

6.0 Conclusion

The current study contributed to the existing knowledge corpus by discovering budget preparers' awareness of accrual-based budgeting implementation in the public sector. Empirical evidence on antecedent factors affecting budget preparers' awareness was provided, which filled the literature gap posed by a scarcity of relevant studies. The present study also generated valuable insights into the factors positively influencing accrual-based budgeting awareness. Particularly, the positive association between the KSA and accrual-based budgeting awareness suggested that the KSA was integral to adopting the accrual system. Hence, the finding advocated the government to employ staff with relevant technical knowledge and skills to inform and train existing employees in different ministries and politicians on the alternative budgetary system. Meanwhile, existing accountants and financial managers would be required to undertake upskilling, as certain budget preparers might not possess the necessary expertise in accrual accounting concepts and principles. Nonetheless, existing budget preparers remain essential to successfully implementing accrual-based budgeting, due to their institutional knowledge regarding the budgeting process and policy issues (Khan, 2013).

The lack of change agents would impede the adoption of accrual-based budgeting, as change agents are important in overcoming barriers to effectively implementing a reformation in organisational culture (Blondy, Cooper, Irwin, Kauffmann, and Khan, 2013). The change must also be actively promoted, especially among policymakers and senior officers (OECD, 2002). Accordingly, the National Budget Office (NBO) could be the critical agent of change (Diamond, 2006), in which change management skills would be fundamental to an alternative budgetary system to continue reformation efforts by adhering to the implementation plan while adapting to environmental contingencies and alterations (Diamond, 2006). Moreover, training would also be a significant component during the accrual-based budgeting implementation. Similar to the MBS, cultural change necessitates re-education and retraining for staff to ensure successful implementation (Mahadi et al., 2014; Monteiro and Gomes, 2013).

The study revealed consequential benefits to the Malaysian government and other emerging economies considering moving toward an accrual-based budgeting system. Theoretically, the present study contributed significantly to Weiner's (2009) theory of organisational readiness for change by providing empirical evidence to the theory and Kirkpatrick's model (1998) regarding training, while highlighting the IES importance to acquire adequate KSA in enhancing awareness of accrual-based budgeting adoption in the Malaysian public sector. Nevertheless, the study limitation is the unequal sample representation of government sectors or organisations when most respondents were employed by the federal government, as the data were collected online due to the COVID-19 pandemic. Future research could consider recruiting equal numbers of respondents from the local government, state government, and statutory bodies to achieve more robust findings.

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Integrated Reporting Disclosures: Evidence from Local Councils in Malaysia

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Abstract

Purpose: The objective is to determine the degree of Integrated Reporting (IR) disclosure in annual reports of selected city councils based on seven IR Framework Guiding Principles, namely (1) Strategic focus and future orientation, (2) Connectivity of information, (3) Stakeholder relationships, (4) Materiality, (5) Conciseness, (6) Reliability and completeness and (7) Consistency and comparability.

Design/Methodology/Approach: This study performs content analysis on recent online annual reports of ten city councils against the IR Guiding Principles.

Findings: Overall, the results indicate that IR is still at infancy and receives low acceptance by city councils. The results demonstrate that strategic aims and objectives were reported without indicating the time frame of the objectives. It was found that the annual report focuses more on the achievements of the department. All the city councils that were under study disclosed engagement activities with the community; used a combination of narrative statements, figures, pictures, and graphs; and disclosed positive information. The executive summary and Mayor's message were provided at the beginning

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of the annual report to give an overview of the organization's performance. Comparative data was used to benchmark performance across several years, but comparative data against other local authorities was limited.

Research Limitation: The limitations include the small sample size, thus the findings from this study should not be generalized. However, it justified the objective to examine the individual disclosure of IR guiding principles by large public sector organizations. Second, the content analysis was performed on the most recent annual reports of selected city councils which may not reflect the overall practice on consistency and comparability. Third, this study focused on seven guiding principles of IR, which is only part of the comprehensive IR framework.

Practical Implication: The findings from this study could be used as an input for regulators and other public sector entities to facilitate IR implementation in public sector organizations.

Originality/Value: The paper contributes to the existing literature on the current stage of IR implementation in public sector. The findings obtained show that IR, which was initially observed as a private sector initiative, has implications in public sector organizations.

Keywords: Integrated reporting, annual report, guiding principles, local council.

Introduction

Integrated reporting (IR), enabling firms to allocate resources more effectively and make strategic decisions geared toward value generation, is the future of corporate reporting. The 2017 Malaysian Code of Corporate Governance (or MCCG) recommended that large corporations apply IR practises in their annual reports (Securities Commission Malaysia, 2017). Several studies on IR disclosure were conducted in the context of Malaysia (Ghani et al., 2018; Sigh et al., 2012; Jamal and Ghani, 2016; Abdullah et al., 2017; Wen and Heong, 2017; Amirrudin et al., 2021; Masduki and Zaid, 2019). However, all these studies utilized data reported prior to the implementation of the revised MCCG 2017. Before 2017, the findings show that IR was rarely used in the Malaysian market. Abdullah et al. (2017) mention that IR in Malaysia is still in its infancy. In a more recent study, Qaderi et al. (2021) discovered that IR laws as well as IR adoption in Malaysia are in their infancy, and optional to use among Malaysian publicly traded enterprises. They also mention that Malaysian corporations have shifted toward the preparation of IR, and that both the level and quality of IR disclosure have greatly increased. Additionally, they reported statistically significant disparities in the mean level and quality of IR disclosure across small and large enterprises.

The Securities Commission Malaysia (SCM), the Malaysian Institute of Accountants (MIA), Bursa Malaysia, as well as the Association of Chartered Certified Accountants (ACCA) Malaysia, have all taken the effort to increase public knowledge and awareness about IR. The MIA formed the Malaysian Integrated Reporting Steering Committee to increase the comprehension of IR among Malaysian businesses (Ghani et al., 2018). Pricewaterhouse Coopers (PwC) (2015), MIA and ACCA (2016) carried out surveys to indicate the low adoption of IR by companies. However, recent surveys show that more than 12 percent of Malaysian listed companies adopted IR (SCM 2020), and that the overall quality of the information published in IR has greatly improved (PwC 2018).

Numerous studies have shown that there are concerns involving regional government budget accountability and transparency (Fjeldstad et al., 2004). They were founded based on the fact that individuals do not acquire data on regional finance, the lack of communication on certain decisions, the absence of cost analysis, as well as the poor quality of information. Khalid et al. (2016) discovered that fraud control is the least prevalent in the Malaysian public sector. In conjunction with government efforts to improve the public's impression of accountability, the public sector's system of good governance is vital. Crespo et al. (2017) discovered that accounting information systems can increase the transparency of regional administration, while de Jesus and Eirado (2012) discovered that accounting information impacts the accountability of the public sector.

In Malaysia, the government system is structured into three tiers. Local councils play a vital role in this structure, as they are responsible for the everyday operations of the population. As the third tier of the government, the local councils also serve to further state and federal government programmes and policies. Thus, the annual report could be used to disclose information on the overall profile of the organization, as well as its plans and strategies, financial position, various activities done and other important matters to the stakeholders. IR allows for the local councils to show how its strategy, performance, governance, as well as prospects impact organization value, both in the short term and the long term. The question is to what extent do the local councils in Malaysia embrace IR?

IR has gained an increasing interest among regulators, practitioners, and academics in Malaysia. In recent years, IR has gained prominence in the private sector and attracted increasing attention in the public sector. There have been continuous efforts to improve governmental accounting through the preparation of financial as well as non-financial data. For example, sustainability reports and popular financial reports have been introduced to improve accountability. Studies on IR focus on the private sector. While companies have shown progression in adopting IR, little is known about IR adoption in the public sector. This work aims to apply a content analysis methodology to investigate the annual reports of ten city councils against the IR Guiding Principles (IIRC 2021), in the context of Malaysia. The objective is to determine the degree of IR disclosure in annual reports of selected city councils based on seven IR Framework Guiding Principles.

Literature Review

The existing types of corporate reporting have evolved in isolation, resulting in two main reporting streams, namely, standard financial reporting as well as sustainability reporting. Financial reporting is based on broadly recognised accounting rules in the past. It was criticised for lacking future-oriented information and inadequately accounting for intangible assets. Global competitiveness, technology improvements, strict regulations, and the global financial crisis have shed more attention on the deficiencies of traditional financial reporting. Relatively new, sustainability reporting acknowledges that environmental and social concerns are crucial and must be adequately conveyed to stakeholders. Social and environmental disclosures are increasingly isolated from financial disclosures, making it impossible to measure their impact (Cho et al., 2009; de Villiers and Hsiao, 2018).

Amidst these advancements, there has been a growing discussion over the necessity of a single, succinct report to convey business performance in regard to not just financial, but also environmental and social issues. Integrated reporting (IR) has gained significance in this area, since it has the ability to overcome these difficulties. IR gives a clear and comprehensive illustration of how a company produces value by connecting its numerous assets, opportunities, business plans, business strategies, and risks to future economic value in the short-, medium-, and long-term (IIRC, 2013).

The International Integrated Reporting Council (IIRC) has had a crucial role in IR advice. Through its pilot case studies, the IIRC has encouraged organisations to participate in integrated reporting (IIRC, 2012), since they may gain expertise and guidance on IR and share their experiences with other organisations. Prior research reveals that IR may be advantageous to the public sector (Guthrie et al., 2017) and enhance stewardship and accountability (IIRC, 2013). Initially, the IIRC Framework was believed to be largely focused on the commercial sector, but its application might be broader: "it can also be utilised, and changed as needed, by public sector and non-profit organisations" (IIRC, 2013). Prior studies recognise the possibility of expanding the scope of IR activities beyond the private sector (Adams and Simnett, 2011; Bartocci and Picciaia, 2013; Lodhia, 2015).

According to Lodhia (2014), the switch to IR allows organisations to differentiate themselves from their competitors and other organisations. Due to a shortage of resources, an expansion in the variety of operations, the diversity of stakeholders, and a broad definition of the value creation process, public sector institutions have been faced with several challenges. This evolution necessitates greater accountability and openness on the part of public sector entities in the value generation process (Greiling 2013). IR represents a good opportunity to communicate with all stakeholders by presenting an integrated view of the organization's activities and strategies, resource utilisation, opportunities, risks, and financial and non-financial information. Therefore, adopting IR contributes to addressing multiple conflicting public accountability requirements (Nada 2021; IIRC and CIPFA 2016). In an effort to produce a more comprehensive reporting format, IR also offers the opportunity to

recognise the connections between the financial, social, and environmental aspects of company performance (Brown and Dillard, 2014).

Researchers have also voiced issues about the IIRC Framework's emphasis on the private sector (Oprisor et al., 2016; Manes-Rossi and Orelli, 2019). The literature has examined potential advantages that IR could offer the public sector, such moving beyond conventional reporting practises (Bartocci and Picciaia, 2013; Cohen and Karatzimas, 2015; Veltri and Silvestri, 2015; Katsikas et al., 2017; Manes-Rossi and Orelli, 2019; Montecalvo et al., 2018; Farneti et al., 2019); a densely connected perspective of sustainability; or reporting in the direction of the ends of the organization (Guthrie et al., 2017; Veltri and Silvestri, 2015; Lodhia, 2015; Oprisor et al., 2016).

Accountants were inhibited from participating in IR by the voluntary nature of the practise and the absence of suitable rules (Arora, Lodhia and Stone 2022; Gerwanski 2020; de Villiers et al. 2017). In similar situations, inadequate norms and the absence of legislation prevented accountants from providing environmental performance data (Laine et al., 2017; Senn and Giordano-Spring, 2020). The lack of a clear understanding on how to approach IR has led to diverse conceptions among organisations (Gibassier et al. 2018). Arora et al. (2022) discovered that accountants' competence in corporate reporting, knowledge of the assurance process, in-depth understanding of the institution, as well as their analytical and interpersonal abilities were beneficial when generating an integrated report.

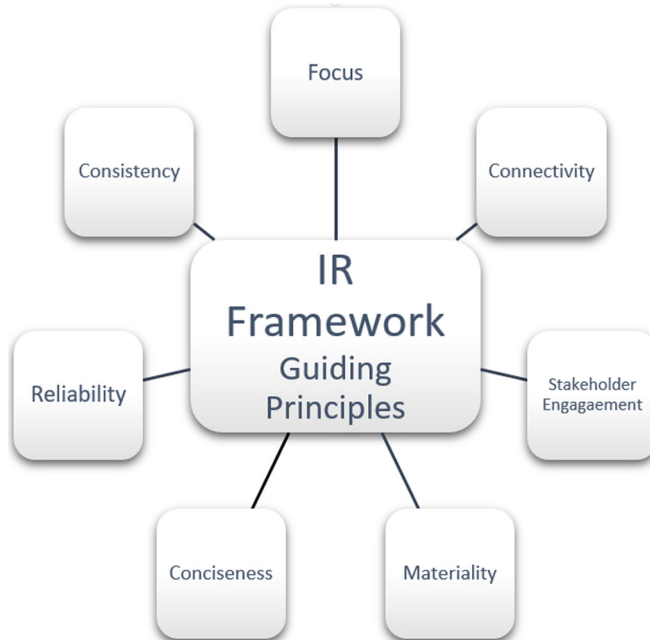
Non-financial reporting is predominated by qualitative narratives, with little disclosure of financial facts (Amoako et al., 2017). Arora et al. (2022) also mentioned that accountants' engagement in IR was restricted because they did not value IR and found it difficult to transform numerical data to narratives. Numerous accountants lack the education, expertise, and experience required when dealing with narrative social and environmental data (Parker, 2001; Owen, 2013; Williams, 2015). Organizations that apply IR express their value creation narrative by combining financial, social, and environmental performance data into a unified report. Financial and non-financial information reporting in a single report lends itself to the involvement of accountants in the reporting process.

Adhariani and de Villiers (2019) investigate the viewpoints of corporate report preparers and other stakeholders in Indonesia towards integrated reporting (IR). The results reveal a low degree of understanding regarding international relations, but a high level of curiosity. Although corporate report writers recognise the benefits of IR, many are reluctant to adopt it. Adhariani and de Villiers (2019) indicate that modifications to university curricula, training sessions, seminars, and conferences may be necessary to convey information about international relations. Other problems in the public sector include resistance to change in the acceptance of any new reporting (Guthrie et al., 2017); the relevance of reporting against all six capitals within public sector; and a simpler reporting method that combines IR and popular reporting (Cohen and Karatzimas, 2015).

Research Framework

This study utilized the seven Guiding Principles, namely, strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness, consistency and comparability, underpinning the preparation and presentation of IR. Figure 1 depicts the Guiding Principles underlying the presentation and production of an IR.

Figure 1: IR Framework Guiding Principles



Adapted from IIRC (2021)

The seven Guiding Principles on the content of reporting and the manner in which information is presented (Figure 1). Table 1 lists the IR Guiding Principles and a description of each.

Table 1: Guiding Principles of IR

IR Guiding Principle	Description
Strategic focus as well as future orientation.	Should offer insight on the strategy of the organization and the manner in which it produces value in the short, medium, as well as long term, and its impact on capital.
Information connectivity.	Should show the interrelations among the elements that impact the organization's ability to offer value through time.
Stakeholder relationships.	Should show the quality of the organization's interactions with its main stakeholders, and the degree the organisation comprehends the legitimate interests and requirements.

IR Guiding Principle	Description
Materiality.	An in-depth report should comprise information on issues that possess a material influence on the organization's potential to offer value.
Conciseness.	An in-depth report should be succinct.
Reliability as well as completeness.	An integrated report should contain both negative and positive material matters without great inaccuracy.
Consistency as well as comparability.	The information in a report should be presented: (a) consistently; and (b) by facilitating a comparison with other organisations based on the organization's ability to offer value.

Source: IIRC (2021)

Methodology

This study performs content analysis on municipal councils' annual reports for the 2019-2020 timeframe. The core principle of content analysis is that the contents of documents are analysed to identify interpretable patterns. The dissection of documents into smaller components can be recognised as units of analysis. This smaller unit inside the document may be a word, phrase, or paragraph. Each unit is labelled with the corresponding IR Guiding Principle. To enhance reliability, three researchers performed content analysis independently before the results is discussed and agreed finalized.

Consistent with Eccles et al. (2015), Manes-Rossi (2018), and the IR framework, this study focused on the annual report disclosures of seven IR guiding principles. The first involves emphasis on the business model, which includes the quantity and kind of capitals regarded for the process of value generation. The second involves the interconnectedness of value generation components. The third involves stakeholder participation which pertains to the fundamental principles of public organisations, such as democratic participation and openness (Thomson and Bebbington 2005; Manes-Rossi 2018). The fourth involves the significance to comprehend what has been deemed as significant by stakeholders. The fifth involves brevity, because acquiring credibility and demonstrating value for money is essential and necessitates the capacity to deliver easily available and clear information (Curtin and Meijer, 2006). The sixth involves dependability, including both good and negative subject matter. The seventh involves consistency over time and organisation comparability. IR guiding principles disclosure was measured by a total of 27 criteria. The following table offers an overview of each IR guiding concept utilised in this investigation.

Table 2: IR Guiding Principle

No	IR Guiding Principle	Measurement Items
1	Strategic focus and future orientation.	<ol style="list-style-type: none"> 1. Describe how the entities intend to utilise "the capitals" and the effect of commercial operations on the capitals. 2. Describe the short-term, medium-term, and long-term time spans related with strategic objectives. 3. Explain the strategic significance of material opportunities and risks in corporate strategy discussions.
2	Connectivity of information.	<ol style="list-style-type: none"> 4. Connectivity between content pieces. 5. A review of the organization's operations from the past to the present. 6. Interdependencies as well as trade-offs among the capitals, as well as how changes in their availability, quality, and cost influence the organization's capacity to produce value. 7. The significance of financial and other data. 8. Qualitative as well as quantitative information. 9. Quantitative metrics congruent with the indicators utilised internally by management and those responsible for governance. 10. Flow of the organization's communications must be consistent, and the information it delivers must not be viewed in isolation.
3	Stakeholder relationships.	<ol style="list-style-type: none"> 11. Have the stakeholders participated in defining the significant issues? 12. Has the main definition of the external environment considered the requirements and expectations of the stakeholders? 13. Have the stakeholders been identified in the business model definition? 14. Does the organisation participate in stakeholder engagement? 15. If the answer to the preceding question is affirmative, are the inputs utilised in the strategy definition?
4	Materiality.	<ol style="list-style-type: none"> 16. Describe in detail material risks and opportunities, focusing on their known or projected implications on financial, social, environmental, and governance performance. 17. Determine the time periods associated with significant risks and possibilities 18. Prioritize material risks as well as opportunities in accordance with their degree and significance. 19. Prioritize the feedback of stakeholders
5	Conciseness.	<ol style="list-style-type: none"> 20. Information provides adequate context to comprehend the organization's strategy, performance, governance, and future prospects, without burdening users with irrelevant data. 21. A balance exists between brevity and the other guiding criteria, especially exhaustiveness and comparability.
6	Reliability and completeness.	<ol style="list-style-type: none"> 22. No prejudice is apparent in the report's selection or presentation of material. 23. When information contains estimations, this is disclosed explicitly and constraints of the estimating process are elucidated. 24. A comprehensive integrated report covers both negative and positive information.
7	Consistency and comparability.	<ol style="list-style-type: none"> 25. The information is given on a consistent way over time. 26. When a substantial change is applied, the organisation discusses the cause for the change and describes (and quantifies, if possible and significant) the change's impact. 27. The information is presented so that comparisons with other organisations are possible (i.e benchmark data, ratios, common quantitative indicators).

Adapted from IIRC (2021)

A total of 151 authorities exists, comprising municipal, city, and district councils. Table 3 lists the geographical distribution of these local authorities.

Table 3: Distribution of Authorities

State	City Councils	Municipal Councils	District Councils	Total
Johor	3	7	6	16
Kedah	1	46	6	11
Kelantan	0	1	11	12
Melaka	1	3	0	4
Negeri Sembilan	1	2	4	7
Pahang	1	2	8	11
Pulau Pinang	2	0	0	2
Perak	1	4	10	15
Perlis	0	1	0	1
Selangor	3	8	1	12
Terengganu	1	2	4	7
Sabah	1	2	23	26
Sarawak	3	4	19	26
Wilayah Persekutuan	1	0	0	1
Total	19	40	92	151

The Housing and Local Government Ministry provides the following description of local authorities in Malaysia:

City Council is a local body that has been raised from the level of the municipal council after meeting particular conditions, such as a population of over 500,000 and a revenue of over RM100 million.

Municipal Council is a local body in a town center with a population of over 150,000 and a budget of over RM20 million.

District Council is a rural local government. The requirements for the District Council status comprise a population of less than 150,000 and a revenue of less than RM20 million.

Prior studies have shown that the IR adoption rate is higher among large size organizations. Thus, based on the description above, this study focuses on city councils. Table 3 shows the availability of online annual reports for all 19 city councils. The performance of the latest annual reports of ten city councils publish online in 2019 and 2020 are highlighted in Table 4.

Table 4: Availability of Online Annual Reports of City Councils

City Council	Link to online annual report	Period covered
Majlis Bandaraya Johor Bahru	https://www.mbjb.gov.my/ms/laporan-tahunan-mbjb FY 2020- 291 pages, no comprehensive financial statement included	2016-2020

Majlis Bandaraya Iskandar Puteri Skudai		N/A
Majlis Bandaraya Pasir Gudang	https://www.mbpbg.gov.my/ms/mppg/sumber/penerbitan FY 2020 – 124 pages including pages 57-78 on financial information	2019-2020
Majlis Bandaraya Alor Setar		N/A
Majlis Bandaraya Melaka Bersejarah	https://www.mmbmb.gov.my/ms/mmbmb/sumber/muat-turun-borang/jabatan-pengurusan-korporat-dan-komuniti FY 2020 – 184 pages, including pages 25-30 on financial information	2015-2020
Majlis Bandaraya Seremban	https://www.mbs.gov.my/ms/mbs/pusat-media/penerbitan FY 2020- 516 pages, no comprehensive financial statement included	2020
Majlis Bandaraya Kuantan		N/A
Majlis Bandaraya Pulau Pinang	http://www.mbpp.gov.my/ms/mbpp/sumber/penerbitan FY 2019 – 229 pages, no comprehensive financial statement	2003-2019
Majlis Bandaraya Seberang Perai	https://www.mbsp.gov.my/laporan_tahunan/lampiran FY 2020 - 315 pages, no comprehensive financial statement included	2020
Majlis Bandaraya Ipoh	https://www.mbi.gov.my/ms/mbi/sumber/penerbitan e-book FY 2020 – 232 pages, including pages 72-76 on financial information	2018-2020
Majlis Bandaraya Shah Alam	http://www.mbpp.gov.my/ms/mbpp/sumber/penerbitan FY 2020 - 86 pages, no comprehensive financial statement included	2013-2020
Majlis Bandaraya Petaling Jaya	https://www.mbpj.gov.my/ms/mbpj/pusat-media/laporan-tahunan FY 2020 – 410 pages including financial information 48 pages	2006-2020
Majlis Bandaraya Subang Jaya	https://portal.mbsj.gov.my/ms/laporan-tahunan-mps-j-0	2014-2016
Majlis Bandaraya Kuala Terengganu		N/A
Dewan Bandaraya Kota Kinabalu		N/A
Dewan Bandaraya Kuching Utara		N/A
Majlis Bandaraya Kuching Selatan		N/A
Majlis Bandaraya Miri		N/A
Dewan Bandaraya Kuala Lumpur	https://www.dbkl.gov.my/laporan-tahunan-dbkl/ FY 2020 – 382 pages including pages 333-382 on financial information	2014-2019

Results and Discussion

Based on the seven guiding principles, the annual reports were examined for signs of IR. Each IR guiding concept revealed in yearly reports was examined. The examination of 10 chosen city councils' annual reports demonstrates that the IR framework offers a reference point for developing an IR that was acceptable for communicating financial and non-financial information to stakeholders. Table 5 presents a comparative summary of IR disclosure in relation to the IR Guiding Principles for the participating municipal councils (the respective city council protects the confidentiality of the information).

Table 5: IR Disclosures in relation to IR Framework Guiding Principles

IR Guiding Principle	Description	1	2	3	4	5	6	7	8	9	10
Strategic focus and future orientation	Explain the manner in which the entities intend to utilise 'the capitals' and how commercial activities will affect the capitals.	-	-	-	-	-	-	-	-	-	-
	Describe the short-, medium-, and long-term time spans related with strategic objectives.	-	-	-	-	-	-	-	-	-	-
	Explain the strategic significance of material opportunities and risks within the context of the company strategy conversation.	-	-	-	-	-	-	-	-	-	-
Connectivity of information	Connectivity between content components.	-	-	-	√	-	-	-	-	-	-
	A review of the organization's operations from the past to the present.	-	-	-	-	-	-	-	-	-	-
	Interdependencies as well as trade-offs between the capitals, as well as the impact of changes in their availability, quality, and cost on the organization's capacity to produce value.	-	-	-	-	-	-	-	-	-	-
	Consequences of financial and other data.	-	-	-	-	-	-	-	-	-	-
	Qualitative as well as quantitative information	√	√	√	√	√	√	√	√	√	√
	The same quantitative metrics utilised internally by the management and those responsible for oversight. All organisation communications must be consistent, and the information provided by the organisation is not viewed in isolation.	-	-	-	-	-	-	-	-	-	-
Stakeholder relationships	Have stakeholders participated in the identification of material issues?	-	-	-	-	√	-	-	-	-	-
	Has the definition of the external environment considered the requirements and expectations of the stakeholders?	-	-	-	-	-	-	-	-	-	-
	Have the stakeholders been recognised in the business model definition?	-	-	-	-	-	-	-	-	-	-
	Does the organisation participate in engagement with stakeholders? If the response to the preceding question is yes, are the inputs utilised in the strategy definition?	√	√	√	√	√	√	√	√	√	√

Materiality	Describe in fully the material risks and opportunities, focusing on their known or projected implications on financial, environmental, social, and governance performance.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Identify the short-, medium-, and long-term time frames associated with substantial risk and opportunity.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Prioritize material hazards and opportunities according to their degree and significance.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Prioritize the viewpoints of consulted stakeholders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Information provides adequate context to comprehend the organization's strategy, performance, governance, and future prospects, without burdening users with irrelevant data.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conciseness	There is a balance between brevity and the other guiding criteria, especially exhaustiveness and comparability.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Report is objective in its selection and presentation of data.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reliability and completeness	When information contains estimations, this is made apparent, and the nature and constraints of the estimating process are described.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	A comprehensive integrated report covers both negative and positive information.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	The information is provided in a consistent manner across time.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Consistency and comparability	When a substantial change has been made, the organisation discusses the change's rationale and describes (and quantifies, if possible and relevant) the change's impact.	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	The information is supplied so that comparisons with other organisations are possible.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- (1) City Council A
 (2) City Council B
 (3) City Council C
 (4) City Council D
 (5) City Council E
 (6) City Council F
 (7) City Council G
 (8) City Council H
 (9) City Council I
 (10) City Council J

As shown in Table 5, none of city councils meet the first principle, which is strategic focus and future orientation. However, two criteria for the second principle were disclosed. The first criteria were disclosed only by City Council E, which is 10 percent from the sample. This finding is similar to a prior study by Brown and Dillard (2014), who suggest that IR provides a chance to acknowledge the links between the financial, environmental, as well as social elements of corporate performance. Next, the second criteria disclosed by all city councils. This finding is in compliance with Nada (2021), IIRC and CIPFA (2016), suggesting that IR represents a good opportunity to communicate to all stakeholders through providing an integrated view of the organization's activities and strategies, resource utilization, opportunities, risks, and financial as well as non-financial information. In this regard, IR aims to empower stakeholders to make better judgments and assessments of a company by combining its social and financial values rather than relying solely on its book value. The other five criteria were not disclosed by any of the city councils. This indicates that only two out of seven criteria were disclosed (28.57 percent).

Similarly, only two criteria have been provided for the third principle. This was also provided by only by City Council E (10 percent of the sample) and by all city councils for "Does the organisation engage in stakeholder engagement activities?" This result is consistent with Farneti et al. (2019), who mention that IR impacts the disclosure of social information and enhances stakeholder interactions in a public sector environment. Thus, IR will contribute to the enhancement of company transparency and the creation of organisational value. It is a new concept to encourage companies and stakeholders to have meaningful conversations based on the long-term value generation plan. None of the other criteria were disclosed by city governments. Only two out of five criteria (40 percent) were provided.

Next, for the principles of materiality, conciseness and reliability, and comparability, none of the city councils met the disclosure requirements. For the last principle, consistency and comparability, all disclosure requirements were disclosed. For the first criteria, all city councils met the disclosure requirements of "The information is shown based on consistency across time". This criterion is in line with conventional reporting. For "When a drastic change was performed, the organization discusses the primary reason for this particular change, describing its impact" only three city councils (City Council B, I and J) met the disclosure requirements, which represent 30 percent from the sample. The last criteria, which is "The information is displayed in a manner that allows for a feasible comparison with related organizations (i.e benchmark data, ratios, common quantitative indicators)" was only disclosed by City Council E and I, representing 20 percent from the sample. This finding is consistent with the results reported by Lodhia (2014), showing that the transition to IR enabled the organization to differentiate itself from its competitors and other organisations. The scope of comparison would be broader as IR discloses both financial as well as non-financial information compared to traditional reporting, which is restricted to financial information only.

Summary of IR disclosures among selected city councils is shown in Table 6. All ten city councils disclosed in their annual report the following three items: (1) Qualitative and quantitative information; (2) The organisation activates stakeholder engagement activities; and (3) The information is presented on a basis that is consistent over time.

Table 6: Summary of IR Disclosures among Selected City Councils

IR Guiding Principle	Item	No of Reports
Strategic focus and future orientation	-	-
Connectivity of information	<ul style="list-style-type: none"> Connectivity between content elements. Qualitative and quantitative information. 	1/10 10/10
Stakeholder relationships	<ul style="list-style-type: none"> Stakeholders have been involved in the definition of the material issues. The organisation activates stakeholder engagement activities. 	1/10 10/10
Materiality	-	-
Conciseness	-	-
Reliability and completeness	-	-
Consistency and comparability	<ul style="list-style-type: none"> The information is presented on a basis that is consistent over time. When a significant change has been made, the organization explains the reason for the change, describing (and quantifying if practicable and material) its effect. The information is presented in a way that enables comparison with other organizations (i.e benchmark data, ratios, common quantitative indicators). 	10/10 3/10 2/10

Strategic Focus and Future Orientation

The value of a public sector organisation relies on its capacity to accomplish its short, medium, and long-term service delivery and governance objectives. This study indicates that City Councils H, A, E, G, and C outline their strategic objectives within the first few pages of their annual reports without giving a time frame.

On the other hand, City Council B devotes a section of its annual report on the future planning of the municipality. The City Council B Strategic Plan (2021-2025) outlines six core aims towards achieving Industrial City and Port status by year 2025. However, little is known about how the organization plans to use its capital, time frame, risks and opportunities of this plan for its business strategy.

Connectivity of Information

The IIRC (2021) framework does not require distinct parts to be prepared in the report. Nonetheless, organisations should ensure that all pertinent components are covered, and that information content is connected. It is predicted that the significance of information would vary amongst different enterprises. An examination of the yearly reports of City Councils A, I, E, F, B, H, and G reveals that these entities disclose their operations by department. The

presentation of material lacks cohesion in yearly reports that highlight departmental accomplishments.

Stakeholder Relationships

Public sector organisations are of interest to a vast array of stakeholders with diverse expectations. Thus, companies are constantly under pressure to improve their reporting. There is a rising societal and legal imperative for public sector organisations to offer performance reporting that can be utilized to evaluate the execution of their goals. It is possible to implement IR in the public sector such that reporting incorporates stakeholder inclusion and satisfies the crucial requirement for economic, environmental, social, and governance sustainability. Through the disclosure of the involvement of stakeholders, companies demonstrate that they are able to balance the requirements of diverse stakeholder groups (Hoffman 2012).

All city councils examined in this study disclosed engagement activities with the community. Various social activities (such as fun runs, campaign poster competitions, water safety programs, cooking in the park, and back lane upgrading) and environmental activities (such as recycling, no plastic campaigns, cleaning, green school competitions, Earth Day, and community gardens) are also considered. Photos of such programs are prominent in the annual reports. However, evidence on engagement with other groups of stakeholders is lacking.

Materiality

IR allows organizations the opportunity to align their reports with their risks, opportunities, and management accountability by taking into consideration current development and limitations. City Council H (2020) has the initiative to provide a five-page executive summary that highlights the performance of the organization throughout the year. The executive summary is endorsed by the City Mayor. Meanwhile, the executive summary is absent from other annual reports. City Councils A, E, D, I, B, G, and C offer a message from the City Mayor. On the other hand, the annual report of City Council F does not provide any opening message on the overall performance of the organization.

Conciseness

The annual report of selected city councils is lengthy and comprises between 86 to 516 pages. This is due to the drive to provide detailed financial information in the annual report, since it is the only councils' published report. A combination of narrative statements and figures, pictures, and graphs are shown, with the aim to disclose the annual performance of the organizations. City Council H for example disclosed revenues from the sale of compost for three years using a narrative description, table format and graph presentation.

Reliability and Completeness

City Council I designated a specific section of 48 pages to disclose the financial information of the organization. Similarly, City Council B published a Cash Flow Statement, Income Statement, as well as Change in Net Assets Statement with a total of 42 notes to accounts. Other annual reports (including City Councils E, A, H, E, D, and G) report financial information on revenues and expenses under the Finance Department. City Council D, for example, disclosed the Income Statement with brief general notes.

City Council C allocates one section for financial statements, which consists of auditor report and performance for comparative data between budget and actual, is shown for receipts as well as expenses.

City Council J has a section on the financial report with comparative data for years 2018 and 2019, disclosing the Income Statement, Financial Position Statement, Cash Flow Statement, and Change in Net Assets Statement, complete with a total of 27 notes to accounts. Comparative data between budget and actual is shown for receipts as well as expenses.

All annual reports analysed in this study indicate that positive information was disclosed. Awards and recognition were reported at the departmental and organizational level. However, there is a lack of evidence and negative incidence was reported. For example, City Council H documents the awards and recognition received by the organization in a specific section of its annual report.

Consistency and Comparability

City Council I provided comparative data on Commissioner of Buildings (COB) local authorities throughout Malaysia. The data could be used to benchmark its performance against other local authorities of the same category. The annual report of City Council E provides comparative monthly data on environmental activities with the community between the period of 2014-2019, as shown in Table 7.

Table 7: Comparative Monthly Data on Environmental Activities for Year 2014-2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	15	17	63	17	17	34	1	16	26	16	25	33	280
2015	17	11	18	30	37	33	1	16	18	21	36	14	252
2016	20	16	21	19	38	7	13	20	15	20	14	12	215
2017	15	19	20	29	43	6	12	23	17	29	21	19	253
2018	10	8	12	29	12	40	26	16	13	28	25	18	237
2019	27	13	32	51	17	14	19	20	20	24	27	24	288

Conclusion

In summary, the results obtained demonstrate that limited IR Guiding Principles are disclosed in the annual reports of selected city councils in Malaysia. At the centre of the mentioned reports is the consensus of the mentioned city councils to discuss values, actions, and strategies carried out by their organizations. This study also shows that the city councils share the outcomes and stakeholder engagement of their respective organizations. The findings are important to justify the need to promote IR among public sector entities. Furthermore, the city councils chosen in this study have the potential to pioneer IR disclosures in their annual reports.

This study satisfies the underlying objectives of the research and fills the research gap in the field of IR disclosures in public sector organizations by providing empirical evidence from the perspective of local authorities in emerging economies such as that of Malaysia. However, this study has several limitations. First, the findings from this study should not be generalized, as they did not cover the entire population. Analysis on annual reports of ten large local authorities justified the objective to examine the individual disclosure of IR guiding principles by public sector organizations. Second, the content analysis was performed on the most recent annual reports of selected city councils. Thus, it may not reflect the overall practice on consistency and comparability. Third, this study focused on seven guiding principles of IR, which are part of the IIRC (2021) framework that provides comprehensive guidelines for IR implementation. Future studies should examine more samples to provide a better overview of the IR disclosures, and to compare disclosures across the size of the local authorities. It is suggested that future studies expand the content analysis to cover multiple years of the annual report for a better understanding on the consistency and comparability element. Interviews with the organization representatives can also shed some insight on IR practices. In addition, the International IR Framework (Jan 2021), which supersedes the International IR Framework (Dec 2013), should be further explored against the IR disclosure practices.

The findings obtained show that IR, which was initially observed as a private sector initiative, has implications in public sector organizations. The findings could be used as input to the regulators and other public sector entities to facilitate the adoption of IR. It is expected that the guiding principles of IR will continue to receive acceptance and been adopted to demonstrate accountability for service delivery by local authorities and other public sector organizations in Malaysia.

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Landscape Discussion of Oil Rents and Primary Government Expenditure Budget

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Abstract

Purpose: This study compares Malaysia's oil rent dynamics and primary government approved budget (PGEB) with other major oil-exporting countries. This study reviews the annual time series data from 2005 to 2020 of oil rents and PGEB.

Methodology: The outcomes derived from meta-analysis approach are presented in graphical comparisons of oil rents and PGEB of Malaysia with other oil exporters. A horizontal comparison was also carried out. Kuwait, Saudi Arabia, Nigeria, Kazakhstan, Brazil, and the Russian Federation were selected as relevant oil exporters.

Findings: Referring to the historical graphical presentation, the oil market fluctuations were linearly aligned to the budget figure among oil exporters. The study results portray historical connections between oil rents and PGEB in the context of Malaysia and other oil exporters, which may be beneficial to policymakers and practitioners in their decision-making process.

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Practical Implications: The findings that display the historical connections of Malaysian oil rents and PGEB with other oil exporters serve as a guideline to policymakers and practitioners.

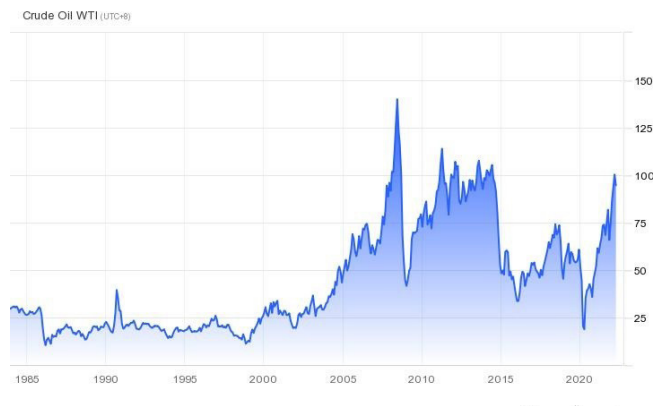
Originality/Value: In addition to the Malaysian setting, the scenario of other oil exporters amplifies the dynamics of oil rents on PGEB formulation.

Keywords: Oil rents, primary government, approved budget, crude oil, Malaysian economy.

1. Introduction

The energy market has garnered attention since these past few decades. Oil is still one of the prime energy sources worldwide, while oil rents are the primary contributor to the national income among oil-exporting countries. National economies fluctuate along with the price of crude oil at the global scale due to their substantial dependence on oil revenues. Alteration in global oil prices has a strong impact on both oil-exporting and oil-importing countries, mainly because each economic component has direct or indirect affiliation with the oil market (Lin & Tsai, 2019). The cost of crude oil is influenced by many factors, such as global oil market uncertainty, geopolitical instability, US currency index, oil price volatility, absolute reductions in crude oil demand, and low oil output (Meng & Liu, 2019). The Russian invasion of Ukraine in February 2022 triggered the oil market and spiked the oil price (see Graph 1). Notably, the oil price began to stabilise in 2021 with substantial oscillations from a strong downturn in 2020 due to the Coronavirus Disease 2019 (Covid-19) pandemic. The Russia-Ukraine conflict has provoked the oil market sharply since late February 2022 due to the supply chain disruption since Russia has a significant role as one of the largest oil exporters in the world market.

Graph 1: World Crude Oil Price from 1985 to May 2022



Source: Trending Economics Database

Graph 1 illustrates the historical trend of the crude oil price since 1985. It was stable until 2004 when the price began rising, and from mid-2007, the oil price hit its peak due to the global financial crisis of 2007-09. Graph 1 demonstrates that the oil prices declined due to the Covid-19 pandemic and reached the bottom in 2020 prior to the Russia-Ukraine conflict. Evidently, significant events affected the crude oil price (Yusof & Kalirajan, 2020; Yeoh, 2019). As such, oil price fluctuations were associated with domestic oil rents and PGEB of oil exporters.

Oil market volatility is particularly significant among large oil exporter economies, such as Saudi Arabia, Russia, Kuwait, Iran, Iraq, and Malaysia, along with other crude oil exporter countries, whose economies are partly or heavily reliant on crude oil prices (Nasir et al., 2019; Charfeddine & Barkat, 2020). Oil rents contribute a large share of the aggregate national revenue that determines fiscal budgets. Prior studies acknowledge that oil rents have a significant role in paving the path for the budget-making process among oil exporter countries (García-Albán, González-Astudillo, & Vera-Avellán, 2021; Ackah et al., 2020).

As an oil exporter, the global oil price fluctuation has substantially affected the Malaysian aggregate revenue collection and its national budget (Yusof & Kalirajan, 2020). Maji et al., (2017) asserted that a plunge in global oil rents reduced government aggregate revenue collection, which strongly affected the PGEB. On the contrary, a hike in the oil price might cause a surge in oil rents that could help governments formulate massive budgetary spending to stimulate the economy (Yusof & Kalirajan, 2020). Graph 1 provides evidence of crude oil price jumps in the global market due to geopolitical unrest (2021-2022), which facilitated Malaysia to generate more revenue from the oil sector as an essential oil exporter.

Despite the sharp decline in crude oil exports since the last two decades, Malaysia remains a net crude oil exporter (Shangle & Solaymani, 2020). The proportion of crude oil exports to gross domestic product (GDP) in Malaysia has exceeded by 5%. Crude oil imports and exports contributed 3.3% and 5.5%, respectively, of real GDP in 2010 to Malaysia. Oil rents contribute a significant fraction of the aggregate revenue of the country. On the contrary, if global oil prices rise, the value of Malaysia's crude oil exports increases and so does the national budget expenditure (Maji et al., 2017). As an oil exporter country, oil price shock significantly affects the Malaysian aggregate revenue collection and its budgetary policy formulation.

Studies have revealed that both government expenditure and budgetary constraints of oil exporter countries highly rely on oil rents, such as Saudi Arabia, Iran, Iraq, Arab Gulf countries, Brunei Darussalam, and Nigeria (Mikhaylov, 2019; Kreishan, Abou Elseoud, & Selim, 2018). Malaysia is not an exception from the list of those countries, considering the impact of oil rents on its domestic policy measures. Hence, any international market fluctuations in oil price could substantially affect the oil rent collection in Malaysia.

The emerging issues revolving around the oil segment imply that the countries must be investigated by the significant alliance to formulate effective PGEB. Oil rent instability exerts a direct impact on Malaysia's budget formulation as an oil-exporting country. Although many studies have examined the effects of oil rent on economic growth, oil market volatility on change, oil rents on sustainability, as well as the impact of oil price on financial development; only a handful of studies have assessed the importance of oil rents on PGEB formulation in the context of Malaysia (Salmana, Majeedb, & Ameen, 2019; Yeoh, 2019). Almost no study has compared Malaysia with other relevant oil exporters regarding oil rent issues. Therefore, this present study compared the oil rent dynamics and PGEB of Malaysia with other major oil-exporting countries by reviewing the annual times series data from 2005 to 2020.

1.1 Significance of the Study

Several identified study gaps motivate the execution of this present study. First, past studies mostly focused on oil rents and budget policy of different countries. These include oil and gas rents of the Russian federation budget policy (Sabitova & Shavaleyeva, 2015; Mikhaylov, 2019), oil rents and state budget dynamic relationship in Bahrain (Kreishan, Abou Elseoud, & Selim, 2018), the impact of world oil prices on budget and monetary policy of OPEC (Alekhina & Yoshino, 2018), and oil rents management in Iraqi budget formulation (Salmana, Majeedb, & Ameen, 2019). Second, the existing studies in the context of Malaysia hardly touch the present emerging issues, such as monetary policies to oil price changes (Shangle & Solaymani, 2020), the relationship between crude oil variables and budget variables (Zakaria & Shamsuddin, 2017), as well as the resource management of the oil and gas sector (Yeoh, 2019). As a result, only a few studies have assessed similar issues in different setting, while the Malaysian context in the literature on such topics is exceptionally scarce. In order to bridge these gaps, this study compared Malaysia's oil rent dynamics and PGEB with other major oil-exporting countries by reviewing the annual times series data from 2005 to 2020.

This study contributes to the body of literature by shedding light on the oil rents alliance with PGEB of Malaysia. A landscape discussion regarding the oil rent dynamic on PGEB via comparison with relevant oil-exporting countries is presented in this study, while also considering other impactful exogenous factors, namely the global financial crisis of 2007-09, the Covid-19 pandemic, and the Russia-Ukraine conflict. Therefore, this study offers significant contributions by relating the present events to the topic at hand.

2. Literature Review

As a net oil exporter, Malaysia was ranked 25th in the world for oil reserves and 29th for oil production and exports in 2012 (EIA, 2013). The national crude oil reserves were estimated to be around 5 billion barrels in 2017, with daily production and exports of 241 thousand and 103 thousand barrels, respectively (Malaysia Energy Information Hub, 2020). Hence, oil rent accounts for a significant fraction of the national revenue (~ 22% in 2018) and the

country primarily relies on it (Malaysia Treasury, Section 2: Federal Government Rents, 2018). It is typical for the budget process to depend entirely on the national revenue collection (Shangle & Solaymani, 2020). However, it is difficult to predict the annual revenue stemming from a wide range of endogenous and exogenous factors. Therefore, formulating PGEB poses a certain degree of risk to its reliance on aggregate revenue collection. Within the oil revenue sector, both direct and indirect effects could be channelled via government budget expenditure (Kriskkumar, Naseem & Azman-Saini, 2022; Shangle & Solaymani, 2020).

The Government of Malaysia presents federal budgets on annual basis to propose its revenue and spending based on yearly forecast of economic circumstances. Federal funding encompasses the government's income and spending projections with fresh policy initiatives. However, the Covid-19 pandemic compelled most governments to take counter-cyclical measures to fight against the crisis. The federal government took the promotional policy action by injecting funds to stimulate the economy through massive budget. Apart from the massive budget for the Covid-19 stimulus, Malaysia spent more significant welfare funding and tax relaxation to preserve both public wellbeing and national productive sectors to mitigate the adverse impacts of the crisis (Shah et al., 2020). The Covid-19 pandemic led to a sharp decline in the oil price and the national revenue from this sector of the country (Dutta et al., 2021). As a result, the government enabled the big expansionary budget by borrowing and expecting oil rents to grow shortly in order to repay the debt that could stabilise the national economy.

Prior studies disclosed that oil rents significantly affected the Malaysian economy. Solaymani et al., (2015) reported that the plunge in the oil market lowered the Malaysian GDP, employment rate, economic progress, investment, and a host of other aspects. It is a reasonable belief that any decline in all financial components of Malaysia during low oil rents is an affiliate to the initial budget figure. This similar scenario was observed across other oil-exporting countries, whereby the fall in oil rents led to a decline in government budget expenditure (Nazari, Asadi, & Imanian, 2019; Bakirtas & Akpolat, 2020).

Ironically, Malaysia has subsidised the oil price since 1957 (Solaymani et al., 2015). If oil price rises, the subsidy also rises and exerts a direct impact on government budget formulation. Oil price fluctuations also adversely affect the domestic transport sector, production sector, and supply chain, among others (Kreishan, Abou Elseoud, & Selim, 2018; Hussein, 2021). As a result, tax revenue collection from those sectors was affected, thus further affecting the projected budget. Hence, the rise or fall of oil rents imparts a direct influence on the PGEB of oil-exporting countries. Thus, this study conducted a meta-analysis to unveil the oil dynamics on PGEB.

The Wagner's Hypothesis (1977) upholds that during the industrial revolution, the share of public expenditure in total expenditure grew as the national real income per capita increased. Hence, economic progress causes an increase in the relative size of the public sector.

Studies on Wagener's law of expansion have resulted in mixed findings. Some discovered a positive relationship between public sector development and economic growth, particularly among developing countries but not underdeveloped ones (Sharma, Srivastava, & Khanna, 2022). Even in developed countries, some demonstrated a negative link between government spending and income. Olanrewaju and Funlayo (2021) validated Wagner's theory about the relationship between three major government expenditure components (health, education, and capital investment) and economic growth in Nigeria and Angola. Their finding revealed no indication of long-run correlation between government expenditure components and economic growth.

Rani and Kumar (2022) assessed the validity of Wagner's hypothesis for the Indian economy before (1967-1990) and after (1991-2015) reformation period. The study looked into six variants of Wagner's hypothesis. The outcomes indicated considerable support for Wagner's hypothesis during the post-reform period, while the elasticity of government spending to economic growth was low during the pre-reform period. In all versions of Wagner's theory, unidirectional causality seemed to shift from economic growth to government spending.

Faheem, Azali, Chin, and Mazlan (2021) examined the dynamic relationship between oil prices and government spending in Saudi Arabia, Kuwait, and the United Arab Emirates from 1991 to 2017. The study outcomes unveiled the existence of asymmetric behaviour in the oil price, which is a vital aspect considered by fiscal authorities when deciding on public expenditures. The results evidenced the Keynesian theory in the United Arab Emirates. While Kuwait fit both ideas concurrently, only Saudi Arabia verified Wagner's law. The findings corroborate the spend-and-revenue hypothesis in Saudi Arabia and Kuwait, but not in the United Arab Emirates. Thus, the government should prioritise reinvesting the excess from oil receipts into other areas of the economy to mitigate the negative consequences of the decline in oil price.

3. Research Data and Methodology

The time series data were collected from the World Development Indicators of the World Bank databank from 2005 to 2020 based on data availability. Oil rents were based on the country's crude oil-generated revenue percentage of GDP. The PGEB refers to the percentage (% of GDP) retrieved from the Government Finance Statistics (GFS) of International Monetary Fund (IMF). Tax revenue data of the selected countries are presented in Tables 1 and 2, along with oil rents and PGEB. Tax revenue (% of GDP) data were collected from the World Bank, except for Kuwait and Nigeria that were gathered from the Organisation for Economic Co-operation and Development (OECD)¹ and the CEIC Data² sources, respectively.

1 <https://www.oecd.org/ctp/tax-policy/revenue-statistics-africa-nigeria.pdf>

2 <https://www.ceicdata.com/en/indicator/kuwait/tax-revenue--of-gdp#:~:text=Kuwait>

The gathered raw data were analysed using the meta-analysis approach, which described the issues properly and effectively (Crits-Christoph, 1992; Lipsey & Wilson, 2001). Past studies and collected data were synthesised to meet the study objectives by adhering to the approaches prescribed by Crits-Christoph (1992) and Lipsey and Wilson (2001). The analysed data are illustrated via graphical presentation to portray the historical alliances between the variables.

Malaysia is the primary setting of this study in exploring the oil rent dynamics on PGEB. Other oil-exporting countries were compared with Malaysia for oil rent and PGEB. The countries were selected based on two criteria: top oil exporters and emerging economies. This comparative study involved Malaysian and other top oil exporters identical to Malaysia for some economic parameters determined from Worldstopexports 2020³ and World Bank 2020⁴. The selected countries were Saudi Arabia, Russian Federation, Kuwait, Kazakhstan, Nigeria, and Brazil.

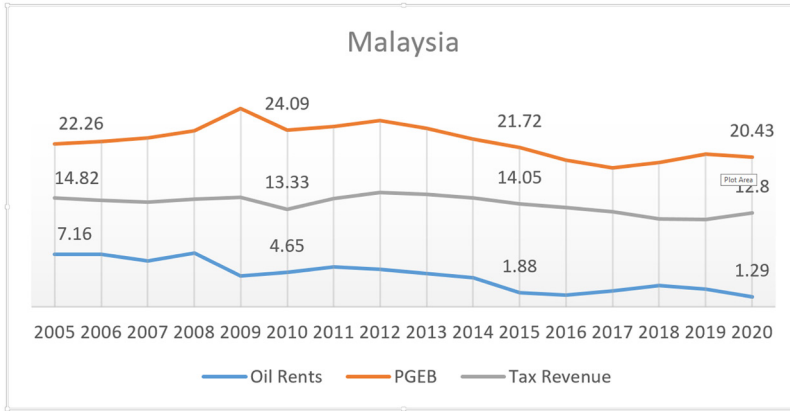
4. Discussion

Graph 2 displays the relationship between oil rents and tax revenue in the Malaysian government's preliminary approved expenditure budget (PGEB). In 2005, Malaysia's oil rent and tax revenue were 7.16 and 14.82, respectively, while the approved expenditure budget was 111.56. The oil rent, the tax revenue, and the PGEB remained almost unchanged for three years. In 2008 and 2009, the oil rent decreased and the PGEB behaved inversely due to the 2007-09 credit crisis. Hence, the government adopted a massive budget by borrowing to support the economy. Several studies verified that the 2008 financial crisis disrupted the production sector and reduced oil demand, which caused the oil rent and budget figures to plunge (Ahmad & Abdul-Ghani, 2011; Ferreira et al., 2019; Sheikh et al., 2020). In 2015 and other years, PGEB mostly followed the trend of oil rents. Tax revenue also contributed to PGEB, which is almost constant as the graph shows but PGEB interestingly adhered to the fluctuations of oil rents.

3 <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>

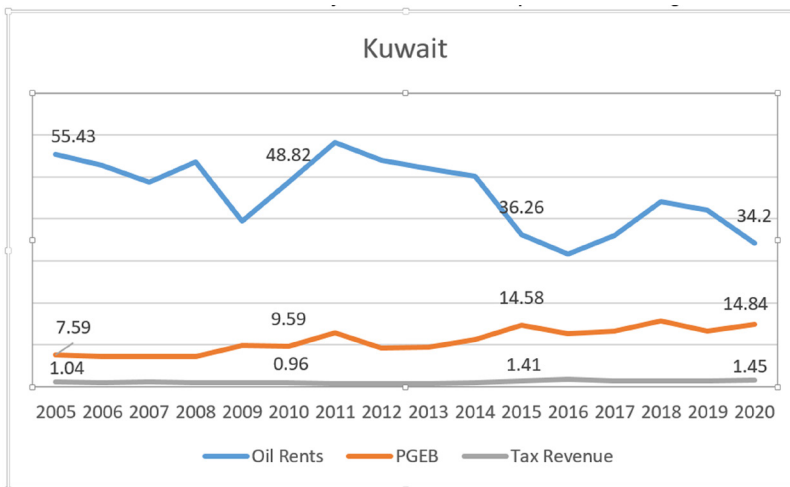
4 <https://www.worldstopexports.com/worlds-top-oil-exports-country/>

Graph 2: Effect of Oil Rents on Primary Government Expenditure Budget (PGEB) of Malaysia



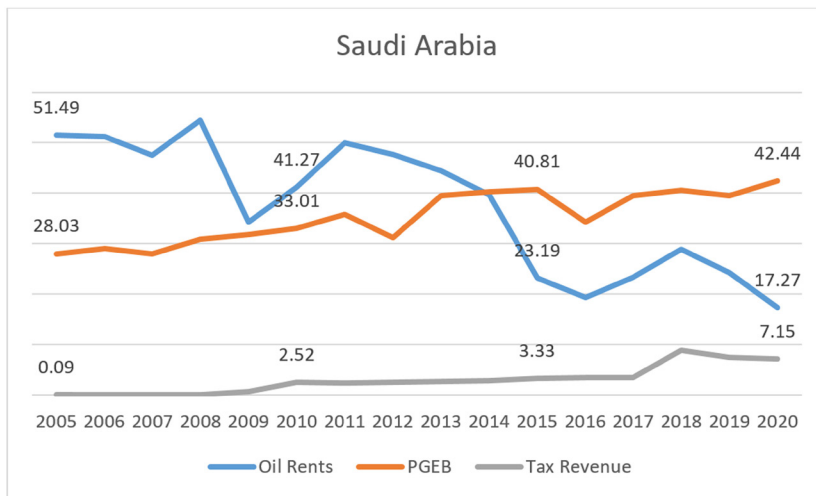
Further examination regarding the effect of oil rents on PGEB in other relevant oil-exporting countries is imminent to validate the findings for Malaysia. Graph 3 portrays the oil rent and PGEB of Kuwait, which is one of the top oil exporters and ranked 7th among the oil exporters in 2020 (Nourelfath, Lababidi, & Al-Dowaisan, 2022). The graph demonstrates that both oil rents and PGEB fluctuated within the same pattern, but the tax revenue remained somewhat unchanged similar to Malaysia. In 2009, during the credit crunch, the oil rent plunged while the PGEB figure contrarily increased. In 2011, both oil rents and PGEB increased. A similar scenario was noted in other years, particularly for 2012-2013 and 2016-2019 (see Graph 3). However, the trend observed in 2020 differed due to the pandemic. Thus, Graph 3 implies that oil rents have a substantial role in the PGEB formulation in Kuwait, similar to Malaysia.

Graph 3: Effect of Oil Rents on Primary Government Expenditure Budget of Kuwait



Next, the trend of oil rents and PGEB of Saudi Arabia, the largest oil-exporting country in the world, was examined. Several studies acknowledged that the budget expenditure of Saudi Arabia is highly reliant on oil rents (Alkhateeb, Mahmood, & Sultan, 2021; Alargoob & Alrashidi, 2021). Any change in the oil market is highly elastic with the budget process, as depicted by the fluctuations in Graph 4. The graph displays that the oil rent decreased from 2005 with some changes and the PGEB trend of the country responded similarly with some minor inverse fluctuations. Although the oil rents sharply dropped in 2009 and 2020, the PGEB of the country rose due to global economic depression and Covid-19 pandemic. Despite its most significant share of oil, the trend of oil rents and PGEB in Saudi proved the significance of oil rent for their national revenue collection and budget policy. The importance of tax revenue to PGEB was highlighted due to the economic diversification in recent years in Saudi Arabia, while highly depending on oil rents for budget process. In Malaysia, in a broader sense, the economy was comparatively less dependent on oil rent due to its diversification and sustainability (Rahman, 2020; Lau & Lee, 2021), which differed from the Saudi Arabian economy.

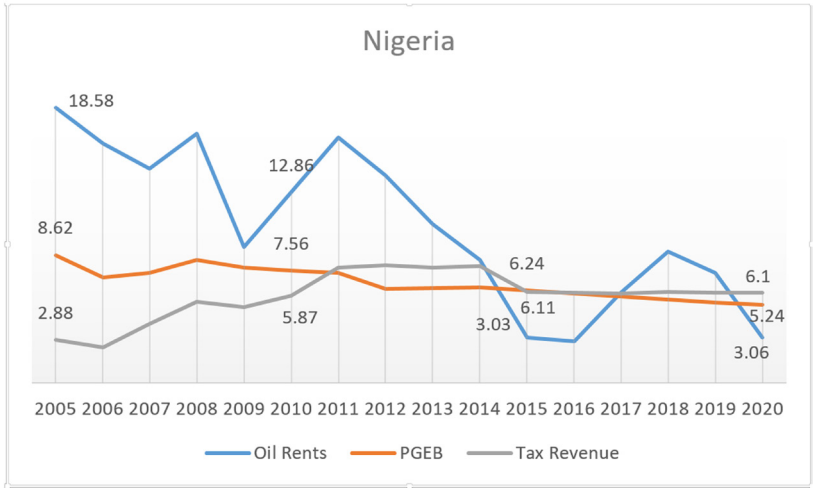
Graph 4: Effect of Oil Rents on Primary Government Expenditure Budget of Saudi Arabia



Graph 5 illustrates the trend of oil rents and PGEB in Nigeria. The country reduced its reliance on oil sector for PGEB formulation, as its trade sector and information and communications technology (ICT) domain began progressing (Murat & Isaac, 2019). In 2005, the oil rent was 18.58% of the GDP and the PGEB was 8.62%, but the tax revenue was only 2.88%. Despite the 2011 economic crisis that hit the country and affected almost all sectors, its PGEB showed barely any change because the country paid a huge amount of debts taken to tackle the economic depression in 2009. However, the scenario changed in 2020 when the oil sector only contributed 6.1% of the GDP, but the PGEB was higher at 5.24. Notably, the tax revenue sector grew but it exerted a nominal impact on budget formulation of the country. Oil rent

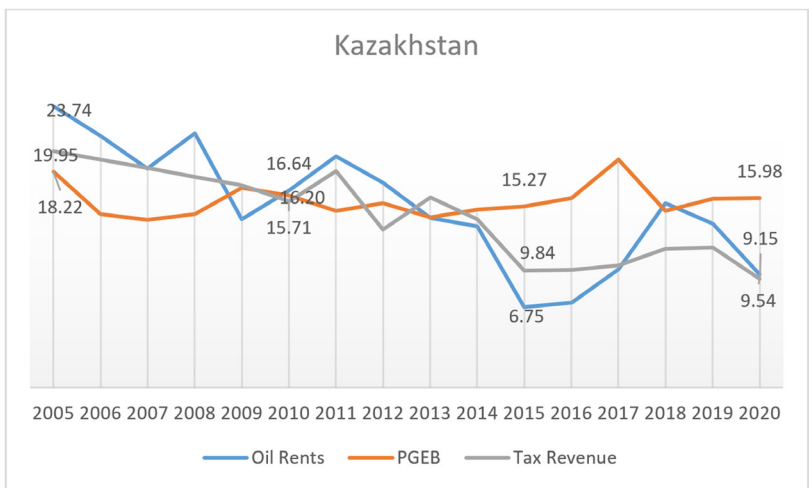
was still essential for PGEB formulation, but the vicissitudes of the budget mostly happen following the oil rent value, despite the recent boom in trade and ICT segments.

Graph 5: Effect of Oil Rents on Primary Government Expenditure Budget of Nigeria



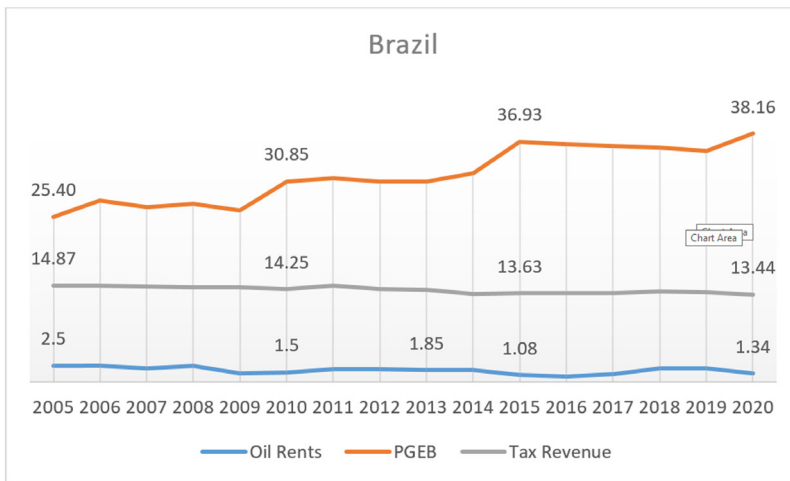
The PGEB of Kazakhstan was closely linked to its oil industry. Graph 6 shows that when oil rent fluctuated, PGEB fluctuated as well in most years. Oil rents increased and declined in 2011 and 2019, respectively, when compared to previous years. The PGEB also climbed and reduced in parallel with the oil rent from 2005 to 2010. In 2009 and 2020, however, the budget barely adhered to the trends of the oil rents. Graph 6 confirms that the oil rent is too crucial to support the PGEB formulation in the same way it helps Malaysia.

Graph 6: Effect of Oil Rents on Primary Government Expenditure Budget of Kazakhstan



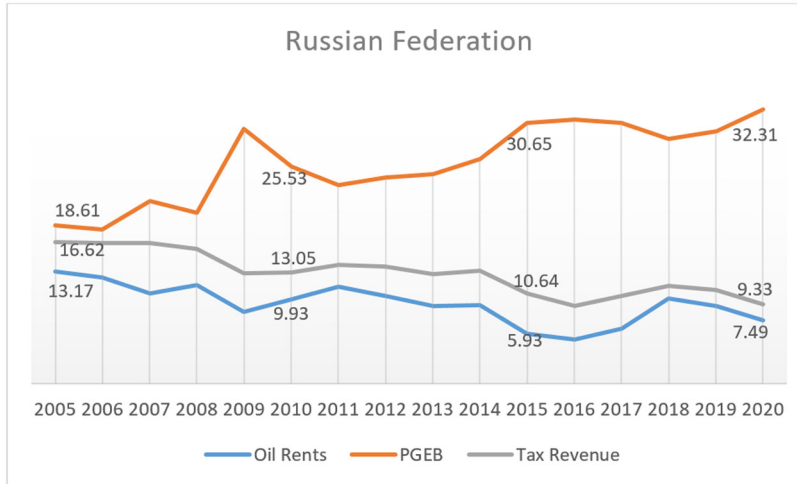
Brazil and Malaysia are comparable in many ways; both endeavour to transition from developing to developed countries, maintain stable growth, and gradually reduce their reliance on oil rents. As presented in Graph 7, Brazil's oil rents are linked with PGEB, but the dependency decreased, similar to the case in Malaysia. While some minor oscillations were noted in oil rents, PGEB also displayed some fluctuations in the same years; indicating that oil rents continued to affect Brazil's PGEB. The tax revenue sector of the country emerged as one of the prime sectors that contributed in the budget-making process and remained almost constant.

Graph 7: Effect of Oil Rents on Primary Government Expenditure Budget of Brazil



Graph 8 shows the trend of oil rents and the government budget of the Russian Federation. Despite being the second-largest oil producer, the oil rent trend observed in Russia is similar to that of Malaysia. Graph 8 demonstrates that the oil rents experienced some fluctuations and a downward trend, while the Russian PGEB also acted similarly from 2005 to 2015. In recent years, the oil sector dependency decreased significantly due to the improvement in industrial sectors. Some studies confirmed that Russia has been trying to diminish its oil dependency for budget fund support (Alkhateeb, Mahmood, & Sultan, 2021; Alargoob & Alrashidi, 2021). Russia have begun diversifying its economy for sustainable budget expenditure by emphasising on industrialisation, agriculture, technology production, tourism, etc. (Sapuan & Roly, 2020; Lau & Lee, 2021).

Graph 8: Effect of Oil Rents on Primary Government Expenditure Budget of the Russian Federation



Apart from oil rent, tax collection was one of the largest revenue sources for PGEB formulation. Tax revenue was the most significant contributor to budget formulation, although oil rents were crucial in budget formulation for oil exporters. In order to present a better scenario of oil rents and PGEB, tax revenue was weighed in for Malaysia and other oil exporters.

Table 1: Descriptive Statistics, n=112

Variable	Mean	Std. Dev.	Min	Max
Oil rents	17.82	17.15	.82	58.25
PGEB	21.26	10.47	5.24	42.44
Tax revenue	9.37	5.83	.09	19.95

* Number of Countries 7, * Oil rents percentage of GDP

* PGEB percentage of the GDP, * Tax Revenue percentage of GDP

Table 1 tabulates the mean, standard deviation, minimum, and maximum values of the observed data among the selected countries. The mean and standard deviation values of oil rents are 17.82 and 17.15, respectively. Next, the minimum and maximum values of oil rents are 0.82 and 58.25, respectively. As for the PGEB, its mean and standard deviation values are 21.26 and 10.47, respectively. The minimum and maximum values of PGEB are 5.24 and 42.44, respectively. The table demonstrates that the mean value of tax revenue is 9.37 and the standard deviation is 5.83, while the minimum and maximum values are 0.09 and 19.95, respectively. No obvious standard deviation was observed to imply that the data are normally distributed.

Table 2 presents the oil rents, tax revenue, and PGEB data for Malaysia and the selected countries. In Malaysia, both oil rents and PGEB decreased from 2005 onwards. Meanwhile, tax revenue remained consistent from 2005 to 2015, although at the same time, oil rents decreased, and a similar fall was noted for PGEB. In the rest of the years, the oil rents, tax revenue, and PGEB remained consistent with minor fluctuations. This scenario implies that a rise or fall in tax revenue barely affected any similar change in PGEB. Still, the fall and rise in oil rents mostly generated identical fluctuations in the PGEB of Malaysia. Several studies support these scenarios (Matallah, 2022; Dharfizi et al., 2020).

The scenario of two high oil rents countries, Kuwait and Saudi Arabia, is shown in Table 2. Their oil rents appeared to be the most significant contributors to their national revenue and PGEB. In Kuwait, the oil rents fluctuations were similar to PGEB, while the tax revenue offered a small contribution to both aggregate income and PGEB. The behaviour of oil rents and PGEB in Saudi Arabia is similar to that of Kuwait. Despite the increase in tax revenue, the PGEB of Saudi Arabia was still highly dependent on oil rents.

Table 2: Oil Rents, Tax Revenue and PGEB% of Malaysia and Two High Oil Rents Countries

Year	Malaysia			Kuwait			Saudi Arabia		
	Oil rents	Tax revenue	PGEB%	Oil rents	Tax revenue	PGEB%	Oil rents	Tax revenue	PGEB%
2005	7.16	14.82	111.56	55.43	1.04	94.88	51.49	0.09	123.11
2006	7.16	14.51	110.47	52.73	0.99	94.88	51.28	0.10	124.00
2007	6.219	14.30	112.24	48.72	1.13	94.85	47.53	0.11	122.70
2008	7.29	14.66	110.20	53.65	0.85	85.82	54.49	0.12	126.85
2009	4.15	14.94	99.96	39.58	0.97	96.28	34.31	0.70	125.57
2010	4.64	13.33	106.75	48.81	0.96	92.86	41.26	2.52	121.09
2011	5.41	14.79	108.34	58.24	0.76	99.45	49.98	2.33	142.53
2012	5.09	15.61	109.45	54.03	0.72	87.50	47.69	2.53	132.93
2013	4.49	15.31	101.55	52.08	0.78	90.90	44.43	2.73	121.31
2014	3.95	14.84	98.47	50.14	0.90	90.00	39.72	2.77	133.40
2015	1.87	14.05	94.85	36.26	1.41	90.67	23.19	3.33	116.43
2016	1.58	13.55	95.20	31.64	1.69	90.38	19.33	3.38	98.871
2017	2.15	12.94	100.94	36.13	1.38	89.11	23.31	3.38	104.49
2018	2.88	12.02	102.38	44.05	1.37	92.55	28.86	8.92	110.37
2019	2.36	11.93	96.74	42.14	1.28	95.55	24.24	7.40	95.791
2020	1.29	12.80	95.82	34.20	1.45	104.65	17.27	7.15	105.46

* Oil rents percentage of GDP

* PGEB percentage of GDP

* Tax Revenue percentage of GDP

In the context of other oil exporters (developing countries), such as Kazakhstan, Nigeria, Brazil, and the Russian Federation, the oil rents for these countries declined, which is similar

to the case observed in Malaysia, Kuwait, and Saudi Arabia. Simultaneously, tax revenue is a vital revenue source to these countries, except Nigeria. Table 3 shows that in most of the years when oil rents fluctuated, the PGEB also fluctuated mainly in the exact directions for these countries. Despite its importance in national aggregate revenue collection, tax contributed to a minor wave of fluctuations in PGEB by its up and down patterns, as portrayed in Table 3. The PGEB of Nigeria appeared to be relatively stable.

Table 3 highlights the stability of oil rents, despite the rise in tax revenue. The PGEB rose in accordance to tax revenue increment. This scenario proves that oil rents have a crucial role in the PGEB of most of the oil-exporting countries. However, from 2005 to 2020, most countries faced several global and regional economic crises, such as the 2007-08 recession, the Covid-19 pandemic, and stagflations in several countries. Therefore, many countries increased their PGEB to recover the economy despite the oil market plunge and low oil sector revenue.

For example, in 2020, Brazil and the Russian Federation increased their PGEB dramatically despite the plunge in oil rent, while their tax revenue was almost unchanged. Studies reported that many oil-exporting countries increased their budget value to fight the crisis, thus expecting to cover up the budget gap with high oil rents after the spike in oil market demand (AlKathiri et al., 2020; Jin & Xiong, 2021).

Table 3: Oil Rents, Tax Revenue and PGEB% of Medium Oil Rents Countries

Year	Kazakhstan			Nigeria			Brazil			Russian Federation		
	Oil rents	Tax revenue	PGEB%	Oil rents	PGEB%	Tax revenue	Oil rents	Tax revenue	PGEB%	Oil rents	Tax revenue	PGEB%
2005	23.74	19.949098	119.32	18.577	89.6233	2.875	2.4993	14.87322	95.261	13.169	16.62291	116.881
2006	21.22	19.228915	117.24	16.147	89.5418	2.408	2.5078	14.777837	95.05	12.479	16.568216	114.558
2007	18.49	18.508733	113.2	14.444	89.4604	3.977	2.0794	14.682455	93.564	10.599	16.551313	109.571
2008	21.48	17.78855	125.73	16.845	90.4414	5.459	2.4225	14.587073	91.077	11.59	15.818068	115.228
2009	14.20	17.068368	96.272	9.1652	92.7222	5.109	1.3203	14.49169	87.165	8.4306	12.956352	107.04
2010	16.63	15.71238	110.14	12.857	78.3231	5.868	1.5009	14.249541	89.005	9.9294	13.048349	102.331
2011	19.50	18.257834	110.68	16.556	95.912	7.804	1.9916	14.851324	87.923	11.418	13.954204	102.501
2012	17.273	13.312098	105.29	13.995	87.8008	7.957	2.0092	14.332365	86.606	10.342	13.754673	101.884
2013	14.326	16.030178	96.337	10.709	91.2152	7.769	1.8549	14.125513	86.451	9.1227	12.933492	99.6683
2014	13.615	14.193433	105.25	8.2974	87.5263	7.873	1.8675	13.490125	88.524	9.2004	13.255361	106.243
2015	6.7532	9.8357116	91.056	3.0271	105.107	6.114	1.0761	13.629717	88.746	5.9348	10.642095	100.886
2016	7.1422	9.9242502	111.01	2.8	80.469	6.068	0.8201	13.710483	96.091	5.1778	9.1831221	101.972
2017	9.9812	10.303011	130.31	6.0608	87.4371	6.017	1.2353	13.605289	91.005	6.47	10.288406	101.105
2018	15.581	11.7178	107.48	8.8408	86.6328	6.136	2.0538	13.940349	92.518	10.012	11.468773	101.112
2019	13.837	11.786943	116.3	7.4	106.168	6.056	2.0382	13.736164	94.282	9.1588	10.975124	100.983
2020	9.538	9.1463599	116.76	3.0584	98.7251	6.101	1.3408	13.442484	119.78	7.4925	9.3289371	117.028

* Oil rents percentage of GDP
 * PGEB percentage of GDP
 * Tax Revenue percentage of GDP

This study explored the oil rent dynamics in PGEB formulation in Malaysia and other selected oil exporters. The illustration from Graphs 2 to 8 and Tables 1 to 3 summarise the findings of this study, which imply the significance of oil rents in PGEB formulation of Malaysia and other oil exporters. The conclusions are harmonious with several past empirical studies. The studies verified that oil rents shape the economy, including the budget process of oil-exporting countries, such as Saudi Arabia, Russia, Kuwait, Nigeria, Brunei Darussalam, Iraq, Iran, and the Arab Gulf (Ahmadov, Sarkarli, & Rahmanov, 2018; Alekhina & Yoshino, 2019).

While tax revenue emerged as one of the prime sectors of the aggregate income of any country, including the oil exporters, it projected relatively minor dominance in PGEB formulations among the studied countries. In recent years, some oil exporters had diversified their economies and minimised their oil rents dependency, such as Brazil, Mexico, Malaysia, and Vietnam (Ross, 2019; Charfeddine & Barkat, 2020; Tang & Abosedra, 2020). Oil rents are still vital in formulating PGEB among oil-exporting countries (Hassan, 2021; Faheem et al., 2021).

As Malaysia gathered a considerable amount of oil export revenue, this motivated fiscal PGEB preparation. The persistent revenue from the crude oil sector barely caused any fiscal distress in Malaysia. The oil rents and PGEB of other oil exporters revealed consistent scenarios in the graphs and tables. The discussion implies that the overall oil sector is one of the prime sectors of the Malaysian economy and for the selected countries, due to its imminent role in PGEB formulation.

5. Conclusion and Policy Implications

In accordance to the study objectives, oil rents and PGEB of Malaysia and other selected oil exporters were analysed. Apparently, oil rents contributed considerably to the PGEB of the selected countries. If oil rents fluctuated, the PGEB also fluctuated in the studied countries. A historical comparison of oil rents and PGEB is presented between Malaysia and other oil-exporting countries based on the study objective. Interestingly, these oil-exporting countries highly relied on oil rents for their fiscal budget expenditure. Although oil rents reliance was not at the same level for all the analysed countries due to economic diversifications, a considerable dependence of the oil rents on PGEB formulations was still apparent.

The study provides some valuable policy implications that benefit the policymakers of Malaysia and other oil exporters. First, this study reviewed the oil sector and PGEB of the countries and disclosed that every significant event in the world (geopolitical and non-geopolitical) had direct connections with crude oil (oil rents) and PGEB. The financial crisis of 2007-09, the Covid-19 pandemic, and the most recent Russia-Ukraine conflict had affected oil rents and PGEB among oil exporters, including Malaysia. Therefore, policymakers in Malaysia and other oil exporters should consider the oil market volatility before PGEB approval, besides taking into account global geopolitical risks, economic recession, stock

market trends, natural calamities, cross-border terrorism, pandemic, and a host of other factors (Charfeddine & Barkat, 2020; Tang & Abosedra, 2020).

Second, the oil rents for all the studied countries significantly decreased in 2020, and interestingly, the PGEB behaved asymmetrically. During the Covid-19 pandemic period that witnessed the global lockdown, oil demand significantly decreased and the discussed oil exporters generated small revenue from this sector when compared to other years. At the same time, the PGEB increased rapidly to fight against the Covid-19 pandemic. Therefore, the oil exporters increased their oil production and exported considerably when the lockdown period ended to bridge the budgetary gap. As a result, policymakers must adjust their oil production and PGEB formulations upon considering practical factors.

At present, the production of renewable energy is highly prioritised in policymaking to minimise the production of CO₂ emission, especially for environment sustainability. Malaysia and other oil exporters have many international treaties to lower CO₂ emission and increase the share of renewable energy. These initiatives might decrease the demand for crude oil in the near future. Upon considering these issues, oil exporter countries should increase their oil production to avoid future oil demand fall or sharp price fall. Meanwhile, future studies should focus on the issue of future oil demand fall due to the huge production of renewable energy.

Moving on, countries should further diversify their economy to tackle any big shock from the oil sector. Several studies prescribed similar recommendations for the oil exporters (Lebdioui, 2019; Haseeb et al., 2019; Kardooni et al., 2018). Lastly, this study points out that economic diversification is crucial for oil exporters to enable sustainable budgeting. Renewable energy production should be prioritised to reduce oil dependency among oil consumers. Malaysia has prioritised several projects to generate 20% cleaner energy by 2030 (Abdullah et al., 2019). Hence, the Malaysian economy and budget consolidation are somewhat on the right track, along with further economic diversifications. Renewable energy production should minimise the existing oil rent dependency. Future studies, hence, may want to look into the impact of economic diversifications and renewable energy production in the PGEB of Malaysia and other oil exporters.

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A Review and Evolution of Digital Audit on Auditor Performance

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Abstract

Purpose: The study aims to understand the role of the external auditor in the adoption of digital audit in Malaysia.

Design/Methodology/Approach: A literature review was conducted to provide comprehensive knowledge to determine the factors impacting the effectiveness of digital audit. The Technology to Performance Chain (TPC) model outlines how technical developments affect individual performance levels in the implementation of digital audit. Adopting technological tools for digital audit could enhance the efficiency and effectiveness of an auditor's job performance in auditing.

Findings: A conceptual framework comprising factors impacting the adoption of digital audit effectiveness in Malaysia was proposed based on previous studies and the transition from manual to automated audit tasks in digital audit.

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Practical Implications: Regulators need to provide a detailed framework for auditors on the importance of adopting digital audit during audit tasks. Secondly, the regulators need to emphasise the requirement of audit standards to achieve the objectives. Finally, the lack of empirical research on the role and effectiveness of digital audit highlights the need to develop an appropriate methodology to enhance the adoption of digital audit.

Originality/Value: The regulators ensure compliance with audit standards on the adoption of digital audit to enhance auditors' performance. The issues that require further investigation were identified to determine the factors that affect digital audit practices. The study also examined the elements influencing the effectiveness of digital audit presented in one framework.

Keywords: Auditor, digital audit, technology performance chain model, audit tasks.

Introduction

Auditors are among the most recognised professions due to their expertise and natural tendency to report illegal information objectively. Auditors hold a great responsibility towards the users of financial reporting due to their demand for audit and other assurance services. Given the high level of concern about financial reporting among users, auditors' duties have expanded to include reporting on the efficacy of internal control and operation over organisational financial statements (Kassem, 2018; Tuan Mansor et al., 2020). Today, the integration of information technology (IT) with the accounting and audit system affects organisational processes and internal control. Digital audit expansion enables audit practices to shift from a traditional to a sophisticated audit approach, which is essential for external auditors to appreciate the way future audit contributions affect the auditor performance (Byrnes et al., 2018; Ferri et al., 2020).

Digital audit systems require the largest degree of human intervention as they serve exogenous data and critical analysis that increase the value of auditor performance and lower audit risk (Brown et al., 2007; Halbouni et al., 2016). Digital audit is a tool that requires auditor skills, expertise, experience, and knowledge of computing technology to form audit opinions (Ahmi & Kent, 2013; Pathak et al., 2010). Thus, the automation and acquiescence of audit procedures in digital audit correspond to the auditor's task in furthering the audit objective, which involves the estimate and required auditor professional verifications and scepticism to prevent fraud (Chan & Vasarhelyi, 2011; Ravisankar et al., 2011). The adoption of digital audit is influenced by the auditor's performance expectations and support from organisations and technical infrastructures (Tarek et al., 2017).

Audit firms adoption of digital audit has expanded exponentially in recent years. Under the Statement of Auditing Standards (SASs) No. 316.52, the auditor should employ computer-aided auditing techniques to acquire more comprehensive evidence of data included in important accounts or electronic transaction files. The dependability and quality of data output in auditing provided by computer-based information systems have become increasingly vital to the profession (AICPA, 2006). The audit information must possess the following characteristics: timeliness, relevancy, trustworthiness, free of omissions, and free of fraud (Lamboglia et al., 2020). Digital audit improves the quality of audit evidence supplied to auditors by expanding the scope of transactions tested, delivering the evidence on time, analysing complicated audit processes, or incorporating artificial intelligence into logical and organised auditing procedures (Thottoli & K.V, 2020).

The study is divided into five sections and structured as follows. The emergence of digital audit is discussed followed by the roles and competencies of external auditors in a digital audit environment. A discussion is provided on the adoption of digital audit, transformation of digital audit tasks and the digital audit input, process, and output. The subsequent section discusses the implementation of the TPC model to explain how technological advance influences external auditor performance in conducting their audit assessment process. A conceptual framework is presented on the factors impacting the adoption of digital audit followed by the conclusion.

Literature Review

Auditor Profession Competency in a Digital Audit Environment

A strong connection with one's profession can be characterised as a strong dedication to one's career (Nesje, 2016). Lee et al. (2000) emphasised the significance of research on the role and influence of professional commitment where one's career is a significant part of their life. Additionally, their level of professional commitment produces crucial implications for them and the organisation. Hence, studies involving accountants have been conducted. Hall et al. (2005) mentioned that accountants with a strong commitment to their profession tend to possess a strong moral need to engage in behaviours that benefit the profession, such as reporting others' questionable activities. Kaplan and Whitecotton (2001) also discovered a positive relationship between accountants' professional dedication and their propensity to report wrongdoing. Observably, accountants who are more committed to their profession are more inclined to come forward and report wrongdoing to authorities.

Tuan Mansor et al. (2020) stated that auditors' willingness to act ethically is highly influenced by their professional dedication. The SASs was released by the Auditing Standards Board (ASB), which is the senior technical body of the American Institute of Certified Public Accountants (AICPA) responsible for issuing pronouncements on auditing-related subjects. The ASB has been responsible for the creation and dissemination of auditing standards and procedures since its inception in October 1978, which must be followed by all AICPA

members in their professional activities. The ASB believes that auditors should assess data-processing techniques employed by their clients, (which may include using computers) in the same way while simultaneously considering other major variables that may affect the audit. The use of the current digital audit technology may impact the nature, timing, and scope of audit procedures. Hence, the auditor should consider these implications throughout the audit (AICPA, 2015).

Auditor's Knowledge and Skills in Digital Audit

Individual competency is a person's set of competencies that describe a person's properties or characteristics, including knowledge, skills, talents, and attitudes (Plant et al., 2017). Knowledge generally refers to the theoretical understanding of a subject or what an individual learns through education or work experience. Plant et al. (2017) and Seol et al. (2017) suggested that auditors can improve their knowledge through professional certifications and continuing professional development, which is an indicator of an auditor's competence. Meanwhile, skills are the proficiency developed or derived through experience that accumulates over time (Nehme et al., 2019; Reheul et al., 2017). Skills are an expert's specific or technical knowledge of a particular task (Steyn, 2020). Skills distinguish individuals from others as it indicates that they can perform a task with better results, which can be developed over time and mainly acquired on the job.

Auditors should be able to follow the paths of the audited organisations with full awareness of auditing processes and procedures. Hence, auditors must continually develop and upgrade their audit knowledge (Palmer et al., 2004a). The Common Body of Knowledge in Auditing (CBOK) (2015) mentioned the various aspects of auditors' skill sets and knowledge, including analytical and statistics, reporting, understanding complex information system, and the use of IT. Pathak et al. (2010) demonstrated a paradigm shift in the last few decades where the complexity of business transactions and major advances in IT have provided auditors with opportunities and challenges. Moreover, further research could facilitate the examination of factors impacting auditors' performance concerning their skills and knowledge development. Vasarhelyi et al. (2012) suggested that auditors should gain general insights (control and audit methodology) and specific technical knowledge (tools for data analytics, software expertise, workflow, and paper instruments) to improve their performance.

Auditor's Technology Competency in Digital Audit

Prior literature proposed several competencies as performance predictors. For instance, technology or computer competency is one of the key influencing competencies that can impact auditors' performance. Ammenwerth et al. (2006) defined computer literacy as a belief in an individual's competence to successfully complete an informational task based on the general concept of autonomous performance. From an auditing perspective, technology competency is an assumption that auditors can use computers or computational software to perform tasks.

The CBOK (2015) requires auditors' technical skills, such as the usage of computational software to evaluate and contribute to performance enhancement. Wu et al. (2017) examined auditors' competencies and their effect on audit performance. The use of IT is undeniably crucial, specifically in a more complex environment given that computers and networks provide most of the information needed for decision-making (Bradford et al., 2020). Auditors use computer-assisted audit techniques (CAATs) as part of the procedures to process data of audit significance, such as fraud detection software, network security testing, and databases of audit history (Ghani et al., 2017; Mahzan & Lymer, 2014).

Audit Standards Related to Digital Audit

The adoption of advanced digital audit technology aims to achieve the general audit objectives of accuracy, completeness, ownership, valuation, reliability, classification, and disclosure of the data produced by audit software. These objectives will assist the auditor in discovering and detecting any misstatement or fraud in the financial statement (Ahmi & Kent, 2013; Debrecey et al., 2005). The SAS No. 3 mentions the effects of IT on the auditor's opinion and evaluation of internal control, which guides the auditor to conduct audit assessment in IT environments during their audit assessment (AICPA, 2006). The rule primarily concerns specific control issues arising when a major portion of a client's financial data is processed through an IT system. Under SAS No. 3, IT controls are divided into two categories: general and application controls, both of which should be evaluated by the auditor. The SAS No. 3 is concerned with the special control characteristics in instances when a large number of financial records in an entity are managed by computers.

The SAS No. 48 mentions the effects of computer processing on the examination of financial statements. The ASB suggested that auditors should consider the approaches of data processing using audit technology, which could affect the audit assessment and audit work performance (AICPA, 2006). The SAS No. 48 "The Effects of Computer Processing on the Examination of Financial Statements" supersedes SAS No. 3 "The Effects of Computer Processing on the Examination of Financial Statements," was effective to be used for financial statements beginning after the 31st of August 1984 and repealed on the same date. The following were also amended to provide additional guidance for audits of financial statements performed in IT environments: SAS No. 22 on "Planning and supervision" (AICPA, 1978a), SAS No. 23 on "Analytical review procedures" (AICPA, 1978b), SAS No. 1, Section 320 on "The auditor's study and evaluation of internal control" (AICPA, 1973), and SAS No. 31 on "Evidential matter" (AICPA, 1980).

The SAS No. 94 describes "The Impact of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit". Meanwhile, SAS No. 94 provided guidelines for auditors on the impact of IT on internal control and the auditors' understanding of internal control and evaluation of control risk.

The Adoption of Digital Audit

Job Relevance Factor

The current challenges for auditors include providing audit judgement through the use of audit technologies with a real-time auditing approach (Byrnes et al., 2018). Digital audit use by corporations has increased considerably in recent years. These properties of the audit information must be delivered on time, relevant, reliable, free of omissions, and free of fraud (Chan & Vasarhelyi, 2011). Digital audit could improve the quality of audit evidence supplied to auditors by expanding the scope of transactions tested, delivering the evidence on time, analysing complicated audit processes, or incorporating artificial intelligence into logical and organised auditing procedures (Brown et al., 2007; Byrnes et al., 2018).

Today, up-to-date, accurate, and trustworthy financial information is required for business decisions concerning strategic planning and forecasting, capital gain, decision-making, and providing information to external users (Chan & Vasarhelyi, 2011). Digital audit could also benefit the audit profession by improving the understanding of audit procedures and enhancing knowledge and the transferability of expertise (Omoteso, 2012). Consequently, understanding the nature of audit processes and tasks in the audit technology environment is critical before implementing these aspects. The adoption of digital audit could facilitate auditors in avoiding fraud and error in auditing and transaction by ensuring the accuracy of financial records and the dependability of the systems that store and transport the records and transactions (Bradford et al., 2020).

This auditing technique could increase fraud detection effectiveness and the likelihood of identifying substantial errors in financial statements. All transactions are analysed in real time using audit technologies to improve the efficiency of current organisational operations (Flowerday et al., 2006). During a digital audit, the external auditor examines the business transaction and relies on IT to record and process the transaction to issue a better audit opinion. Hence, digital audit is an acknowledged tool for auditors in completing audit processes, which provides improved assurance to consumers of financial reporting and increased efficacy of auditor work performance.

Audit Profession Factor

The SAS No. 316.52 states that computer-aided auditing techniques should be used to obtain more comprehensive evidence of data included in critical accounts or electronic transaction files. The dependability and quality of data output supplied by computer-based information systems have become more essential in the auditing profession (AICPA, 2006). The three SASs that directly connect to an IT audit are SAS No. 3 (The effects of IT on the auditor's study and evaluation of internal control), SAS No. 48 (The effect of computer processing on the examination of financial statement), and SAS No. 94 (The effect of IT on the auditor's consideration of internal control in a financial statement audit).

Individuals with a strong connection to their profession reflect a strong dedication to their career (Ahmad & Taylor, 2009). Lee and Chui (2019) highlighted that studies on the role and influence of professional commitment are essential where one's career is a vital part of their life and their level of professional commitment creates significant implications for them and the organisation. Meanwhile, external auditors with high career professionalism would believe that work is a necessary part of their lives and thus be willing to strive to achieve their career goals. Palmer et al. (2004) outlined that accountants with a strong commitment to their profession tend to possess a strong moral need to engage in behaviours that benefit the profession, such as reporting others' questionable activities. Tuan Mansor et al. (2021) revealed that auditors' willingness to act ethically is highly influenced by their professional dedication.

Technology Factor

Corporations will not succeed as long-term organisations without their technology matching the organisational structure (Raudeliuniene et al., 2020). Technologies in auditing firms include knowledge and technical skills and abilities. Technology is also a dependent element that refers to "hard" information technology-related features incorporated by organisations (Bradford et al., 2020; Ghani et al., 2017). The use of information technology benefits the implementation and maintenance of business processes that are in charge of data collection, processing, and storage. The correctness of the transaction process increases the reliance on IT in many organisations (Dagilienė & Kloviene, 2019). Moreover, IT can save a lot of cost and reduce human error, thus allowing companies to improve operational efficiency.

The IT plays a crucial role in the audit process, specifically in controlling the organisational environment. The IT has evolved into a tool for simplifying complex activities. Checklists, flow charts, statistical analysis, audit programmes, and expert systems are examples of how IT is used in the auditing field (Omoteso, 2012). Auditors use investigative techniques, such as fraud detection software (data mining) to identify when a crime has been committed (Bradford et al., 2020; Halbouni et al., 2016). Razi and Madani (2013) suggested that IT can be used to aid audit procedures in investigating fraud cases. The utilisation of digital audits can increase auditors' service quality and transparency. According to Widuri et al. (2016), efficient IT occurs when users are able to make use of the available resources in the organisation. The findings revealed that electronic systems impact the effectiveness of auditing work.

Transformation of Audit Tasks in Digital Audit

Audit Assessment in Digital Audit

Digital audit is used in completing audit tasks to assist and support auditors in preparing audit reports (Byrnes et al., 2018; Janvrin et al., 2008). Introducing digital audit could aid auditors in

avoiding auditing and transaction errors by certifying the accuracy of financial records and the reliability of the systems, which store and transport them. Digital auditing can improve audit assessment and material errors in financial reporting. All transactions are analysed using real-time digital audit to extend their current effectiveness (Flowerday et al., 2006). Adopting this technology can reduce labour intensiveness in audit tasks and increase production efficiency (Chan & Vasarhelyi, 2011; Manson et al., 2010). Therefore, external auditors should understand the audit assessment and techniques in a digital environment to perform audit tasks. Table 1.1 presents the transition from traditional to digital audit.

Table 1.1: The Transition from Traditional to Digital Audit

	Traditional Audit	vs	Digital Audit
1. Frequency:	• Periodic		• Continuous or more frequent
2. Approach:	• Reactive		• Proactive
3. Procedures:	• Manual		• Automated
4. Work and role of auditors:	<ul style="list-style-type: none"> • The bulk of work performed is centred around labour and time-intensive audit procedures. • Independent roles of the internal and external auditor. 		<ul style="list-style-type: none"> • The bulk of the work performed is centred around handling exceptions and audit procedures requiring human judgement. • The auditor role becomes certified of the continuous auditing system.
5. Nature, timing, and extent:	<ul style="list-style-type: none"> • Testing consists of analytical review procedures and substantive details testing (nature). • Control testing and details testing occur independently (timing). • Sampling in testing (extent). 		<ul style="list-style-type: none"> • Testing consists of continuous controls monitoring and continuous data assurance (nature). • Control monitoring and detailed testing occur simultaneously (timing). • The whole population is considered in testing (extent).
6. Testing:	• Humans perform the testing.		• Data modelling and data analytics are used for monitoring and testing.
7. Reporting:	• Periodic		• Continuous or more frequent

Source: Chan and Vasarhelyi (2011)

Auditors' improvement in performing audit tasks increases, which involves audit applications, productivity audit approach, and audit working paper review since the application of digital audit (Janvrin et al., 2009; Veerankutty et al., 2018). The auditors use the computerised audit system, which assists in automated audit processes, ease in implementing audit framework, focuses on areas of serious threat, decreases audit period, decreases resources, and provides greater assurance in the effective internal controls (Chaveerug, 2010). Hence, the application of digital audit could reduce the time in completing computational and audit tasks for the auditor and organise the audit decision process, hence increasing the audit

performance quality (Chan & Vasarhelyi, 2011; Dai & Vasarhelyi, 2016; Manson et al., 2010). Therefore, implementing digital audit in the auditors' daily audit routine enhances audit opinions and enables better performance.

Due to technological advancements, large firms have introduced the use of digital audit to assist the audit assessment processes as part of integrated audit automation systems (Byrnes et al., 2018; Omoteso, 2012). The auditor review has relied on a combination of audit assessments based on relevant, reliable, complete, and undoubted audit evidence from information collected in the systems (H. J. Kim et al., 2016). Digital audit systems necessitate the most human intervention by presenting exogenous data and critical analysis, increasing the value of auditor performance and lowering audit risk (Brown et al., 2007). In order to provide audit opinions, digital auditing requires auditor skills, expertise, experience, and knowledge of computing technology (Pathak et al., 2010). As a result, audit procedure automation and acquiescence focus on the auditor's task of advancing the audit objective, which includes the estimate and required audit professional verifications and scepticism to avoid fraud (Chan & Vasarhelyi, 2011; Ravisankar et al., 2011).

Audit Procedures in Digital Audit

The mandatory requirements of International Accounting Standards include mandatory disclosures, which ensure the trustworthiness of financial statements and improve their usefulness to investors. Therefore, an auditor must audit and confirm that financial statements comply with the mandatory disclosure requirements. For example, ISA 540 requires the auditor to determine whether disclosures concerning fair values made by businesses align with their financial reporting system and to report the findings accordingly. The ISA 700 aims to prescribe the content and format of an audit report and alert the auditor to the expected audit process, which involves performing procedures to obtain audit evidence on the amounts and disclosures in financial statements based on the standards (International Standards on Auditing, 2012).

Tuan Mansor et al. (2021) mentioned that partners of the Big 4 audit firms tend to demand correction of amount misstatements on the face of the financial statements than those disclosed in the notes of the financial statements (Tuan Mansor et al., 2021). Kaawaase et al. (2016) stated that the inability to notice and disclose a violation of obligatory accounting rules, such as disclosures indicates degraded audit quality. The degree of clarity and precision with which mandatory information is revealed reflects the degree of rigour of an audit procedure conducted by the auditor, which is crucial for producing a high-quality report (Kaawaase et al., 2016; Mostafa Mohamed & Hussien Habib, 2013).

Information Search in Digital Audit

According to Thottoli and K.V (2020), the information search process involves someone searching for data or knowledge of an issue, situation, or artefact. Mascha and Miller (2010)

added that knowledge searching is a necessary aspect of the cognitive process. Moreover, information search refers to the process of seeking information from sources that are not stored in the mind, such as the annual report of a corporation (Mascha & Miller, 2010). Previously, Kim et al. (2016) highlighted that auditors could obtain two types of information, namely internal and external information depending on the situation. Internal information refers to knowledge stored in the mind, while external information denotes information obtained through client consultations. For instance, working papers, databases, and industry statistics are external information sources. The primary goal of digital audit is information gathering that enables auditors to obtain an informed view, which is used as the basis for decision-making (Kim et al., 2016).

Extensive investigations have been conducted on the information search process in digital audit, specifically in the context of established businesses (Simon et al., 2015). Mascha and Miller (2010) suggested information searching as one of the most integral parts of cognitive processing, specifically in digital auditing performance circumstances. Similarly, Searcy et al. (2003) proposed that information search in digital audit is an essential stage in seeking answers to difficulties in a wide range of decision-making domains. Researchers must fully comprehend how people conduct data searches, select relevant items, and later use these items to construct judgments to succeed in adopting digital audit (Janvrin et al., 2008).

Input, Process, and Output of Digital Audit

Digital Audit Input

Technologies are defined as the procedures businesses utilise to transform inputs into outputs (Dagilienė & Klovienė, 2019). Auditors' job performance and opinions are similar to other business processes, which involve three crucial process aspects: the input, the procedure, and the outcome. In the IT literature, input refers to the characteristics of individual or external auditors as well as technological characteristics related to the use of digital audit in the audit assessment process (Kim et al., 2016). Professional auditors must use their digital audit knowledge and expertise, along with the support of audit firms, to improve the quality, efficiency, and effectiveness of their audit services (Ghani et al., 2017; Thottoli & K.V, 2020). Digital audit is an IT tool that can directly impact the audit process by influencing the audit phase and engagement. Big Data Analytics (BDA) may indirectly impact the audit planning phase considering that audit strategy and plans are formed in response to the data and information gathered during the client's environment study (Tarek et al., 2017). As an IT instrument, BDA may directly impact compliance, substantive testing, evaluations, and reports. Summarily, the need to use BDA may depend on the requirements of auditing regulatory bodies and business clients and internal technological capabilities, IT-related managerial activities, such as internal investments in hardware and software, and the use of external consultants and other resources (Tarek et al., 2017).

Digital Audit Process

The present auditing standards are designed to be implemented to facilitate the audit assessment and external auditor process. Nonetheless, the guidance is used case-by-case in audit assessment procedures and information searches. This guideline also depends significantly on the auditor's competence and professional scepticism which eventually influence the audit report quality (Alleyne & Howard, 2005; Tang & Karim, 2018). Normally, human performance will be affected by the task sequence of actions, the interaction between the task, the task performer, and the environmental characteristics (Liu & Li, 2012).

The term "process" refers to the variables that serve as a link between the input and output. Audit assessment is a process that results in the output of the effectiveness and efficiency of audit job performance. Audit firms and professional auditors experience a complex and challenging audit assessment as a process to mandate information systems implemented by firms, which reflects a major departure from the auditors and affects the audit job performance (Thottoli & K.V, 2020; Widuri et al., 2016). The audit assessment serves as a link or process between the input (individual characteristic and digital audit) and the output, which is referred to as audit job performance. The audit assessment is an intermediate considered as a part of the process.

Due to technological advancements and as part of integrated audit automation systems, large firms have introduced the use of digital audit to assist the audit assessment processes (Byrnes et al., 2018; Omoteso, 2012). The auditor review has relied on a combination of audit assessments based on relevant, reliable, complete, and clear audit evidence from information collected in the systems (Kim et al., 2009; Omoteso et al., 2008).

Digital Audit Output

Output refers to the outcome and consequence of previous elements regarding the auditor's job performance (Kim et al., 2016). In the current study, "output" describes what happens as a result of the audit assessment and how it translates into audit job performance by the auditors. According to Omoteso (2012), IT improves audit function efficacy and efficiency. The combination of one or more experts and software systems forms a better judgement on how to manage the difficulties. The expert's judgement is copied by the systems, which improves communication between the system and the user. Additionally, a well-designed expert system enhances the overall quality, knowledge, and task process of the operations. Widuri et al. (2016) stated that inadequate equipment could impair the auditor's competence in certain circumstances.

The auditor's improvement in performing audit tasks increases, which involves the audit applications, productivity audit approach, and audit working paper review during the application of digital audit (Janvrin et al., 2008; Veerankutty et al., 2018). Auditors use the computerised audit system, which assists in automated audit processes, eases the

implementation of audit framework, concentrates on areas of serious threat, decreases audit period and resources, and increases assurance in the effective internal controls (Chaveerug, 2010). Hence, the application of digital audit could reduce the time in completing computational and audit tasks for the auditor and organise the audit decision process, thus increasing the audit performance quality (Chan & Vasarhelyi, 2011; Dai & Vasarhelyi, 2016; Manson et al., 2010). Consequently, implementing digital audit could generate better audit opinions and enhance auditors' performance in their daily audit routine.

Technology to Performance Chain Model of External Auditor

The TPC model is used in digital audit to comprehend the external auditor's performance in an audit assessment. Digital audit uses the TPC model to provide new insights into the link between working conditions and auditors' performance. This section reviews relevant literature on the TPC model of external auditors.

The Performance of the External Auditor

The TPC model developed by Goodhue and Thompson (1995) explains that IT beneficially influences individual performance, which can be used when the IT capabilities fit the user's tasks. The model indicates that performance effect is achieved by deploying technology suited to activities that support users. Thus, this model is appropriate for evaluating the acceptability and performance consequences of using external auditors in audit firms. According to Abdillah and Saepullah (2018), the TPC model assesses the performance consequences of individual-level information technology utilisation. Technology should be utilised first and tailored to the tasks supported by its technology to produce the greatest performance impact. Hence, this model offers a more precise representation of the relationship between technology and user tasks in order to achieve performance impact.

In Oliveira et al. (2014), TPC measures how well technology aids people in accomplishing their obligations or activities at work. Furthermore, the model is developed in response to changes in the demand for jobs and personal talents and technical capabilities. The relationship between a task, a technology, and a human is referred to as the priority TPC model. A diverse range of tasks requires the use of a diverse range of specific technical features (Oliveira et al., 2014). The model suggests that performance will improve when technology delivers the appropriate features and support for the job at hand.

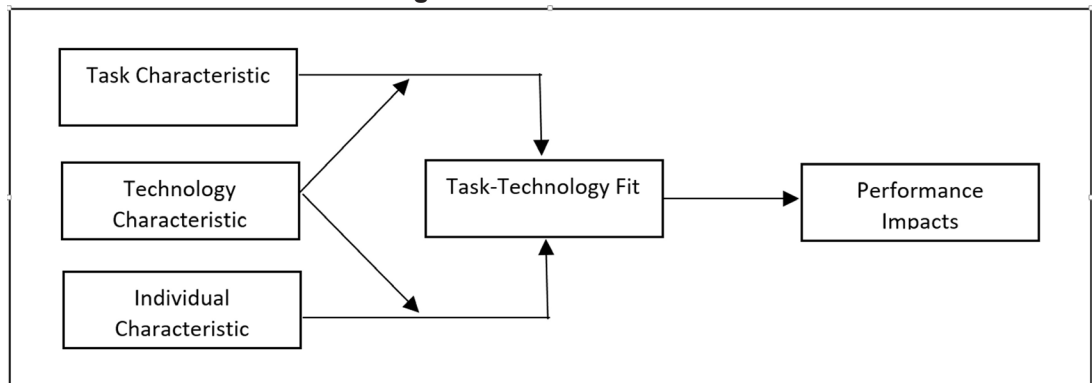
Goodhue and Thompson (1995) stated that IT is more likely to beneficially impact individual's performance when technological capabilities complement the tasks that the user is expected to do. This model is based on user attitudes and beliefs, which can be used to anticipate the use of information systems. Conclusively, improved utilisation of digital audit will result in favourable performance benefits, which illustrates how technology affects performance in the utilisation focus research stream (Goodhue & Thompson, 1995).

Components of Technology to Performance Chain Model

Goodhue and Thompson (1995) developed a model to characterise the components of technology which comprised five basic components: 1) functions: the parts of a system that can be employed to execute the activities that the user is required to perform; 2) tasks: the tasks that the user need or desires to be performed with the assistance of a system or service; 3) matching: how well the functions assist the user in performing the tasks that are required by the task and how the functions operate and how the specific requirements seem; 4) user performance: how the matching affects the user's ability to accomplish certain tasks; 5) usage impact: how the matching would affect the utilisation of the system if another system or tool is utilised as a complement or replacement (if the user needs to use a tool, such as a smartphone as a complement to fully complete the task).

Figure 1.1 illustrates the TPC model by Goodhue and Thompson (1995). A key component of this model is how technology impacts human performance at various levels within an organisation. Individuals will use or embrace technology when the task and the technology being used are complementary or compatible with one another, thus improving individual performance (Goodhue & Thompson, 1995).

Figure 1.1 The TPC Model



Past Studies of Technology to Performance Chain Model

Lending and Staub (1997) employed the TPC model in a qualitative study to better understand the impacts of a new information system on end-user work behaviours. Interviews were employed. The data collected was used with a previously conducted quantitative study. The results demonstrated strong support for the TPC model with the fit construct being the most critical element in explaining early use across technologies.

Huang, Chuang and Liu (2016) examined how the task technology-fit affects the performance of Taiwanese job search websites based on the TPC model. A user

experience survey was distributed to 1,282 job searchers regarding how well the job search websites met the needs of the respondents' job-seeking duties. The findings revealed strong evidence of task-technology fit importance in e-recruiting, which has an immediate impact on performance.

Aljukhadar, Senecal and Nantel (2014) investigated the impact of task technology-fit on task completion success in online contexts. The information used in the analysis was based on two large-scale investigations conducted in partnership with a Canadian market research business with an online panel of 350,000 people. The total number of responses in English was 7,253 and 5,882 in French. Two large-scale studies discovered that website qualities and user characteristics impact the effective completion of informational tasks. Nonetheless, the significance of website characteristics was significantly stronger.

Conceptual Framework on Factors that Impact the Adoption of Digital Audit

Audit Profession factor

The current study proposed that auditors' performance in audit firms can be enhanced through their personal and professional skills and by adopting audit technology support by the management with a clear audit assessment process based on audit standards. An auditor who is an AICPA member must conform to the ASB standards under the AICPA code of professional conduct. In order to identify the SASs that apply to their audit, the auditor should possess appropriate knowledge of digital audit in performing their audit tasks. They should also be prepared to justify deviations from the SASs.

Management Support factor

Various factors in the adoption of digital audit include the degree to which the organisational infrastructure and facilities and the external environment could impact the motivation (Venkatesh & Brown, 2013). Facilitating conditions that might influence the motivation of external auditors who employ the CAATs framework include the availability of sufficient information on what computer-assisted accounting techniques (CAATs) can do, assistance from vendors or software providers, and support from senior management in their business (Braun & Davis, 2003; Mahzan & Lymer, 2014). Adequate training is a critical component of any audit automation programme to maximise the possibility that auditing personnel will take full advantage of the benefits that automated tools can provide (Halbouni et al., 2016; Kim et al., 2016; Widuri et al., 2016).

Resistance difficulties, cost-benefit considerations, project scope, and training should be considered carefully in the formulation and implementation of a strategy for a digital audit environment. The benefits of automation are significant when implemented and used in the manner intended. Consequently, enterprises will be more willing to entertain the idea of expanding their operations into the automation field (Byrnes et al., 2018). Comprehending

how much the infrastructure provided by an organisation and the external environment influence a person's motivation to adopt a new behaviour is crucial (Veerankutty et al., 2018; Venkatesh & Brown, 2013).

Information and Communication Technology Support factor

The implementation of audit technology by auditors is influenced by the information and communication technology (ICT) support that exists in the digital audit environment. The auditor's employment of digital audit is influenced by the auditor's expectations for performance and organisational and technical infrastructure support from the ICT centre in their audit firms (Ahmi, 2016; Thottoli & K.V, 2020). Five factors influence how an auditor utilises the digital audit, namely the client's needs, ICT support audit personnel's needs, ICT support audit organisational needs, the target processor system needs, and the auditor's process or methodology (Merhout & Havelka, 2008). Therefore, the ICT support factors of adopting digital audit critically influence the auditor's job performance in examining audit assessment and information search.

Team Support factor

According to Lin et al. (2010), information sharing and a cooperative attitude affect the employees' ability to perform their jobs effectively. When working in a group, knowledge about the task must be shared with the other group members. Members can share information, thoughts, and experiences with one another, which improves the overall efficacy of the task performed by the team. Tavoletti et al. (2019) mentioned that teams could promote cooperative conduct among employees by encouraging them to work together. For example, employees who are content with their workplace tend to be fully devoted to their jobs, which increases job effectiveness and productivity.

Common goals are unattainable if a lack of trust exists among the group participants. Team members who trust one another possess a healthy working relationship (Brunetto et al., 2013; Lin et al., 2010). Thus, the flow of information, support, and resources within the team and organisation will improve (Brunetto et al., 2013). The primary goal of auditing is to identify and expose the possibility of financial crime within an organisation. Auditors who want to succeed must be able to function as a team to achieve a goal (DiGabriele, 2008). Krstic's findings in 2009 revealed that forensic accountants should collaborate with internal auditors in situations where fraud is detected but they are unable to address the issue. The internal auditor is familiar with the ongoing transactions and information systems in the organisation, which is the most effective collaborator in this situation and contributes to the overall efficiency of the investigation.

Conclusions

To date, Malaysia remains in the early phases of developing digital audit for use. Consequently, the current study provided a better understanding of the adoption of digital audit decisions in the country and the identification of essential factors impacting the usage of digital audit in preparing the audit report for users' decision-making purposes. Audit reports are critical for delivering transparent auditor services and programmes in an impartial and unbiased light and ensuring that the audit report is used transparently. Therefore, competent auditors play a significant role in strengthening public trust and user confidence by ensuring financial statement transparency (Tuan Mansor et al., 2020). Auditors should perform well only if they possess core competencies. A competent auditor plays a critical role in the aspects of the audit firm that are critical for endorsing the fairness and credibility of audit reports while minimising the risk of public corruption when digital audit is implemented with support on the usage to perform their work (Thottoli & K.V, 2020). The TPC model was employed to better understand the adoption of digital audit in the performance external auditing (Goodhue & Thompson, 1995). In adopting audit innovation, external auditors generally rely on the encouragement and full collaboration of organisations, specifically in developing countries, such as Malaysia (Ahmi & Kent, 2013; Lamboglia et al., 2020; Widuri et al., 2016). The TPC framework explains that the influence of technical qualities, task characteristics, and individual attributes compatible with the technology task on individual competencies is relatively equal across all three dimensions.

The findings pave the way for more future research. Researchers should concentrate on commercially available digital audit and demonstrate the direct relationship between the use of digital audit and specific types of audits. The effectiveness of future audit work can be improved by examining how digital audit usage has developed over time and comparing it with other countries and IT environments. In order to increase fraud risk audit judgement and combat fraud risk, studies should examine recent digital audit usage and compare it to other countries and IT environments for future research and development. Investigating these aspects is crucial for the auditor in generating a high-quality audit report for users' decision-making needs.

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Benchmarking Malaysian Government-Linked Companies' Corporate Governance and Sustainable Development Goals Performance with Public Companies of Developed Countries

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Abstract

Purpose: This study examines the impact of Corporate Governance (CG) and Sustainable Development Goal (SDG) practices on the financial market and company performances of public sector companies in Malaysia, benchmarking against the public listed countries in United States, United Kingdom, Canada and Singapore. The benchmarking is done between a developing country against four developed countries.

Design/Methodology/Approach: Panel data regression is adopted for methodology, and the research timeframe is 2017 to 2021. Eight-panel data models, which are stock return, volatility, investor sentiment, profitability, liquidity, solvency, financial efficiency and repayment capacity models are selected.

Findings: The result shows that board responsibilities, remuneration, audit committee, risk management and internal control, engagement with stakeholders and conduct of general meetings are the CG variables to affect the financial market and company performance. SDG 4, 5, 8, 10, 11, 13, 16 and 17 are significant to the financial market and company performance.

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Originality/Value: The result of this study contributes to policymakers, regulators and practitioners in identifying the best CG and SDG practices that can help the Malaysian GLCs to gain better financial performance. The results assist the Malaysian government in understanding the gap between CG and SDG practices compared to developed countries and advocate the Malaysian companies to adopt better practices.

Keywords: Corporate governance, sustainability, financial market, performance, GLC.

1. Introduction

Malaysia is still young at practising corporate CG and SDG reporting for publicly listed companies. In 2015, Bursa Malaysia introduced sustainability reporting along with the Sustainable Development Goals (SDGs) developed by United Nations. Two years later, the Securities Commission revamped the Malaysian Code on Corporate Governance (MCCG) 2017 and implemented the corporate governance (CG) reporting to be published separately from the annual report. These transformative regulations improve the transparency and corporates' impact on the environment, social and governance. Nonetheless, where is the stand of Malaysian government-linked companies (GLCs)? GLCs indicate that the government owns the majority or single biggest stake and has the power to exercise or influence significant decisions. As business entities that are majority-owned by the government who has the power to exercise or influence significant decisions, GLCs have more important roles. Their CG and SDGs practices are vital in shaping not only economic but also economic development of the nation.

Previous studies (see for example, Baharudin, 2019) focus on the impact of MCCG 2017 and sustainability reporting and show that the board effectiveness has improved along with the quality of sustainability reporting. Most publicly listed companies have outlined their SDGs and are more than willing to adhere to the guides of Bursa Malaysia. On the contrary, some authors (see for example, Shamsudin, Abdullah & Osman, 2018) argue that the adoption of CG and SDGs can cause Malaysian firms to perform poorly due to higher cost of compliance and no difference in the performance level of GLCs and non-GLCs companies. Nevertheless, these studies examine the MCCG 2012 and adopt data before 2015, which are obsolete for the current Malaysian situation. The Malaysian government has included CG and SDGs as the key drivers of Shared Prosperity Vision 2030, yet previous studies overlook the importance of GLCs in implementing CG and SDGs. Most studies focus on the impact of CG and SDGs on market performance. Therefore, there is a need to validate the contradictory results, especially in the Malaysian GLCs adopting the latest MCCG and SDGs, which remains limited in academic and practical studies. Due to the nature of targeting both economic and wider social goals, GLCs would be the best subject to examine the issue. Not only that, GLCs in Malaysia are playing a significant role in the nation's economy. They make

up 36% of market capitalization of the country's stock market and their assets represent 51% of the GDP. Five percent of the workforce of the nation come from the GLCs.

The GLCs are crucial in delivering public services to citizens. Nonetheless, most GLCs cannot realise their budget effectively and efficiently without powerful governance (Mauro, Cinquini & Pianezzi, 2021). The lack of sustainable goals can also negatively impact a nation's development in the long term (Boros & Fogarassy, 2019). Malaysia is an emerging market with limited history in regulating CG and SDG may not contain uniform normative regulations that would regulate the control of conformity in a broader sense. The government must determine whether implementing governance and SDGs of GLCs is sufficient to serve the public, as seen in developed countries.

As regards the practices of developed countries, many studies have been devoted to arguing that CG and SDGs have greatly contributed to the financial-market and company performance of UK (Adedeji, Ong, Rahman, Odukoya & Alam, 2019), US (Bull and McNeill, 2019), Canada (Warner, 2020) and Singapore (Khalid & Maidin, 2022) due to higher standards of governance and SDGs. For the Malaysian market, a few studies (see for example, Atan, Alam, Said & Zamri, 2018) have shown similar results in supporting the increasing performance. Nonetheless, previous studies on developed markets emphasise publicly listed companies instead of GLCs due to the limited total number of GLCs in developed countries. Due to their importance in Malaysia as highlighted above, GLCs practices of CG and SDGs may shed more light on this issue. The comparison to the practices done with the developed countries in this study would serve as a benchmark against which, the practices is done in Malaysian GLCs can be compared. It will shed light on the practice gaps between Malaysia and developed countries, which have a long history of implementing CG and SDGs. A comparative analysis between Malaysian companies and developed countries from the aspects of GLCs can also be established.

For practical implementation, the results of this study can assist policymakers, regulators and practitioners in enhancing the current CG and SDG practices of Malaysian GLCs. This study encourages public and non-GLC companies to adopt the best practices as it can prove the positive impact of CG and SDG in increasing the financial market and company performance. For regulation implementation, the results of this study can assist Bursa Malaysia and the Securities Commission in enhancing the framework of MCCG and sustainability reporting by adopting the best practices of developed countries.

The remaining sections of this paper are structured as follows: The second section examines related literature. The methodology and estimated models are described in Section 3. Section 4 contains the findings and analysis. Section 5 concludes with a summary, implications, limits, and suggestions for further research.

2. Literature Review

2.1 Corporate Governance and SDGs

Studies on the corporate governance of Malaysian listed companies are not new in academic research, but the bipolar view on its contribution to firm performance is controversial. Naeem, Karim, Nor and Ismail (2022) examine the impact of corporate governance adoption and argue that firms that comply well with the code significantly contribute to the firm's capital structure. Similar evidence is documented in the studies of Al-Jaifi, Al-rassas and Al-Qadasi (2017) and Khatib and Nour (2021). On the contrary, Zabri, Ahmad and Wah (2016) investigate the top 100 listed companies in Bursa Malaysia and argue that board responsibilities and composition do not influence firms' performance. This statement is supported by the studies of Wai Kee, Yu Hock and Chee Kueng (2017) and Kamalluarifin (2016) in which they argue that governance in the Audit Committee does not improve audit quality and not all elements of governance can contribute to the financial market and company performances. Nonetheless, most studies overlook the uniqueness of GLCs, in which the government has control over them. Yussof, Ali and Ghani (2020) also argue that GLCs should act as the role model for all the listed companies as GLCs are expected to implement government policies and strengthen the economy. Similarly, Nasir, Hassan and Tijani (2020) show that GLCs should be the market leaders in order to enhance the governance framework in Malaysia. They demonstrate that GLCs transformation brings significant benefits to the society. Therefore, there is a need to examine the bipolar view in convincing the GLCs to comply with the best practices of governance and SDGs. GLCs are expected to serve the nations rather than maintain high profits. Furthermore, the limited study focuses on the GLCs, which is a gap in academic research that needs to be filled.

From previous studies, the adoption of SDGs has undoubtedly contributed to the financial market and company performances. Johari and Komathy (2019) examine the adoption of sustainability reporting of the top 100 listed companies and show that companies with higher compliance with SDGs result in a higher return on assets, return on equity, earnings per share, dividend per share and stock return. Similarly, Ifada, Indriastuti, Ibrani and Setiawanta (2021) argue that environmental disclosure, especially the higher voluntary disclosure, is positively correlated to profit margin. The adoption of SDGs is widely examined in developed countries, especially in US, UK, Canada and Singapore, as these countries have a long history of implementing CG practices. Singapore has issued the Code of Corporate Governance since 2001, similar to US (2002), UK (1992) and Canada (2003). Therefore, it would be interesting to benchmark the impact of CG and SDGs on Malaysian GLCs to listed companies in developed countries. This is because a limited number of GLCs are available in developed countries.

The impact of CG and SDGs is widely proven in developed countries. Muhmad and Muhamad (2021) examine the corporate governance practice of Singapore and argue that GLCs have higher cash flow and valuations than non-GLCs companies due to better practices

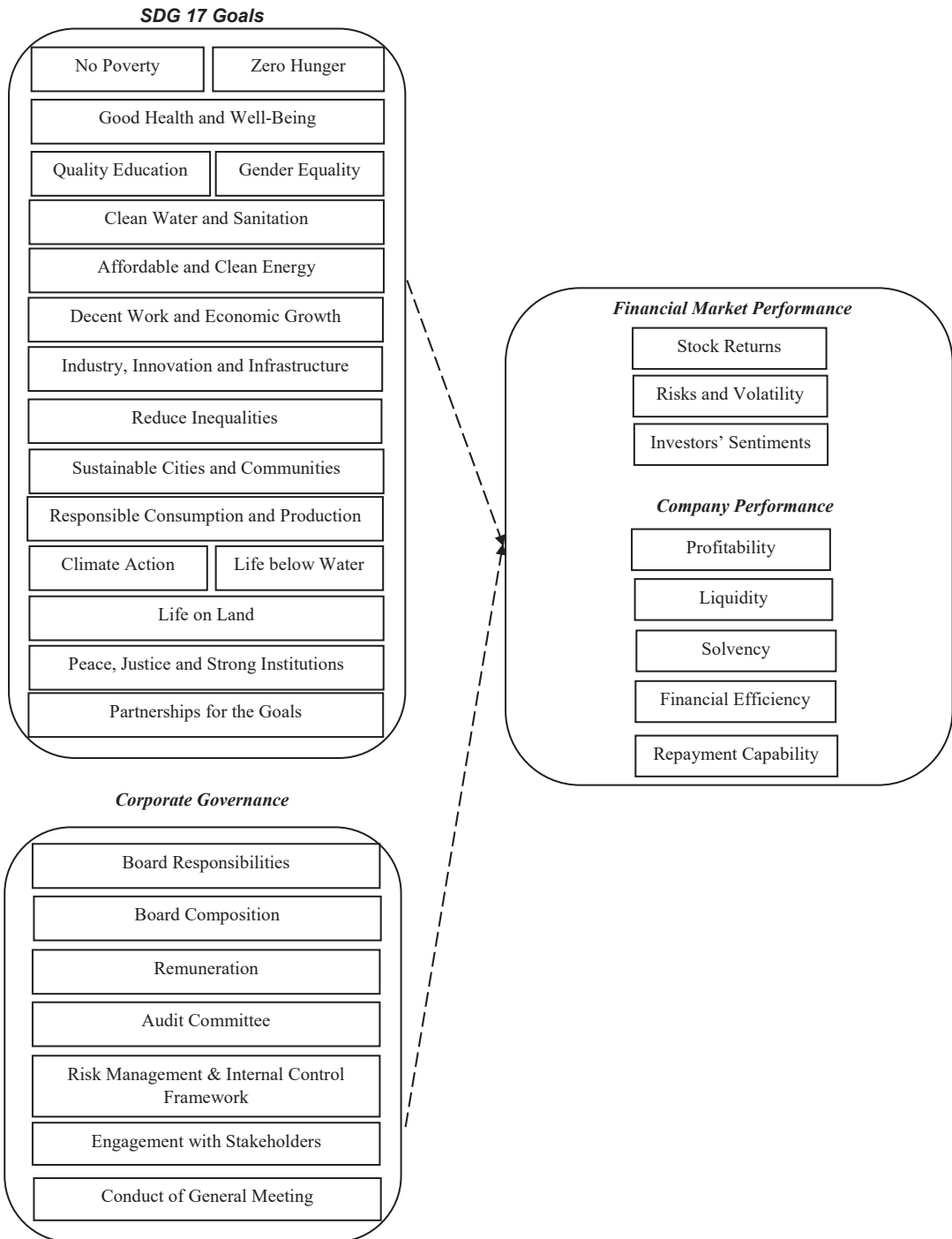
of governance and SDGs. Besides, Sarkodie, Adams and Leirvik (2020) compare UK and US firms' CG and SDG practices and show that investors value the companies' social and environmental behaviour as materials for investment decisions. This is because the investors have long-term considerations to trust the companies to behave morally to reduce their investment risk. Ghouma, Ben-Nasr and Yan (2018) argue that Canadian firms with better practices of governance and SDGs seem to reduce the cost of debt financing due to higher protection of investors' rights to reduce agency problems within firms. These studies show that the practices of governance and SDGs in developed countries can assist in improving the financial market and company performances. Nonetheless, no comparative study investigates the gaps between Malaysian GLCs and companies in developed countries.

Hence, this study examines the impact of governance and SDGs on the financial market and company performances of Malaysian GLCs, as no study has looked at it due to data limitations. This is depicted in Figure 1 below. Although the United Nations has consistently published the public governance and SDGs experience of OECD countries, the information on the comparative analysis of GLCs of different countries remains limited. In this context, this study proposes to examine the practices of Malaysian GLCs compared to those of developed countries such as the UK, US, Canada and Singapore. It allows this study to identify the best practices of other developed countries, which have the potential to be implemented in Malaysian GLCs. Based on the above discussion, this study proposes the following hypotheses and research framework:

H1: The compliance of CG and SDGs is significantly correlated to financial market and company performances of Malaysian GLCs, UK, US Canada and Singapore listed companies.

H1(a): The compliance of CG and SDG is significantly correlated to stock return, volatility, investor sentiment, profitability, liquidity, solvency, financial efficiency and repayment capability of Malaysian GLCs, UK, US Canada and Singapore listed companies.

Figure 1: Research Framework



3. Methodology

3.1 Data and Sampling

This study selects 54 government-linked publicly listed companies. The total number of publicly listed companies in Bursa Malaysia (Malaysia Stock Exchange) is 927. Government-linked companies (GLCs) refer to publicly listed companies in which the government owns the majority or single biggest stake and has the power to exercise or influence significant decisions. GLCs held a more significant position than publicly listed companies in serving the nation's interests. Generally, GLCs play a vital role in serving the country, and their CG and SDG practices are critical in driving social and economic advancements. As for the corresponding developed countries, the following total number of listed companies have been selected: US (New York Stock Exchange: 1392 companies), UK (London Stock Exchange: 1215 companies), Canada (Toronto Stock Exchange: 1412 companies) and Singapore (Singapore Exchange: 429 companies). This is because developed markets have fewer GLCs than Malaysia, and it would be biased if this study benchmarked the GLCs with limited samples. Hence the decision to benchmark GLCs in Malaysia against public listed companies in the developed countries.

S&P Capital IQ Database collects information such as stock prices, volatility, investors' sentiment, trading volume and market capitalisation. The research timeframe is from 1-January-2017 to 31-December-2021. For the compliance of CG and SDGs, this study collects data from the disclosure of annual reports and corporate governance reports, which are published yearly in the stock exchange for each company.

3.2 Corporate Governance

Seven types of CG components are selected, which are board responsibilities, board composition, remuneration, audit committee, risk management and internal control, engagement with stakeholders and conduct of general meeting. All CG variables are proxied by dummy variable with 1 as full compliance to 0 as partial and non-compliance based on the practices as outlined in the MCCG 2017. Table 1 summarises the description and related studies of CG components.

Table 1: Variables of Corporate Governance

Variables	Description	Literature
Board Responsibilities	The board is accountable for long-term performances and delivering long-term value to its stakeholders. The board members govern and define the strategic direction of the companies.	Baharudin and Marimuthu (2019)

Variables	Description	Literature
Board Composition	The board consists of suitable candidates with a mix of skills, competencies, backgrounds, professional qualifications and knowledge.	Baharudin and Marimuthu (2020)
Remuneration	Directors' remuneration is well structured and disclosed in the annual report.	Mumu, Saona, Russell and Azad (2021)
Audit Committee	The Audit Committee can add the necessary openness, concentration, and independent judgement to the financial reporting process.	Abdullah and Ismail (2018)
Risk Management & Internal Control	Internal control and risk management framework is implemented within the company.	Nasution (2019)
Engagement with Stakeholders	Channels are available to provide continuous involvement and communication with stakeholders.	Hamad, Draz and Lai (2020)
Conduct of General Meeting	General meetings encourage and assist shareholders in exercising their ownership rights and communicating to the board and senior management.	Ariffin, Hussain and Malak (2019)

3.3 Sustainable Development Goals

Seventeen SDGs are selected based on the 2030 Agenda for Sustainable Development outlined by the United Nations. A dummy variable is used to proxy for the adoption of SDGs namely 1 as adoption and 0 as non-adoption based on the annual report and sustainability reporting disclosure. Table 2 summarises the description and related studies of 17 SDGs:

Table 2: Variables of Sustainable Development Goals

Variables	Description	Literature
SDG 1: No Poverty	End poverty in all its forms everywhere.	Sengupta (2018)
SDG 2: Zero Hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	Herrmann and Rundshagen, (2020)
SDG 3: Good Health and Well-Being	Ensure healthy lives and promote well-being for all at all ages.	Asi and Williams (2018)
SDG 4: Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	Ferguson and Rooft (2020)
SDG 5: Gender Equality	Achieve gender equality and empower all women and girls.	Eden and Wagstaff (2021)
SDG 6: Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all.	Ortigara, Kay and Uhlenbrook (2018)

SDG 7: Affordable and Clean Energy	Ensure access to affordable, reliable, sustainable and modern energy for all.	Salvia and Brandli (2020)
SDG 8: Decent Work and Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	Rai, Brown and Ruwanpura (2019)
SDG 9: Industry, Innovation And Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.	Kynčlová, Upadhyaya and Nice (2020)
SDG 10: Reduced Inequalities	Reduce inequality within and among countries.	Kuhn (2020)
SDG 11: Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient and sustainable.	Koch and Krellenberg (2018)
SDG 12: Responsible Consumption and Production	Ensure sustainable consumption and production patterns.	Gasper, Shah and Tankha (2019)
SDG 13: Climate Action	Take urgent action to combat climate change and its impacts.	Campbell, Hansen, Rioux, Stirling and Twomlow (2018)
SDG 14: Life Below Water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development.	Virto (2018)
SDG 15: Life On Land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	Liu, Bai and Chen (2019)
SDG 16: Peace, Justice and Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	El Baradei (2020)
SDG 17: Partnerships For the Goals	Strengthen the means of implementation and revitalise the global partnership for sustainable development.	Franco and Abe (2020)

3.4 Panel Data Regression

This study employs panel data regression to examine the impact of CG and SDG on the financial market and company performances. For financial market performance, three variables are selected, which are stock-return, volatility and investors' sentiment. For company performance, profitability, liquidity, solvency, financial efficiency and repayment capacity are chosen. Panel data regression is adopted due to its capability to capture cross-sectional and time-series analyses, which is more efficient than OLS regression (Loang & Ahmad, 2021). The fixed-effect and random-effect models also allow the panel data regression to address the unobserved variables that may fall outside CG and SDG and increase explanatory power. This study establishes the following panel data regression:

Financial Market Performance

Stock Return Model:

$$SR_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Volatility Model:

$$Vola_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Investor Sentiment Model:

$$IS_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Company Performance

Profitability Model:

$$Pro_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Liquidity Model:

$$Liq_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Solvency Model:

$$Sol_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Financial Efficiency Model:

$$FE_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Repayment Capacity Model:

$$RC_{i,t} = BR_{i,t} + BC_{i,t} + R_{i,t} + AC_{i,t} + RM_{i,t} + ES_{i,t} + GM_{i,t} + NP_{i,t} + ZH_{i,t} + GH_{i,t} \\ + QE_{i,t} + GE_{i,t} + CW_{i,t} + CE_{i,t} + DW_{i,t} + III_{i,t} + RI_{i,t} + SC_{i,t} + RC_{i,t} \\ + CA_{i,t} + LW_{i,t} + LL_{i,t} + BR_{i,t} + PJ_{i,t} + PG_{i,t} + MarCap_{i,t} + Vol_{i,t}$$

Where, $SR_{i,t}$ is the stock return of firm i at time t , $Vol_{i,t}$ is the three month stock price volatility of firm i at time t , $IS_{i,t}$ is the investor sentiment proxied by Bursa Malaysia market return of firm i at time t , $Pro_{i,t}$ is the profitability measured by net profit margin of firm i at time t , $Liq_{i,t}$ is the liquidity measured by current ratio of firm i at time t , $So_{i,t}$ is the solvency measured by debt-to-equity ratio of firm i at time t , $FE_{i,t}$ is the financial efficiency measured by efficiency ratio of firm i at time t , $RC_{i,t}$ is the repayment capacity measured by coverage ratio of firm i at time t , $MarCap_{i,t}$ is the market capitalisation of firm i at time t and $Vol_{i,t}$ is the trading volume of firm i at time t . The comparison between various models can provide comprehensive empirical evidence to indicate the impact of CG and SDG on the financial market and company performances.

4. Results and Discussion

4.1 Estimate the Impact of CG and SDG

In examining the impact of CG on financial market and company performances, this study generates eight panel data regression models, which are stock return, volatility, investor sentiment, profitability, liquidity, solvency, financial efficiency and repayment capacity models. These models aim to provide comprehensive evidence to examine the outcome of the adoption of CG and SDG. Hausman test is used to determine the selection between fixed-effect and random-effect models for panel data regression. The fixed-effect model controls for the effects of time-invariant variables, while the random-effect model hypothesises that individual characteristics are not associated with the dependent variable (Loang & Ahmad, 2022). Hausman test is hypothesised as follows:

$$H_0 : Cov(\lambda_i, X_{it}) = 0 \text{ (No correlation between } \lambda_i \text{ and } X_{it} \text{ – Random Effect)}$$
$$H_1 : Cov(\lambda_i, X_{it}) \neq 0 \text{ (Correlation between } \lambda_i \text{ and } X_{it} \text{ – Fixed Effect)}$$

In detecting the existence of heteroscedasticity, White Test is adopted. Heteroscedasticity exists when the standard deviations of a predicted variable are non-constant when measured across changing values of an independent variable across periods. White Test examines if the values of the independent variable in the regression affect the variance of regression errors. In this context, heteroscedasticity occurs when the p-value of heteroscedasticity is less than 0.05. The results in Table 4 indicate that volatility and investor sentiment models are fixed-effect models, while stock return, profitability, liquidity and solvency models are random-effect models. No evidence of heteroscedasticity is detected in all models.

Table 4 summarises the results of the impact of CG and SDG on the financial market and company performances. The result shows that the volatility and investor sentiment models are appropriate for employing a fixed-effect model with Hausman p-values less than 5% significant level. On the other hand, stock return, profitability, liquidity, solvency, financial efficiency and repayment capacity models adopt a random-effect model with Hausman p-values more than 0.05.

Table 4 (a) outlines the results of stock return and volatility models, while table 4 (b) shows the results of investor sentiment and profitability models. The stock return model shows that Malaysia and Singapore have similar CG (audit committee) variables, and SDG (SDG 8: decent work and economic growth; SDG 11: sustainable cities and communities; SDG 13: climate action) are positively significant to stock return. It indicates that the GLCs, which adopt the CG practice in audit committee and SDG 8, 11 and 13 can result in better stock return. Nonetheless, the developed countries such as UK, US and Canada have presented different results in showing that board responsibilities, remuneration, engagement with stakeholders for CG variables and SDG 4: quality education, SDG 10: reduce inequality also can result in higher stock return.

The volatility and investor sentiment models show that remuneration is the only variable that significantly affects volatility and investor sentiment in trading for all countries. This is because directors' remuneration significantly reduces the retained earnings of listed companies to be distributed as dividends. Besides, the profitability model shows that risk management and internal control and SG 11: sustainable cities and communities are found to be significant to the profitability of GLCs in Malaysia at the significant level of 1%, 5% and 10%. The result implies that GLCs with better internal control and risk management framework can yield more profit than those non-compliant companies. Nevertheless, the result of UK, US, Canada and Singapore show that other variables such as board responsibilities and SDG 17: partnership for goals also can affect the profitability of publicly listed companies.

The result of this study is consistent with El-Bassiouny and El-Bassiouny (2018) in which they argue that Egypt, as a developing country, has less sophisticated CG and SDG practices than developed countries such as Germany and US. Hence, the impact of CG and SDG practices is more pronounced in developed countries. One of the possible reasons is the higher level of market efficiency in developed countries compared to developing countries (Mertzanis, Basuony & Mohamed, 2019). In accordance with the Efficient Market Hypothesis, efficient markets shall reflect all public and private available information in the financial markets. In this context, the developing countries, which are assumed to be less efficient, are slow to reflect the impact of CG and SDG on stock return, volatility and investor sentiment. This argument can be validated by Malaysia's short history of implementing CG and SDG practices than the developed countries. Furthermore, the finding indicates that greater adoption of CG and SDG good practices can lead to higher profitability for GLCs and listed companies. This result is advocated by the finding of Khaled, Ali and Mohamed (2021) in which they argue that profitable and larger size companies tend to exhibit greater social responsibilities and internal controls. One possible explanation is that good CG and SDG practices can lead to sophisticated risk management and internal controls that mitigate business risks, which result in higher profit.

Table 4(c) demonstrates the results of liquidity and solvency models. The empirical evidence suggests that the audit committee significantly impacts the liquidity and solvency of GLCs in Malaysia. Other than the audit committee, engagement with stakeholders and conduct of general meeting are also significantly correlated to the liquidity and solvency of the

publicly listed companies in the US, UK, Canada and Singapore. Surprisingly, the adoption of SDG has no impact on liquidity and solvency. Table 4(d) summarises the results of financial efficiency and repayment models. The result shows that audit committee, risk management, and internal control are the CG variables that are significant to financial efficiency and repayment in Malaysian GLCs. All variables of SDG are insignificant. Apart from that, the developed countries show that other variables such as remuneration and SDG 17: partnerships for the goals are significant to financial efficiency and repayment in publicly listed companies.

The result of this study indicates that the liquidity, solvency, financial efficiency and repayment capability of Malaysian GLCs are significantly affected by CG adoption. No evidence of SDGs is found to impact the dependent variables in Malaysia, in contrast to the findings for the UK, US, Canada and Singapore. This finding is consistent with the study of Martínez Martín-Cervantes and del Mar Miralles-Quirós (2022) in which they show that the impact of SDG is stronger in developed countries than in developing countries. One potential reason is that SDG adoption in developing countries is not as widely accepted as in developed countries. This is because compliance with SDG is expensive for every listed company. The comparison between the incurred costs and benefits of SDG adoption cannot be quantified in the financial statement, which is a detriment to shareholders. Hence, the impact of SDG on the listed company in developing countries is not as pronounced as in developed countries.

Table 4(a): Impact of CG and SDG on Stock Return and Volatility Models

Variables	Stock Return					Volatility				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect
Constant	-0.046	-0.084	-0.073	0.013	0.004	-0.860	-0.076	-0.619	0.014	0.513
Corporate Governance										
Board Responsibilities	-0.146	-0.857*	-0.174*	-0.383	-0.249	0.623	0.056	0.016	0.051	0.134
Board Composition	0.121	0.530	0.181	0.931	0.123	0.546	0.573	0.762	0.583	0.681
Remuneration	0.060	0.027*	0.133**	0.134*	0.561	0.355	0.401	0.181	0.573	0.006
Audit Committee	0.179***	0.001	0.083	0.013	0.153**	0.374**	0.941**	0.781*	0.542**	0.687***
Risk Management & Internal Control	-0.111	-0.438	-0.130	-0.351	-0.152	0.191	0.174	0.752	0.147	0.074
Engagement with Stakeholders	0.027	0.062**	0.025*	0.152**	0.482	0.510	0.006	0.064	0.148	0.681
Conduct of General Meeting	0.046	0.014	0.103	0.241	0.425	-0.439	-0.072	-0.586	-0.056	-0.153
Sustainable Development Goals										
SDG 1: No Poverty	0.048	0.169	0.001	0.048	0.468	0.004	0.048	0.164	0.012	0.041
SDG 2: Zero Hunger	0.029	0.017	0.008	0.018	0.049	0.008	0.018	0.019	0.004	0.139
SDG 3: Good Health and Well-Being	0.038	0.122	0.001	0.048	0.411	-0.004	-0.048	-0.122	-0.001	-0.014
SDG 4: Quality Education	0.102	0.085***	0.002***	0.401***	0.085	0.001	0.401	0.045	0.022	0.102

SDG 5: Gender Equality	0.032	0.018	0.002	0.041	0.048	-0.001	-0.041	-0.014	-0.022	-0.012
SDG 6: Clean Water and Sanitation	0.028	0.159	0.001	0.018	0.458	0.004	0.018	0.154	0.023	0.024
SDG 7: Affordable and Clean Energy	0.001	0.077	0.003	0.004	0.099	-0.013	-0.004	-0.099	-0.213	-0.001
SDG 8: Decent Work and Economic Growth	0.005*	0.064	0.001	0.005	0.037*	-0.013	-0.005	-0.253	-0.001	-0.005
SDG 9: Industry, Innovation and Infrastructure	0.032	0.092	0.003	0.071	0.081	0.014	0.071	0.042	0.022	0.012
SDG 10: Reduce Inequalities	0.079	0.002**	0.004*	0.098**	0.001	-0.007	-0.098	-0.001	-0.021	-0.094
SDG 11: Sustainable Cities and Communities	0.050**	0.053	0.001	0.005	0.057*	-0.007	-0.025	-0.051	-0.104	-0.05
SDG 12: Responsible Consumption and Production	0.090	0.020	0.009	0.018	0.01	-0.008	-0.018	-0.101	-0.043	-0.04
SDG 13: Climate Action	0.030***	0.160	0.001	0.007	0.73*	0.007	0.07	0.16	0.014	0.01
SDG 14: Life below Water	0.011	0.202	0.001	0.077	0.101	0.007	0.012	0.101	0.011	0.011
SDG 15: Life on Land	-0.002	-0.106	-0.002	-0.001	-0.703	-0.001	-0.001	-0.106	-0.025	-0.001
SDG 16: Peace, Justice and Strong Institutions	-0.015	-0.010	-0.001	-0.045	-0.04	-0.004	-0.045	-0.012	-0.001	-0.015

Variables	Stock Return					Volatility				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect
SDG 17: Partnerships for the goals	0.036	-0.048	-0.005	0.046	-0.048	-0.005	0.046	-0.014	-0.005	0.016
Control Variables										
Market Capitalisation	0.000*	0.001*	0.013	0.001*	0.002	0.003*	0.051	0.000	0.001*	0.081
Volume	0.838*	0.143	0.582	0.274	0.868	-0.960*	-0.174	-0.001	-0.374*	-0.183
Specification										
R-squared	0.597	0.572	0.482	0.567	0.624	0.396	0.364	0.484	0.366	0.444
Hausman Test	0.793	0.284	0.672	0.284	0.843	0.005	0.014	0.048	0.023	0.009
White Test	0.862	0.582	0.186	0.374	0.205	0.864	0.384	0.186	0.364	0.403

Note: ***, ** and * represent significant at 1, 5 and 10 per cent.

Table 4(b): Impact of CG and SDG on Investor Sentiment and Profitability Models

Variables	Investor Sentiment					Profitability				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect
Constant	-0.000	0.081	0.005	0.014	0.005	0.083	0.011	0.009	0.014	0.009
Corporate Governance										
Board Responsibilities	0.006	0.003	0.001	0.000	0.005	0.008	0.003**	0.001*	0.000*	0.009**
Board Composition	-0.003	-0.014	-0.153	-0.163	-0.064	-0.003	-0.014	-0.193	-0.183	-0.084
Remuneration	0.002*	0.000**	0.001*	0.004**	0.153***	0.002	0.000	0.001	0.004	0.193
Audit Committee	0.001	0.005	0.002	0.145	0.051	0.001	0.009	0.002	0.149	0.091
Risk Management & Internal Control	-0.001	-0.062	-0.153	-0.524	-0.253	0.001**	0.082*	0.193**	0.924*	0.293***
Engagement with Stakeholders	-0.001	-0.002	-0.005	-0.004	-0.004	-0.001	-0.002	-0.009	-0.004	-0.004
Conduct of General Meeting	0.002	0.005	0.004	0.001	0.000	0.002	0.009	0.004	0.001	0.000
Sustainable Development Goals										
SDG 1: No Poverty	0.338	0.369	0.003	0.338	0.668	0.004	0.048	0.164	0.012	0.041
SDG 2: Zero Hunger	0.029	0.039	0.008	0.038	0.339	0.008	0.038	0.038	0.002	0.139
SDG 3: Good Health and Well-Being	-0.038	-0.322	-0.003	-0.338	-0.633	-0.004	-0.028	-0.322	-0.003	-0.014

Variables	Investor Sentiment					Profitability				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Fixed-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect
SDG 4: Quality Education	0.302	0.088	0.002	0.603	0.088	0.001	0.403	0.025	0.011	0.101
SDG 5: Gender Equality	-0.032	-0.038	-0.002	-0.333	-0.338	-0.001	-0.023	-0.034	-0.011	-0.011
SDG 6: Clean Water and Sanitation	0.028	0.389	0.003	0.038	0.688	0.004	0.038	0.354	0.013	0.014
SDG 7: Affordable and Clean Energy	-0.003	-0.099	-0.001	-0.033	-0.099	-0.013	-0.002	-0.038	-0.133	-0.001
SDG 8: Decent Work and Economic Growth	-0.005	-0.064	-0.001	-0.005	-0.039	-0.013	-0.005	-0.253	-0.003	-0.005
SDG 9: Industry, Innovation and Infrastructure	0.032	0.092	0.001	0.091	0.081	0.014	0.073	0.022	0.031	0.041
SDG 10: Reduce Inequalities	-0.099	-0.002	-0.011	-0.098	-0.003	-0.007	-0.038	-0.003	-0.013	-0.094
SDG 11: Sustainable Cities and Communities	-0.07	-0.073	-0.003	-0.07	-0.079	0.007**	0.087**	0.073*	0.302**	0.07**
SDG 12: Responsible Consumption and Production	-0.09	-0.02	-0.009	-0.08	-0.03	-0.008	-0.08	-0.03	-0.33	-0.09
SDG 13: Climate Action	0.003	0.016	0.003	0.009	0.093	0.007	0.07	0.016	0.029	0.002

SDG 14: Life below Water	0.031	0.202	0.023	0.099	0.103	0.007	0.022	0.102	0.021	0.021
SDG 15: Life on Land	-0.002	-0.103	-0.002	-0.002	-0.902	-0.002	-0.002	-0.103	-0.027	-0.002
SDG 16: Peace, Justice and Strong Institutions	-0.027	-0.02	-0.002	-0.127	-0.12	-0.004	-0.047	-0.012	-0.001	-0.017
SDG 17: Partnership for the goals	0.023	-0.128	-0.007	0.123	-0.128	-0.007	0.043**	-0.014**	-0.007**	0.013**
Control Variables										
Market Capitalisation	0.000*	0.000	0.000	0.000*	0.000*	0.009	0.002	0.004	0.006**	0.000**
Volume	0.005*	0.014	0.005***	0.005	0.002	0.131*	0.014	0.005	0.009	0.002
Specification										
R-squared	0.384	0.525	0.593	0.493	0.385	0.314	0.629	0.623	0.423	0.519
Hausman Test	0.013	0.038	0.002	0.000	0.029	0.213	0.912	0.932	0.839	0.982
White Test	0.742	0.572	0.878	0.682	0.782	0.342	0.932	0.131	0.812	0.312

Note: ***, ** and * represent significant at 1, 5 and 10 per cent.

Table 4(c): Impact of CG and SDG on Liquidity and Solvency Models

Variables	Liquidity					Solvency				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect
Constant	0.000	0.051	0.007	0.013	0.007	0.153	0.205	0.011	0.043	0.003
Corporate Governance										
Board Responsibilities	0.003	0.003	0.001	0.000	0.007	0.005	0.003	0.001	0.000	0.001
Board Composition	0.003	0.013	0.173	0.133	0.033	0.003	0.013	0.113	0.153	0.053
Remuneration	0.005	0.000	0.001	0.003	0.173	0.005	0.025	0.001	0.003	0.113
Audit Committee	0.001*	0.007**	0.005*	0.137*	0.071**	0.001**	0.001**	0.005*	0.131*	0.011***
Risk Management & Internal Control	0.001	0.035	0.173	0.753	0.573	0.001	0.055	0.113	0.153	0.513
Engagement with Stakeholders	0.001	0.005*	0.007**	0.003*	0.003*	0.001	0.005**	0.001*	0.003*	0.003*
Conduct of General Meeting	0.005	0.007*	0.003*	0.001*	0.000**	0.005	0.001*	0.003**	0.001*	0.000*
Sustainable Development Goals										
SDG 1: No Poverty	0.118	0.169	0.001	0.115	0.665	0.004	0.045	0.164	0.012	0.041
SDG 2: Zero Hunger	0.029	0.019	0.008	0.015	0.339	0.005	0.035	0.035	0.002	0.139
SDG 3: Good Health and Well-Being	-0.018	-0.122	-0.001	-0.115	-0.633	-0.004	-0.025	-0.222	-0.002	-0.056
SDG 4: Quality Education	0.102	0.088	0.002	0.601	0.055	0.001	0.402	0.022	0.011	0.505

SDG 5: Gender Equality	-0.012	-0.018	-0.002	-0.111	-0.335	-0.001	-0.022	-0.024	-0.011	-0.055
SDG 6: Clean Water and Sanitation	0.028	0.189	0.001	0.015	0.655	0.004	0.025	0.625	0.012	0.056
SDG 7: Affordable and Clean Energy	-0.001	-0.099	-0.001	-0.011	-0.099	-0.013	-0.002	-0.025	-0.122	-0.005
SDG 8: Decent Work and Economic Growth	-0.005	-0.064	-0.001	-0.005	-0.039	-0.013	-0.002	-0.252	-0.002	-0.005
SDG 9: Industry, Innovation and Infrastructure	0.012	0.092	0.007	0.097	0.087	0.014	0.072	0.022	0.011	0.055
SDG 10: Reduce Inequalities	-0.099	-0.002	-0.077	-0.098	-0.003	-0.007	-0.028	-0.043	-0.012	-0.096
SDG 11: Sustainable Cities and Communities	-0.007	-0.071	-0.007	-0.07	-0.079	-0.007	-0.07	-0.072	-0.202	-0.017
SDG 12: Responsible Consumption and Production	-0.019	-0.02	-0.009	-0.08	-0.03	-0.008	-0.078	-0.032	-0.622	-0.029
SDG 13: Climate Action	0.01	0.16	0.007	0.019	0.093	0.007	0.037	0.106	0.029	0.002
SDG 14: Life below Water	0.031	0.202	0.083	0.088	0.703	0.006	0.044	0.102	0.021	0.021
SDG 15: Life on Land	-0.002	-0.103	-0.008	-0.008	-0.804	-0.004	-0.004	-0.103	-0.026	-0.002

Variables	Liquidity					Solvency				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect
SDG 16: Peace, Justice and Strong Institutions	-0.026	-0.02	-0.008	-0.786	-0.74	-0.004	-0.046	-0.012	-0.001	-0.016
SDG 17: Partnership for the goals	0.023	-0.128	-0.006	0.783	-0.788	-0.006	0.043	-0.014	-0.006	0.013
Control Variables										
Market Capitalisation	0.005	0.013	0.025**	0.036**	0.071	0.001*	0.005*	0.003	0.003	0.001
Volume	0.535*	0.313	0.131*	0.007	0.005	0.131	0.003**	0.109***	0.001*	0.005
Specification										
R-squared	0.353	0.457	0.413	0.313	0.357	0.313	0.551	0.553	0.353	0.411
Hausman Test	0.553	0.741	0.735	0.337	0.735	0.562	0.175	0.185	0.631	0.155
White Test	0.335	0.774	0.135	0.355	0.355	0.335	0.135	0.331	0.515	0.315

Note: ***, ** and * represent significant at 1, 5 and 10 per cent.

Table 4(d): Impact of CG and SDG on Financial Efficiency and Repayment Models

Variables	Financial Efficiency					Repayment				
	Malaysia Random- Effect	UK Random- Effect	US Random- Effect	Canada Random- Effect	Singapore Random- Effect	Malaysia Random- Effect	UK Random- Effect	US Random- Effect	Canada Random- Effect	Singapore Random- Effect
Constant	0.000	0.081	0.006	0.017	0.006	0.087	0.011	0.001	0.017	0.001
Corporate Governance										
Board Responsibilities	0.009	0.009	0.001	0.053	0.006	0.008	0.009	0.001	0.000	0.001
Board Composition	0.009	0.019	0.169	0.199	0.099	0.009	0.019	0.119	0.189	0.089
Remuneration	0.008	0.000*	0.001*	0.024*	0.169**	0.008	0.000*	0.001*	0.024**	0.119**
Audit Committee	0.046**	0.006**	0.008*	0.196**	0.034*	0.046**	0.053*	0.008*	0.191**	0.011***
Risk Management & Internal Control	0.063***	0.098*	0.169*	0.249**	0.869*	0.063***	0.088*	0.119*	0.152*	0.819*
Engagement with Stakeholders	0.002	0.008	0.012	0.036	0.009	0.265	0.008	0.001	0.009	0.009
Conduct of General Meeting	0.024	0.015	0.024	0.013	0.064	0.008	0.143	0.005	0.149	0.063
Sustainable Development Goals										
SDG 1: No Poverty	0.11	0.169	0.001	0.114	0.665	0.004	0.045	0.164	0.012	0.041
SDG 2: Zero Hunger	0.009	0.019	0.000	0.014	0.337	0.005	0.035	0.025	0.002	0.139
SDG 3: Good Health and Well-Being	-0.01	-0.1	-0.001	-0.114	-0.633	-0.004	-0.025	-0.222	-0.002	-0.056
SDG 4: Quality Education	0.133	0.003	0.002	0.601	0.055	0.002	0.402	0.022	0.011	0.505

Variables	Financial Efficiency					Repayment				
	Malaysia	UK	US	Canada	Singapore	Malaysia	UK	US	Canada	Singapore
Model	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect	Random-Effect
SDG 5: Gender Equality	-0.01	-0.01	0.013	-0.111	-0.335	-0.002	-0.022	-0.024	-0.011	-0.055
SDG 6: Clean Water and Sanitation	0.022	0.129	0.001	0.014	0.655	0.004	0.025	0.925	0.012	0.056
SDG 7: Affordable and Clean Energy	-0.001	-0.163	-0.001	-0.011	-0.077	-0.023	-0.002	-0.025	-0.022	-0.005
SDG 8: Decent Work and Economic Growth	-0.004	-0.064	-0.001	-0.004	-0.037	-0.023	-0.002	-0.252	-0.002	-0.005
SDG 9: Industry, Innovation and Infrastructure	0.012	0.092	0.003	0.073	0.088	0.074	0.082	0.022	0.023	0.055
SDG 10: Reduce Inequalities	-0.099	-0.002	-0.033	-0.072	-0.003	-0.008	-0.028	-0.047	-0.002	-0.096
SDG 11: Sustainable Cities and Communities	-0.03	-0.031	-0.003	-0.03	-0.089	-0.008	-0.08	-0.072	-0.202	-0.070
SDG 12: Responsible Consumption and Production	-0.09	-0.02	-0.009	-0.02	-0.03	-0.008	-0.08	-0.023	-0.225	-0.004
SDG 13: Climate Action	0.137	0.76	0.007	0.091	0.093	0.007	0.07	0.09	0.024	0.002
SDG 14: Life below Water	0.037	0.202	0.083	0.088	0.703	0.006	0.044	0.002	0.102	0.021

SDG 15: Life on Land	-0.002	-0.703	-0.008	-0.008	-0.804	-0.004	-0.004	-0.003	-0.066	-0.006
SDG 16: Peace, Justice and Strong Institutions	-0.026	-0.06	-0.008	-0.586	-0.54	0.004	0.046*	0.006*	0.103**	0.016**
SDG 17: Partnership for the goals	0.023	-0.768	-0.006	0.583	-0.588	-0.006	0.043	-0.014	-0.006	0.013
Control Variables										
Market Capitalisation	0.010	0.012	0.028	0.046*	0.001**	0.001	0.008	0.007	0.007**	0.001***
Volume	0.848***	0.412	0.141	0.006	0.008	0.171	0.717	0.171	0.001	0.008*
Specification										
R-squared	0.481	0.686	0.614	0.414	0.572	0.672	0.481	0.587	0.587	0.552
Hausman Test	0.884	0.688	0.642	0.516	0.648	0.864	0.148	0.178	0.824	0.483
White Test	0.418	0.648	0.868	0.488	0.424	0.778	0.538	0.171	0.824	0.734

Note: ***, ** and * represent significant at 1, 5 and 10 per cent.

The empirical evidence of this study suggests that not all variables of CG and SDGs are significantly correlated to the financial market and company performance. Board composition as a crucial CG variable to emphasise the appointment of at least 30% women directors does not significantly impact the financial market and company performance. It indicates that the capability of directors in managing companies is unrelated to gender. SDG practices such as SDG 1: no poverty, SDG 2: zero hunger, SDG 3: good health and well-being, SDG 6: clean water and sanitation, SDG 7: affordable and clean energy, SDG 9: industry, innovation and infrastructure, SDG 12: responsible consumption and production, SDG 14: life below water and SDG 15: life on land are considered insignificant to assist companies to improve their financial performances.

5. Conclusion

This study examines the impact of CG and SDG practices on the financial market and company performances in Malaysia as a developing country compared to developed countries such as US, UK, Canada and Singapore. The research timeframe is from 2017 to 2021. For CG practices, seven variables, namely board responsibilities, board composition, remuneration, audit committee, risk management and internal control, engagement with stakeholders and conduct of general meeting are selected based on the MCCG. The seventeen SDG goals are chosen based on the guidelines of the United Nations. For methodology, this study adopts panel data regression – fixed-effect and random-effect models to examine the impact of CG and SDG adoption to control the unobserved variables. Eight panel data models, which are stock return, volatility, investor sentiment, profitability, liquidity, solvency, financial efficiency and repayment capacity models are selected.

For the stock return model, the result implies that the audit committee, SDG 8: decent work and economic growth, SDG 11: sustainable cities and communities and SDG 13: climate action are significant to better stock return. Besides the variables, board responsibilities, remuneration, engagement with stakeholders, SDG 4: quality education and SDG 10: reduce inequality can also affect the stock return in developed countries such as the UK, US and Canada. For volatility and investor sentiment models, remuneration is the only variable that is found to be significantly correlated for all countries. The profitability model shows that risk management and internal control and SDG 11: sustainable cities and communities can assist Malaysian GLCs in gaining more profit. Nonetheless, board responsibilities and SDG 17: partnerships for the goals contribute to the profitability of listed companies in developed countries. The result of this study is consistent with El-Bassiouny and El-Bassiouny (2018) as developed countries have more sophisticated CG and SDG practices than Malaysia. Developed countries also have a higher level of market efficiency to reflect the impact of CG and SDG practices in the financial market. Hence, the impact of CG and SDGs is more pronounced in developed countries.

The audit committee is the only CG variable significantly correlated to the liquidity and solvency of GLCs in Malaysia. In developed countries, engagement with stakeholders and

conduct of general meeting are also found to be significant. Nevertheless, SDG is insignificant to the liquidity and solvency of the companies. Furthermore, audit committee, risk management and internal control, remuneration and SDG 16: partnership for goals are significant to financial efficiency and repayment capability. Board composition, which emphasises the 30% women directors, is insignificant to financial market and company performance. SDG 1, 2, 3, 6, 7, 9, 12, 14 and 15 are insignificant in all models. The result is consistent with Martínez Martín-Cervantes and del Mar Miralles-Quirós (2022), which show that the impact of CG and SDGs is stronger in developed countries than in developing countries. This is because compliance costs are high, and the advantages of adopting CG and SDG practices are difficult to quantify. Therefore, developing countries are not inclined to adopt the best CG and SDG practices.

For practical implementation, the results of this study aid policymakers, regulators and practitioners in enhancing the current CG and SDG practices of Malaysian GLCs. This is because the gaps between the practices of Malaysian GLCs and developed countries have been highlighted in this study. Moreover, this study encourages public and non-GLCs companies to adopt the best practices as it can prove the positive impact of CG and SDGs in increasing the financial market and company performance. For regulation implementation, the results of this study can assist the Bursa Malaysia and Securities Commission in enhancing the framework of MCCG and sustainability reporting by adopting the best practices of developed countries. The results of this study can also serve as supplementary material to the Corporate Governance Guide and Sustainability Reporting Guide to assist publicly listed companies in adhering to comprehensive practices that can benefit society.

One of the limitations of this study is the lack of data to examine the different behaviours of local and foreign investors in trading the companies with and without the compliance of CG and SDG practices. For recommendation, future studies are encouraged to examine the impact of women directors on the financial market and company performance. Additionally, a further study should be conducted to examine the impact of CG and SDG separately on financial market and company performance.

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The Malaysian Public Sector Accounting Standards (MPSAS) Adoption among Malaysian Statutory Bodies: A Literature Review with a Future Research Direction

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Abstract

Purpose: This study reviews literature on accrual accounting implementation in the public sector with a specific focus on studies that are related to Malaysian Public Sector Accounting Standards (MPSAS).

Methodology: 73 journal articles between 1998 and May 2022 were reviewed, in addition to relevant conference papers, government documents, such as circulars, and legal records, including Acts of Parliament or statutes.

Findings: Resultantly, two interrelated gaps in the existing MPSAS adoption literature were revealed. The first gap was due to research scarcity on statutory bodies while the second emanated from legal factors influencing MPSAS adoption among statutory bodies. Accordingly, a future research direction was proposed to investigate the factors influencing the MPSAS adoption level among Malaysian statutory bodies. Simultaneously, several pertinent areas, including degrees of complexity, technical factors, political elements, cultural aspects, and legal facets were highlighted to Malaysian statutory bodies when adopting the MPSAS to enable smooth MPSAS implementation.

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Originality/Value: This review is one of the first to examine literature related to MPSAS as prior reviews were on accrual accounting in the public sector in general or International Public Sector Accounting Standards (IPSAS).

Keywords: Accrual accounting, MPSAS, statutory bodies, Malaysia.

1. Introduction

Adopting accrual accounting in the public sector is a paradigm shift from bureaucracy to a managerial approach worldwide. The international development was owing to the introduction of New Public Management (NPM), which emphasises improvements in governmental planning, control, transparency, and accountability (Connoly, 2006; Lapsley & Miller, 2019), specifically financial management. Hoque et al. (2004) asserted that the PSAA adoption was conducive to enhanced efficiency, effectiveness, and accountability by improving budgetary capabilities in governmental programmes and services. Correspondingly, governmental accrual accounting was formalised by adhering to the International Public Sector Accounting Standards (IPSASs) established by the Public Sector Committee (PSC) of the International Federation of Accountants (IFAC). The IPSASs are based on international private-sector accounting standards stipulated by global organisations, such as the European Union, the North Atlantic Treaty Organization (NATO), and the Organisation for Economic Co-operation and Development (OECD) with relevant inputs from other countries, including Australia and South Africa. Generally, IPSASs focus on financial statements at various governmental levels, particularly spending limits and accountability to ensure adequate cash flows and balances (Gigli & Mariani, 2018; Guthrie, 1998; Keerasuntonpong et al., 2019).

Public sector performance involves outputs, efficiency, results, and outcomes of pertinent programmes and activities. Simultaneously, public sector performance encompasses managers' accountability in terms of the entire operational cost, consideration of long-term obligations, and overall financial position (Birdsall, 2018; Lapuente & van de Walle, 2020). To ensure optimal public sector performance, accrual accounting is integral to providing an accurate assessment of service provision expenditures and programme or activity effectiveness in different nations, including Malaysia. To formalise governmental accrual accounting, the Malaysian federal government implemented a localised IPSAS variant, namely the Malaysian Public Sector Accounting Standards (MPSASs), with a planned complete adoption on 1 January 2015. Nonetheless, comprehensive MPSAS adoption occurred subsequently due to a series of postponements (Ismail et al., 2018; Ismail, 2022) to account for concerns about expenditures on public outlays through tax revenues. Notwithstanding, the government reassured that the public spending was negligible to the anticipated positive social outcome. Moreover, cash-based accounting remained an important foundation for macroeconomic analyses. Nevertheless, accrual accounting

acceptance in the public sector gradually increased when a more efficient government observably practised systematic financial management.

Based on current literature, accrual accounting was primarily developed for private enterprises with commercial business objectives to measure financial efficiency. Nevertheless, accrual accounting adoption in the public sector is an initiative to improve financial reporting quality and transparency (Azhar et al., 2022). Despite the MPSAS development with significant effects on the functions and roles of public sector entities, limited studies appraised the application effectiveness and consequences for statutory bodies. Furthermore, the MPSAS adoption level among statutory bodies was not optimal, which inspired this study to review relevant studies before suggesting a pertinent research direction to assess the factors influencing the MPSAS adoption degree in Malaysia. Resultantly, several pivotal areas were highlighted to the Malaysian statutory bodies in adopting MPSASs. The subsequent study section outlines the research methodology employed to achieve the study objectives, followed by reporting the current findings with relevant discussions and concluding remarks.

2. Research Methodology

The present study employed a two-step research methodology, wherein the first step developed a review protocol encompassing database selection, research time frame, search fields, language, document types, and keywords. Specifically, five popular databases, namely Emerald, ScienceDirect, Wiley, Taylor and Francis, and Sage, comprising studies from 1990 to May 2022 were employed. The search field was stipulated for the study abstract instead of the study title to allow an in-depth examination of the research scope. To fulfil the current research objectives, several keywords, including “public sector accrual accounting”, “government accrual accounting”, “MPSAS”, and “statutory bodies” were employed to search all pertinent English journal articles within the time frame, which is the second step.

The inclusion criteria were studies appraising (1) accrual accounting in the public sector, (2) factors influencing or inhibiting accrual accounting adoption in the public sector, and (3) MPSAS adoption among statutory bodies. Due to limited MPSAS adoption studies, past studies in different countries were also scrutinised to examine governmental accrual accounting implementation. Particularly, articles were screened based on the abstracts and the current search criteria. An initial search included several hundred results, which were subsequently narrowed down to 73 journal articles between 1998 and May 2022 in line with the present study objectives. In addition, relevant conference papers, government documents, such as circulars, and legal records, including Acts of Parliament or statutes, were reviewed.

3. Findings

The current section contains four main subsections with the first subsection discussing factors influencing accrual accounting adoption in the public sector, while the subsequent subsection

examines factors inhibiting the adoption. The third subsection summarises selected international studies investigating accrual accounting adoption among governmental institutions, followed by the final subsection elucidating the Malaysian accrual accounting adoption experience via MPSASs.

3.1 Factors Influencing Accrual Accounting Adoption in the Public Sector

Accrual accounting in the public sector is advocated globally due to the significant benefits to governments, in which more transparent information is attained for effective decision-making (Caruana & Zammit, 2019; Chow & Pontoppidan, 2019; Hyndman & Connolly, 2011; Lye et al., 2005; Nogueira et al., 2013). Transparent information would allow optimal resource allocation, planning, and control by governments, which would be conducive to effective asset valuation (Christiaens et al., 2012) and depreciation estimation (Molland & Clift, 2008). Furthermore, accrual accounting could promote higher financial accountability and transparency (Muraina & Dandago, 2020; Sellami & Gafsi, 2019; Sylvia et al., 2018) to reduce government agency costs (Caruana & Zammit, 2019) and diminish corruption risks (Cuadrado-Ballesteros et al., 2019; Harun et al., 2012; Prabowo et al., 2017; Sellami & Gafsi, 2019). Concurrently, accrual accounting could ensure higher governmental efficiency by transforming an input-oriented method to an output-oriented approach, thereby improving management capabilities and elevating higher economic outputs (Lampe et al., 2015).

Certain countries would be less motivated to adopt accrual accounting in the public sector, especially with high dependency on financial aid, loans, and bailouts from the International Monetary Fund or World Bank, or with low acceptance and preparedness for the transition (Adhikari et al., 2013; Harun et al., 2012; Mbelwa et al., 2019). Similar situations were notable in former colonies of Western countries, as the shift was regarded as another form of neo-colonialism (Lassou et al., 2019). Meanwhile, countries without receiving financial aid might receive indirect institutional pressure from international organisations, namely the OECD and the United Nations (UN), to embrace accrual accounting in the public sector (Adhikari & Gårseth-Nesbakk, 2016; Chow & Pontoppidan, 2019). The institutional pressure would constrain the autonomy of relevant central, state, municipal, and local governments in willingly adopting accrual accounting (Falkman & Tagesson, 2008; Reginato, 2010), aside from private institutions, such as universities (Gigli et al., 2018; Upping & Oliver, 2012).

3.2 Factors Inhibiting Accrual Accounting Adoption in the Public Sector

3.2.1 Implementation Challenges

Several governmental accrual accounting implementation challenges, such as delayed transition inevitably exist. For instance, the British transition occurred over approximately a decade (Hyndman & Connolly, 2011), not unlike similar lengthy transition periods reported in

other countries (Buhr, 2012). Moreover, the reformation was forfeited when the challenges were highly intractable in several nations (Adhikari & Jayasinghe, 2017).

3.2.2 Complexity

In Connolly and Hyndman (2006), the actual accrual accounting implementation in the public sector was highly different from the government proposal, which was frequently over-optimistic due to underestimated complexity (Adhikari et al., 2019; Adhikari & Mellemvik, 2011; Jorge et al., 2007) and exorbitant transition costs (Hyndman & Connolly, 2011; Lassou et al., 2019). In addition, numerous studies demonstrated that governmental accrual accounting adoption generated limited tangible benefits (Christofzik, 2019; Gigli et al., 2018; Pollanen & Loiselle-Lapointe, 2012; West & Carnegie, 2010). Resultantly, low adoption levels were evident in various nations (Agasisti et al., 2015; Falkman & Tagesson, 2008; Harun et al., 2012; Reginato, 2010) aside from ineffective government oversight underlying the low compliance (Caruana & Zammit, 2019).

3.2.3 Technical Factors

The technical factors contributing to governmental accrual accounting adoption include sufficient human resources with adequate technical skills and knowledge (Adam et al., 2020), information technology systems (Upping & Oliver, 2012) and a clear implementation framework within a definite time frame (Bruno & Lapsley, 2018). Accordingly, insufficient human capital, especially trained accountants with the necessary expertise and technical skills, would adversely affect accrual accounting implementation in the public sector (Becker et al., 2014; Gigli & Mariani, 2018; Ismail et al., 2018; Maimunah, 2016; Salleh et al., 2014; Upping & Oliver, 2012).

3.2.4 Political Factors

Political factors include enacting legislature promoting governmental accrual accounting adoption and the political will to steer successful reformations. Despite strong political wills in countries, such as New Zealand, Australia, and the United Kingdom (Buhr, 2012; Hyndman & Connolly, 2011), politicians' diminishing enthusiasm from the beginning stage would contribute to implementation delays (Polzer et al., 2019). Furthermore, a lack of political will would not only lead to low compliance with the accrual accounting reformation but also engenders bribery kickbacks in Indonesian municipalities (Harun et al., 2012) and attempts to fabricate financial results (Adhikari et al., 2019). Thus, a strict regulatory framework would be rendered ineffective when the adoption is highly influenced by political considerations (Cohen & Leventis, 2013). Moreover, self-interest would negatively impact accrual accounting adoption in the public sector when politicians prioritise personal political career advancement (Falkman & Tagesson, 2008). For example, the Greek election cycle affected the revenue management of local governments, particularly when mayors were re-elected (Cohen et al., 2019). Simultaneously, political interferences in Sweden resulted in a negative alteration in

the public pension fund expense and liability calculation approach, despite the availability of an accrual accounting model (Brorström, 1998). Political ideology would also underpin accrual accounting rejection by the central government of the Republic of Ireland (Hyndman & Connolly, 2011).

3.2.5 Cultural Factors

Cultural factors could impede accrual accounting implementation in the public sector (Polzer & Reichard, 2019) as the adoption requires significant reformations to the entire management culture (Hepworth, 2003). Countries with civil servants exhibiting high change resistance or governments accustomed to cash-based accounting would experience reformation delays, such as the sluggish accrual accounting adoption among local Sri Lankan governments (Dissanayake et al., 2019). Bureaucratic management culture is another obstacle to accrual accounting implementation in the public sector as evidenced by a Thai study (Nakmahachalasint & Narktabtee, 2019). Nonetheless, motivation and education could reduce resistance to change (Becker et al., 2014).

3.3 Accrual Accounting Among Governmental Institutions

Governmental accrual accounting implementation is a prolonged international academic discourse, particularly in developed countries, to promote higher financial transparency and more effective reporting in delivering enhanced public services and performance. Despite extensive academic discussions, accrual accounting adoption degrees in the public sector vary in different governments across the globe. Apart from the major adoption by central, state, and local governments, the implementation is observed in governmental institutions, such as pension funds (Klumpes, 2001), hospitals (Greenwood et al., 2017; Pettersen & Nyland, 2011; Scott et al., 2003), public universities (Gigli & Mariani, 2018; Upping & Oliver, 2012; West & Carnegie, 2010), and government-owned enterprises (Capalbo et al., 2014), which would also directly impact public interests.

3.4 The Malaysian Experience

Before introducing accrual accounting in the public sector, the Malaysian government adopted a modified cash-based accounting. Particularly, transactions were recorded mainly according to the cash received or paid without assets being capitalised and liabilities being reported. Expenditures were based on the amount allocated for the current year with relevant payments being performed until January of the following year (Ministry of Finance, 2013). Since national independence in 1957, the Malayan and the subsequent Malaysian government developed a series of five-year economic plans. During the development of the 11th Malaysia Plan (11MP, 2016 to 2020) in the early 2010s, accrual accounting in the public sector gained prominence, with the mid-term review emphasising prudent public financial management and formulating a strategy to improve public budgeting. Accrual accounting thus became an important element in the reformation when the importance was underscored

in a speech by the incumbent prime minister, which announced that accrual accounting implementation in the public sector would be accelerated (Economic Planning Unit, 2020).

The accrual accounting system would capitalise assets, record liabilities, and prepare public sector financial statements according to the MPSASs adapted from the IPSASs (Ministry of Finance, 2013). Particularly, the MPSASs adopted 35 regulations from the 41 IPSAS clauses. To ensure proper PSAA coordination and implementation, the MPSASs were published in stages from March 2013 to December 2016 with 32 of 35 MPSASs continuing to be employed while removing the remaining three. Meanwhile, three IPSASs were yet to be adopted while another three IPSASs, such as IPSAS 10 Financial Reporting in Hyperinflationary Economies, IPSAS 15 Financial Instruments, and IPSAS 18 Segment Reporting were excluded. The MPSAS utilisation was mandated through a circular issued by the Accountant General's Department of Malaysia in 2017, which outlined three major accrual accounting benefits. Specifically, accrual accounting would result in cost savings through recorded data outputs to allow more effective evaluation in achieving financial outcomes. Asset information would enable a more effective asset valuation and revenue generation while the asset databases would enhance asset management and maintenance, thus delivering improved public services.

According to internally circulated documents of the Malaysian Accountant General's Department, the federal government envisages more effective and efficient fiscal management from accrual accounting adoption through five approaches. Particularly, financial management, transparency, and organisational accountability would be improved while elevating organisational sustainability through complete and comprehensive financial reports. In addition, more effective and efficient measurement of policies would be applied to align with accrual accounting implementation, while simultaneously employing more appropriate financial management indicators to ensure higher accuracy and effectiveness in decision-making. Higher integrity levels would also be ensured through increased efficiency, responsibility, and transparency in financial management, accounting, and necessary reporting.

The initial accrual accounting implementation date in the public sector was specified by the federal government on 1 January 2015. Nevertheless, full implementation was delayed until 1 January 2022 due to numerous hindrances. For instance, existing laws, including the Federal Constitution of Malaysia and the Financial Procedures Act 1957 (2006), were required to be reviewed and amended. Moreover, systematic data collection on government assets, including heritage assets, inventories, agricultural assets, intangible assets, and investment properties was performed in phases from 2015 to 2019. A pilot study was conducted for assets and liabilities at several selected cost centres before a full-scale data collection stage was executed. Simultaneously, the transition to accrual accounting in the public sector adhering to international accounting requirements was enhanced through an agreement between the Malaysian government and the IFAC to adopt IPSASs as the fundamental for the MPSASs. The process commenced in August 2012.

Correspondingly, numerous training sessions were conducted throughout the public departments and governmental sectors for public-sector accountants to be proficient in accrual accounting.

Public sector personnel's readiness to adopt the accrual accounting system is a challenge in Malaysia. Following Noordin et al. (2014), employees' resistance to change was significant at senior organisational levels, in which most employees expressed personal concerns regarding increased workloads and job difficulties from accrual accounting implementation. In 2018, Ismail et al. (2018) reported an increase in Malaysian public sector employees' readiness for accrual accounting implementation, which supported the findings of Atan and Mohamed Yahya (2015). As such, the Malaysian government had undertaken immense steps and initiatives through various governmental accrual accounting programmes, such as seminars, workshops, and training courses to ensure that public servants were equipped with sufficient knowledge and technical skills to embrace the accrual accounting system (Yusof & Jaafar, 2018; Ismail et al., 2018).

A full-scale MPSAS implementation was highly challenging owing to the presence of 132 and 136 statutory bodies at the federal and state levels. According to the Statutory Bodies (Accounts and Annual Reports) Act 2011, a statutory body denotes:

Any body corporate, irrespective of the name by which it is known, that is incorporated pursuant to the provisions of federal law and is a public authority or an agency of the Government of Malaysia but does not include a local authority and a body corporate that is incorporated under the Companies Act.

Federal-level statutory bodies, including public universities, Bank Negara Malaysia, the Federal Land Development Authority (FELDA), and Tabung Haji, perform a diverse range of functions, which are essential to positive national development with the presence of optimal governance and efficient financial management. Correspondingly, financial reporting quality and information transparency could be enhanced through MPSASs.

Certain statutory bodies encompass both public and private responsibilities and business interests apart from accountability requirements regarding specific governmental objectives and efficient financial management expectations to ensure high business sustainability anticipated by key stakeholders. While accrual accounting in the public sector potentially ensures transparent accounting of various statutory bodies, concepts of profitability and net worth are also highly prioritised in reporting relevant outcomes of commercial activities, especially in the subsidiaries. As such, private-sector accounting approaches are highly necessitated by employing the Malaysian Financial Standards (MFRS) to account for commercial objectives, which contrasts with the Malaysian governmental aspiration to adopt the MPSASs in public organisations. Although the discovered challenges appear to ease over time, the aforementioned implementation challenges remain when only

limited studies thoroughly examined accrual accounting adoption. More studies are required as the public sector consists of the federal government, state governments, and statutory bodies, with respective establishments constituted through the enactment of specific acts and legislations. Specifically, Azhar et al. (2022) advocated more research on statutory bodies, which possessed organisational structures and objectives dissimilar from governmental agencies and departments at both federal and state levels.

4. Discussion and Concluding Remarks

The present literature review identified two interrelated gaps in the extant MPSAS adoption literature. The first gap exists due to research scarcity on statutory bodies while the second counterpart is concerned with the legal factors influencing MPSAS adoption among statutory bodies. Although prior studies examined governmental accrual accounting adoption at both federal and state levels (Azmi & Mohamed, 2014; Rozaidy & Siti-Nabiha, 2022) or among public-sector accountants (Atan & Mohamed Yahya, 2015; Ismail et al., 2018), research on Malaysian statutory bodies remained limited. Statutory entities play significant roles in national development by achieving superior financial reporting quality, transparency, and accountability. Furthermore, an internal document by the Accountant General's Department revealed that as of 31 July 2021, 88 of 132 federal-level statutory bodies implemented MPSASs (a 67% adoption rate) compared to only 33 of 136 state-level statutory bodies adopted (a 24% adoption rate). Hence, further investigation is required to examine the factors inhibiting the MPSAS adoption level among state-level statutory bodies.

The second literature gap involves the factors inhibiting MPSAS adoption among statutory bodies, in which several significant factors were identified, such as complexity, technical, political, and cultural factors. Accordingly, the aforementioned legal factors require further research as the public sector in a specific country is contingent on local laws and legal pronouncements. As such, governmental accrual accounting implementation in various countries occurs at different levels and paces, which suggests that contextual factors, including laws and legislation, significantly influence the implementation level. Generally, federal-level public organisations are required to abide by the Statutory Bodies (Accounts and Annual Reports) Act 1980. Nevertheless, a Malaysian government circular issued in 2016 exempted certain federal-level statutory bodies with financial reporting under the legal provisions of Bank Negara Malaysia, Securities Commission, or Companies Commission Malaysia.¹ Meanwhile, state-level statutory bodies under the ambit of state enactments and government directives could exclude MPSAS adoption. As the public sector is highly subject to the specific guidelines and directives issued by the various governmental levels, MPSAS implementation levels in different statutory bodies would be significantly influenced. Resultantly, the present study advocates further examination of various contexts in statutory bodies and respective legal requirements after analysing the experiences of

¹ KK/BSBB (S) 10/16/03.JLD.9 (SK.1) (9) dated 9 December 2016.

Malaysian statutory bodies. Further exploration is also required on the relevant issues experienced by Malaysian statutory bodies in adopting MPSASs.

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Pelaksanaan Perakaunan Akruan dan Penggunaan Maklumat Akruan dalam Sektor Awam di Malaysia: Impak terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*

(*Accrual Accounting Implementation and Accrual Information Usage in the Malaysian Public Sector: Impacts on Sustainable Development Goals (SDG) and Maqasid Shariah*)

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Abstrak

Tujuan: Kajian ini bertujuan untuk mengenal pasti sejauh mana pelaksanaan perakaunan dalam sektor awam di Malaysia dan penggunaan maklumat akruan tersebut dapat memberi impak terhadap pembangunan belanjawan, pengurusan aset dan liabiliti, penzahiran akauntabiliti serta pengukuran prestasi. Impak tersebut juga dikaitkan dengan Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*.

Metodologi: Kajian kualitatif ini menggunakan kaedah perbincangan kumpulan berfokus (*Focus Group Discussion*, “FGD”) bersama akauntan di kementerian dan Pihak Berkuasa Tempatan (PBT) di Malaysia. Analisis tematik digunakan untuk menganalisis data temu bual tersebut.

Artikel ini adalah sebahagian daripada projek Kajian Penandaarasan Amalan Perakaunan Akruan dan Impak terhadap Matlamat Pembangunan Lestari (SDG) berdasarkan *Maqasid Syariah* yang dibiayai oleh Jabatan Akauntan Negara Malaysia di bawah Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Bil. 1 Tahun 2021 (JANM.IPNC PD.100-3/3/2 Jld. 2(1)).

Dapatan: Kajian mendapati kementerian dan PBT yang terlibat lazimnya melaksanakan perakaunan akruan seperti termaktub dalam Pekeliling Perbendaharaan. Penggunaan maklumat akruan tersebut telah dimanfaatkan dalam pembangunan dan pengurusan belanjawan, pengurusan aset dan liabiliti tetapi sebaliknya dalam penilaian prestasi, namun masih membawa kepada penzahiran akauntabiliti yang baik dengan pelaporan yang lebih menyeluruh dan tepat. Melihat kepada strategi yang terdapat di dalam SDG dan elemen *Maqasid Syariah*, signifikan penggunaan maklumat perakaunan akruan adalah diakui menerusi impak penggunaan maklumat akruan tersebut. Kepelbagaian manfaat penggunaan maklumat akruan, secara tidak langsung impaknya, dapat menyokong usaha untuk merealisasikan SDG. Seterusnya, kedua-dua pihak kementerian dan PBT terbabit turut menyokong kepada rangka kerja pelaporan berintegrasikan SDG berlandaskan *Maqasid Syariah* sejajar dengan agenda nasional, Wawasan Kemakmuran Bersama (WKB) 2030.

Implikasi Praktikal: Kajian ini boleh dijadikan sebagai panduan kepada pihak berwajib untuk memastikan maklumat perakaunan akruan digunakan sebaik mungkin untuk membuat keputusan dalam pengurusan kewangan. Kajian ini mencadangkan latihan dan kursus berkaitan pelaksanaan perakaunan akruan dan penggunaan maklumat akruan secara berkala perlu terus dipertingkatkan. Seterusnya, pelaporan prestasi yang komprehensif berteraskan SDG berlandaskan *Maqasid Syariah* dilihat adalah relevan.

Keaslian/Nilai: Kajian ini membuktikan penggunaan maklumat akruan secara tidak langsung dapat memberi impak terhadap SDG berdasarkan *Maqasid Syariah*.

Kata Kunci: Perakaunan sektor awam, perakaunan akruan, Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG"), *Maqasid Syariah*.

Abstract

Purpose: *The current study aims to determine the degrees of accrual accounting implementation and accrual information usage in the Malaysian public sector with relevant impacts on budget development and management, asset and liability management, accountability disclosure, and performance measurement.*

Methodology: *The present study employed a qualitative methodology, namely focus group discussion to garner relevant insights from the*

accountants in Malaysian Ministries and Local Authorities (LA). Thematic analysis was subsequently conducted for interview data analysis.

Results: *The findings revealed that accrual accounting was implemented as specified in the Malaysian Government Treasury Circular. Meanwhile, accrual information was employed in budget development and management and asset and liability management albeit less frequently in performance measurement. Accrual information usage contributed to satisfactory accountability disclosure through more comprehensive, accurate, and transparent reporting. Furthermore, accrual accounting usage produced significant positive impacts to realise sustainable development goals (SDGs) by incorporating Maqasid Shariah elements in accomplishing the national agenda of Shared Prosperity Vision 2030.*

Practical Implications: *The current study could guide relevant authorities to ensure effective accrual information application in financial management. This study also recommends continuous enhancement of periodic training programmes and courses on governmental accrual accounting implementation and accrual information usage. Additionally, comprehensive reporting of Maqasid Shariah-based SDG performance is highly emphasised. Originality/Value: The present study demonstrated that accrual information usage positively impacted SDG achievement based on Maqasid Shariah.*

Keywords: *Public sector accounting, accrual accounting, SDGs, Maqasid Shariah.*

1. Pengenalan

Kerajaan Malaysia telah melaksanakan reformasi kewangan di bawah Program Transformasi Ekonomi mulai tahun 2011 yang antaranya melibatkan peralihan kepada asas akruan di peringkat Kerajaan Persekutuan, bagi tujuan memastikan ketelusan dan akauntabiliti tercapai. Kajian ini memberi tumpuan kepada impak penggunaan perakaunan asas akruan terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*. Dasar Transformasi Sektor Awam dalam Model Ekonomi Baru juga mendasarkan pelaksanaan perakaunan akruan sepenuhnya, justeru Kementerian Kewangan dalam Belanjawan 2019 juga menyatakan kerajaan akan beralih sepenuhnya kepada perakaunan akruan bagi memastikan pelaporan hutang dan liabiliti yang lebih telus bagi menjamin tadbir urus yang lebih baik.

Selain itu, berdasarkan piawaian perakaunan *International Public Sector Accounting Standards (IPSAS)*, pelaporan dan perakaunan asas akruan perlu diguna pakai bagi hutang dan liabiliti. Seterusnya, pelaporan hutang tersebut adalah menepati tatacara Statistik Hutang

Sektor Awam, oleh *International Monetary Fund (IMF)*. Kesannya, ia turut menyokong kepada pengurusan polisi fiskal, polisi monetari dan tadbir urus yang lebih baik. Umum mengetahui banyak lagi faedah yang akan dinikmati dengan melaksanakan perakaunan akruan. Namun begitu, kejayaan pelaksanaan perakaunan akruan akan dapat dicapai jika ia digunakan secara optimum dalam pembuatan keputusan berkaitan ke arah amalan pengurusan kewangan yang terbaik dan meningkatkan kecekapan.

Oleh yang demikian, ia menarik minat kajian ini untuk menyiasat impak penggunaan maklumat perakaunan akruan terhadap SDG berdasarkan *Maqasid Syariah*. Kajian ini akan memperkukuhkan proses peralihan kepada perakaunan akruan dalam membentuk kerangka kerja dan pelaksanaan perakaunan akruan untuk mengoptimumkan faedah yang dapat diperolehi. Sebagaimana terbukti dalam kajian lepas yang menekankan pelaksanaan perakaunan akruan sahaja tidak mencukupi, penggunaan maklumat yang diperolehi daripada perakaunan akruan tersebut adalah lebih penting untuk tampak impak perakaunan akruan. Penggunaan perakaunan akruan tersebut akhirnya dapat menyokong usaha untuk mencapai Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) menerusi pengurusan kewangan yang baik dan pelaporan yang lebih telus dan menyeluruh.

Kajian ini dipercayai dapat membantu meningkatkan kepercayaan pihak pemegang taruh terhadap kebolehpercayaan dan keabsahan sistem perakaunan akruan.

2. Sorotan Kajian

2.1 Perakaunan Akruan

Perakaunan Akruan dalam sektor awam merupakan asas perakaunan bagi pelaporan kedudukan dan prestasi kewangan kerajaan yang mensasarkan pelaporan yang lebih tepat dan telus. Transformasi daripada perakaunan tunai ubahsuai kepada perakaunan akruan adalah menjurus ke arah pengurusan fiskal yang lebih cekap dan berkesan (JANM, 2014). Penggunaan perakaunan berasaskan akruan oleh kerajaan adalah elemen yang penting untuk mengubah sistem tunai birokrasi berasaskan pentadbiran kepada sistem pengurusan kewangan yang lebih informatif (Al-Tholaya, 2013). Ini adalah untuk memastikan segala bekalan maklumat kewangan yang komprehensif, boleh dipercayai serta bermakna untuk dipertanggungjawabkan dan membuat keputusan.

Perakaunan Asas Tunai dan Asas Akruan adalah berkaitan dengan pengiktirafan, iaitu bila sesuatu urus niaga itu akan diiktiraf. Pengiktirafan menjadi satu isu yang signifikan kerana ia boleh mempengaruhi kedudukan dan prestasi kewangan sesebuah organisasi bagi sesuatu tempoh masa tertentu. Perakaunan asas tunai adalah merujuk kepada pengiktirafan yang hanya akan dibuat (direkod ke dalam jurnal) berdasarkan kepada penerimaan atau pembayaran tunai sahaja sebagai asas. Ini bermakna, sekiranya sesuatu urus niaga itu melibatkan penerimaan atau pembayaran secara tertangguh (belum terima atau belum bayar), maka urus niaga berkenaan tidak akan diiktiraf (direkod) sehinggalah tunai diterima.

Dalam asas ini, catatan pelarasan tidak diperlukan dan ia senang untuk diamalkan. Asas akruan pula mengiktiraf urus niaga pada masa ia berlaku dengan mengambil kira manfaat sebagai asas pengiktirafan. Manfaat di sini termasuklah tunai dan bukan tunai (JANM, 2014).

Di Jepun, perakaunan akruan telah mula dilaksanakan sejak tahun 2003 untuk memberi gambaran yang komprehensif tentang kedudukan kewangan, terutamanya dari aspek hasil dan perbelanjaan serta menilai prestasi kerajaan (Fukiya, 2016). Menurut Tran & Noguchi (2020), kebanyakan Pihak Berkuasa Tempatan (PBT) di Jepun telah mengguna pakai perakaunan akruan sejak tahun 2009 walaupun ia bukan mandatori, malah ada PBT yang telah bermula seawal tahun 2001 namun ia menjejaskan kecekapan PBT. Masalah kekurangan pengurusan aset dan ketidaksepadanan kegunaan perakaunan asas tunai dalam belanjawan secara bersama perakaunan asas akruan dikenal pasti menjadi punca kepada ketidakcekapan PBT. Sebaliknya, Lampe et al. (2015) membuktikan amalan perakaunan akruan memberi kesan yang positif kepada kecekapan, terutamanya peningkatan kecekapan dalam perihal kos di kalangan PBT di Jerman. Oleh sebab itu, walaupun perakaunan asas akruan digunakan, pengurusan aset yang strategik perlu dipertingkatkan secara optimum dan penggunaan belanjawan akruan perlu digunakan sebaiknya untuk menjamin kecekapan sektor awam.

Di negara-negara membangun seperti United Kingdom, Australia, Sweden, Switzerland dan New Zealand antara negara yang dikenali telah melaksanakan perakaunan akruan sejak awal tahun 90an telah berjaya membuktikan peningkatan kecekapan sektor awam. Di New Zealand misalnya, penggunaan perakaunan akruan selepas negara mengalami kemelesetan ekonomi dan longgokan hutang membuktikan kejayaan mereka daripada belunggu krisis kewangan (Yulianti et al., 2019). Kajian lepas juga membuktikan pelaksanaan perakaunan akruan digunakan dalam pembangunan belanjawan, pengurusan aset dan liabiliti serta penilaian prestasi dan penzahiran akauntabiliti, walaupun dapatan yang tidak seragam, namun kelebihan penggunaan perakaunan akruan tidak dinafikan (Basnan et al., 2013; Tran & Noguchi, 2020). Yulianti et al. (2019) mengenal pasti isu teknikal merupakan di antara faktor yang menyekat kepada kejayaan pelaksanaan perakaunan akruan, termasuk penilaian aset yang kurang tepat, kekurangan staf yang berkelayakan, kekurangan pengetahuan perakaunan asas akruan dan masalah IT (Alghizzawi & Masruki, 2020; Ismail et al., 2018; Ritonga, 2016; Saleh et al., 2012).

Kajian terdahulu mendapati penggunaan maklumat yang dihasilkan daripada perakaunan akruan dalam pembuatan keputusan di PBT adalah tinggi, dalam belanjawan, berbanding pengurusan aset dan liabiliti serta penilaian prestasi (Jainal & Basnan, 2018). Justeru, kajian tersebut memberi bukti empirikal bahawa faktor pengalaman mempunyai hubungan yang positif terhadap penggunaan perakaunan akruan dalam pembuatan keputusan, manakala kemahiran dibuktikan sebaliknya. Oleh itu, faktor-faktor berkenaan seharusnya diberi perhatian oleh pihak berwajib dan pengurusan atasan sektor awam supaya perakaunan akruan dapat dimanfaatkan faedahnya seperti di negara-negara maju yang lain. Faktor lain yang mempengaruhi ketersediaan pelaksanaan perakaunan akruan telah dikenal pasti dalam

kajian lepas, antaranya sumber manusia, teknologi maklumat dan budaya organisasi (Yuliati et al., 2019; Indriani et al., 2018; Ahmad, 2016; Atan & Yahya, 2015).

Menurut Maliah et al. (2016), kajian tentang isu dan amalan perakaunan di institusi kerajaan di Malaysia adalah masih kurang. Antara kajian awal adalah kajian oleh Abdul Rahman dan Goddard (1998). Kedua-dua kajian tersebut mendapati wujudnya keperluan garis panduan amalan perakaunan yang lebih terperinci seperti piawaian perakaunan yang perlu diberi perhatian, juga ketiadaan garis panduan yang lebih terperinci. Namun begitu, kajian tersebut adalah berkaitan konteks perakaunan spesifik untuk Majlis Agama Islam Negeri (MAIN), yang merupakan entiti yang unik, ditadbir oleh kerajaan negeri dalam konteks Islam. Masruki et al. (2020) menegaskan organisasi berasaskan agama mempengaruhi kandungan pelaporan, seperti juga yang dibuktikan oleh Jayasinghe & Soobaroyen (2009) bagi organisasi bersandarkan agama Hindu dan Budha. Keunikan sesebuah organisasi menyatakan keperluan garis panduan masing-masing yang lebih terperinci untuk keseragaman pelaporan. Seterusnya, keseragaman tersebut dapat dinikmati faedah bagi tujuan pengurusan dalaman termasuk perbandingan dari tahun ke tahun, pengurusan prestasi dan pembuatan keputusan dengan lebih optimum. Ketidakteraturan akan menyebabkan maklumat agak sukar difahami dan digunakan (Connolly & Hyndman, 2006). Namun begitu, Masruki et al. (2018) mendapati isu pelaporan mandatori dikaitkan dengan ketidakteraturan pelaporan disebabkan kekurangan penguatkuasaan dan garis panduan.

Berdasarkan pengalaman negara-negara yang telah melaksanakannya melebihi 20 tahun dalam sektor awam, masih terdapat ketidakteraturan. Ketidakteraturan tersebut termasuk aspek berkaitan perakaunan dan pelaporan aset warisan, aset pertahanan dan aset infrastruktur awam. Penyelesaian kepada persoalan berkaitan pengiktirafan aset-aset berkenaan adalah bergantung kepada ciri-ciri aset tersebut sepertimana yang ditakrifkan dan juga bergantung kepada pertimbangan negara yang terlibat. Isu berkaitan perakaunan dan pelaporan aset warisan, aset pertahanan dan aset infrastruktur awam ini juga berkemungkinan dihadapi oleh Kerajaan Malaysia apabila peralihan kepada perakaunan asas akruan dilaksanakan (Basnan et al., 2012). Perbincangan dalam hal pengurusan aset berkenaan juga dibincangkan dalam kajian ini (Rujuk Bahagian 4.2.2). Sungguhpun demikian, sorotan kajian terdahulu menegaskan kepentingan penggunaan perakaunan akruan dalam sektor awam adalah lebih penting yang seharusnya melebihi daripada pelaksanaan perakaunan akruan sahaja. Malah telah dibuktikan di negara-negara membangun seperti New Zealand, United Kingdom, Jepun dan Jerman (Tran & Noguchi, 2020; Yuliati et al., 2019; Lampe et al., 2015). Impak penggunaan maklumat yang diperolehi daripada perakaunan akruan seterusnya, turut menyokong usaha untuk mencapai SDG berlandaskan *Maqasid Syariah* (Masruki dan Hanefah, 2021).

2.2 Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”)

Persatuan Bangsa-bangsa Bersatu (PBB) dalam Perhimpunan Agung PBB yang diadakan pada September 2015 di New York, Amerika Syarikat telah mengemukakan SDG untuk

dicapai menjelang tahun 2030. Menurut Bebbington dan Unerman (2018), SDG telah mendapat tarikan dan perhatian sebilangan besar negara anggota PBB yang secara bulat suara menyokong usaha ini, antaranya pihak kerajaan, NGO, organisasi sektor awam dan sektor swasta termasuk perniagaan dan badan profesional.

Oleh sebab itu, penyelidikan berkaitan SDG telah mula muncul dalam beberapa bidang, termasuk kewangan, perniagaan dan pengurusan (Annan-Diab & Molinari, 2017; Schaltegger et al., 2017; Storey et al., 2017). Sebahagian daripada penyelidikan ini mengenal pasti dan mengembangkan usaha pembangunan terhadap kerangka kerja SDG dalam membina dasar dan aktiviti organisasi. Begitu juga dalam literatur perakaunan, potensi SDG dan keberkesanannya semakin popular dalam literatur perakaunan (Bebbington & Unerman, 2018).

Dalam kajian ini kumpulan penyelidik berpendapat bahawa kakitangan sektor awam di dalam bidang perakaunan perlu memainkan peranan penting dalam membantu menerapkan dasar perakaunan akruan di peringkat organisasi sejajar dengan usaha untuk menyumbang ke arah pencapaian SDG. Maklumat perakaunan akruan lebih telus dan menyeluruh serta dapat membantu pembuat dasar untuk melihat samada objektif tertentu SDG telah pun dicapai. Misalnya, SDG 1 penghapusan kemiskinan dalam negara, jika pengurusan kewangan diuruskan dengan baik hasil daripada pelaporan kewangan perakaunan akruan, hasrat untuk membasmi kemiskinan boleh dicapai.

Nik Wan (2005) menjelaskan bahawa perakaunan akruan dapat menawarkan faedah perakaunan terbaik dalam pengurusan sumber-sumber organisasi. Di samping itu, kajian lepas mendapati perakaunan akruan mampu memperbaiki penzahiran akauntabiliti sektor awam melalui kos sebenar perbelanjaan dan hasil kerajaan yang dilaporkan lebih telus. Hal ini berbeza dengan perakaunan berasaskan tunai, justeru jelas menuntut kepada peralihan kepada perakaunan akruan menerusi impak penggunaan yang seterusnya dapat menyokong usaha ke arah pencapaian SDG.

SDG 2030 menggariskan 17 matlamat dan antara SGD yang dipercayai relevan dalam konteks perakaunan akruan. Misalnya, i) SDG1 dan SDG2: Kemiskinan tegar dan kelaparan sifar - perakaunan akruan dapat melaporkan kedudukan kewangan dengan lebih tepat dengan keseimbangan disiplin fiskal dipercayai dapat menyokong kepada belanjawan berhemat dan mampu menyumbang kepada impak sosio-ekonomi; ii) SDG11: Bandar dan komuniti yang mampan - PBT telah mengguna pakai perakaunan akruan lebih dari 20 tahun, sewajarnya mampu mengurus kewangan secara lebih berhemat dalam meningkatkan kualiti hidup komuniti dan pembangunan setempat yang lebih sejahtera; dan iii) SDG 16: Keamanan, keadilan dan institusi berwibawa - perakaunan akruan mampu memberi gambaran kedudukan kewangan institusi sektor awam yang lebih menyeluruh dan tepat.

Oleh sebab itu, ulasan di akhbar-akhbar tempatan banyak menekankan aspek integriti, tadbir urus korporat dan politik, pentadbiran sektor awam dan penguatkuasaan undang-

undang yang merupakan antara prinsip-prinsip utama untuk mencapai SDG 2030. Pelaksanaan perakaunan akruan dilihat adalah merupakan sebahagian usaha ke arah SDG 2030; dilihat sejajar dengan objektif perakaunan akruan (JANM, 2014). Secara prinsipnya, kajian ini akan meneliti amalan pelaksanaan perakaunan akruan dengan melihat impak kepada SDG berdasarkan elemen-elemen yang digariskan dalam *Maqasid Syariah*.

2.3 *Maqasid Syariah*

Istilah *Maqasid* berasal dari perkataan arab yang bermaksud prinsip, tujuan, objektif, niat, atau tujuan (Kasri & Ahmed, 2015). Digabungkan dengan istilah “al-shari’ah”, Abdul Aziz dan Mohamad (2013) mendefinisikannya sebagai “... tujuan dan objektif untuk perundangan peraturan Islam atau hanya objektif undang-undang Islam ...” (Abdul Aziz & Mohamad, 2013). Imam Al-Ghazali membahagikan *maqasid al-shari’ah* kepada lima elemen penting, yang terdiri daripada agama, nyawa, akal, keturunan dan harta (Ascarya & Sukmana, 2014; Bedoui, 2012). Indikator *Maqasid Syariah* dikembangkan untuk mencapai kepentingan individu dan awam (Abubakar, 2016). Ini adalah dasar untuk merancang peraturan dalam sistem ekonomi Islam yang memahami nilai, ukuran dan tahap (Abdullah, 2012).

Objektif *Syariah (Maqasid Syariah)* adalah mencari kebaikan dan mencegah dari segala kemudaratan (*jalb al-manfa’ah wa daf’ al-madarrah*) kepada kehidupan masyarakat tanpa mengira agama dan bangsa (Fisol & Hassan, 2019; Fisol et al., 2017). Setiap perkara di dalam kehidupan manusia mempunyai objektif dan tujuannya bagi memastikan kebajikan umum (*maslahah*) manusia sejagat dipelihara dari segala kemungkaran dan penindasan selaras dengan Shariat Islam yang syumul. ini merangkumi pemeliharaan agama (*al-din*), pemeliharaan nyawa (*al-nafs*), pemeliharaan akal (*al-’aql*), pemeliharaan keturunan (*al-nasb*) dan pemeliharaan harta (*al-mal*) yang berada di dalam ruang lingkup kategori utama di dalam *Maqasid Syariah* iaitu keperluan (*daruriyyah*), kehendak (*hajiyyah*) dan keselesaan (*tahsiniiyyah*) (Al-Ghazali, 1998).

Menurut Fisol dan Hassan (2019), belanjawan tahun 2019 yang dibentangkan oleh Kerajaan Malaysia adalah menepati objektif *Syariah (Maqasid Syariah)* ke arah mencari kebaikan dan mencegah dari segala kemudaratan bagi memastikan keadilan dan kebajikan rakyat diperolehi secara keseluruhan tanpa membezakan bangsa dan agama. Kajian lepas juga menyatakan bahawa pengurusan perakaunan yang berkesan melalui strategi penjajaran dalam kewangan Islam memberi kesan yang positif terhadap peningkatan terhadap *Maqasid Syariah* (Laela et al., 2018).

Konsep *Maqasid Syariah* ini banyak digunakan di bidang sistem kewangan Islam, terutamanya untuk melihat prestasi perbankan Islam (Antonio et al., 2012; Ascarya & Sukmana, 2014; Hamid et al., 2016; Mohamad, Ali, & Sharif, 2016; Mohammed & Taib, 2010). Konsep ini juga telah dikaji untuk mengkaji industri bukan kewangan (Hanefah et al., 2021). Ia telah digunakan dengan teliti untuk mengamati prosedur penjagaan kesihatan (Ismail et al., 2016) dan kemudahan penjagaan kesihatan (Ismail et al., 2016). Selanjutnya, ia

telah digunakan untuk mengukur prestasi organisasi bukan keuntungan (Kamaruddin et al., 2021; Kasri, 2016; Pailis et al, 2016) dan untuk merancang model pembangunan manusia (Oladapo & Rahman, 2016). Beberapa penyelidikan mengenai sektor awam juga menggunakan konsep ini untuk mengukur prestasi kakitangan awam (Mohamad et al., 2016) dan visi prestasi etika dalam Islam (Bedoui & Mansour, 2014).

Dalam membincangkan kepelbagaian bidang ilmu, politik dan dasar negara, secara amnya *Maqasid Syariah* telah dihuraikan secara meluas selain menjadi sebutan di kalangan masyarakat awam (Yunos, 2019). Ini kerana istilah *Syariah* itu sendiri mempunyai 5 tujuan yang menjadi prinsip *Maqasid Syariah* iaitu menjaga dan melindungi i) agama, ii) nyawa, iii) akal, iv) keturunan dan v) harta, manakala sebarang bentuk perlindungan adalah berkait rapat dengan *maslahah* (kepentingan) (Fisol & Hassan, 2019). Kajian lepas merumuskan menjaga masalah awam dengan berpegang kepada *Syariah* adalah sangat dituntut untuk kepentingan sekalian alam (Zakariyah et al., 2017). Jika dilihat dalam konteks kajian ini yang melihat peralihan kepada perakaunan asas akruan iaitu melibatkan perubahan dasar - piawaian perakaunan kerajaan atau lebih dikenali sebagai *Malaysian Public Sector Accounting Standard (MPSAS)*, memfokuskan sejauh mana penggunaan perakaunan akruan di Malaysia memberi impak terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals, "SDG"*) berdasarkan *Maqasid Syariah*. Kajian ini dipercayai mampu memperkukuhkan lagi usaha Jabatan Akauntan Negara dalam melaksanakan sepenuhnya perakaunan asas akruan menjelang tahun 2021. Oleh yang demikian, kejayaan amalan perakaunan akruan tidak hanya dilihat dengan pelaksanaan sahaja, namun lebih penting lagi adalah penggunaan maklumat perakaunan akruan tersebut (Jainal dan Basnan, 2018). Maklumat tersebut menghasilkan pelaporan yang lebih telus yang dapat dimanfaatkan penggunaannya dalam pembuatan keputusan berkaitan pengurusan kewangan dan kemudiannya dapat menyokong kepada pencapaian strategi SDG dalam sektor awam.

3. Metodologi Kajian

Kajian ini telah dilaksanakan dengan menggunakan pendekatan kualitatif melalui kaedah perbincangan kumpulan fokus (*Focus Group Discussion, "FGD"*) yang melibatkan akauntan profesional dengan dua akauntan daripada kementerian, dua akauntan dan seorang pegawai penilai Pihak Berkuasa Tempatan (PBT) di Malaysia. Bagi pengumpulan data, terdapat dua kaedah yang telah digunakan dalam kajian ini iaitu sorotan kajian dan FGD. Bagi kaedah pertama, penelitian ke atas kajian-kajian lepas telah dilakukan dengan membandingkan amalan perakaunan akruan berkaitan dengan aspek yang dibincangkan. Ini diikuti dengan perbincangan kumpulan fokus dengan lima orang responden terlibat secara atas talian (*online*) dengan menggunakan platform *Google Meet*.

Terdapat dua sesi temu bual dijalankan, di mana sesi pertama diadakan pada tarikh 21 Jun 2021 bersama akauntan di peringkat kementerian dan sesi kedua bersama akauntan dan pegawai penilai daripada PBT. Pada setiap sesi perbincangan kumpulan fokus, masa yang diambil adalah sekitar satu hingga dua jam. Ia bertujuan untuk mendapatkan maklumat lanjut

dan gambaran yang lebih jelas tentang penggunaan maklumat perakaunan. Setiap perbualan direkodkan oleh penyelidik, dengan mendapat keizinan pegawai yang terlibat, yang kemudiannya dipindahkan dalam bentuk teks (*transcription*) untuk tujuan analisa data dan rujukan kemudiannya. Penyelidik turut menyediakan nota catatan semasa sesi perbincangan kumpulan fokus berlangsung. Penyelidik juga turut membandingkan nota catatan dengan transkrip yang disediakan untuk memastikan maklumat yang diperolehi melalui temu bual lisan dan yang dicatat adalah sama seperti yang terdapat dalam transkrip. Apabila maklumat yang diperolehi daripada perbincangan kumpulan fokus tidak mencukupi atau memerlukan penjelasan lanjut, penyelidik akan menghubungi akauntan dan pegawai penilai yang terlibat melalui telefon atau emel bagi mendapatkan maklumat tersebut.

4. Dapatan Kajian dan Perbincangan

Penulisan dapatan kajian ini dibahagikan kepada dua iaitu mengenai latar belakang peserta perbincangan kumpulan fokus dan penggunaan maklumat perakaunan akruan dan impak terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*.

4.1 Latar Belakang Peserta

Jadual 1: Maklumat Latar Belakang Peserta

Peserta	Jantina	Tempat Bertugas	Jabatan/Unit	Jawatan
K1-A	Lelaki	Kementerian (K1)	Bahagian Akaun	Akauntan
K1-B	Perempuan	Kementerian (K1)	Bahagian Akaun	Akauntan
PBT1-C	Lelaki	Pihak Berkuasa Tempatan (PBT1)	Jabatan Perbendaharaan	Ketua Akauntan
PBT2-D	Perempuan	Pihak Berkuasa Tempatan (PBT2)	Jabatan Kewangan	Akauntan
PBT1-E	Lelaki	Pihak Berkuasa Tempatan (PBT1)	Jabatan Penilaian & Pengurusan Harta	Ketua Penilaian

Berdasarkan tema yang diperolehi daripada sesi FGD, maklum balas peserta dijelaskan dan diringkaskan berdasarkan beberapa aspek penggunaan perakaunan akruan.

4.2 Penggunaan Maklumat Perakaunan Akruan

Maklumat perakaunan merangkumi kesemua maklumat sama ada maklumat dalaman atau luaran bagi pembuatan keputusan (Wood & Sangster, 2002). Ia adalah maklumat yang paling tepat, lengkap dan berfungsi dalam pengurusan kewangan (Mack & Ryan, 2003) dan pembuatan keputusan pihak pengurusan (Mihaela et al., 2012). Kejayaan pelaksanaan perakaunan asas akruan ditentukan antaranya oleh sejauh mana maklumat perakaunan

yang dihasilkan daripada perakaunan asas akruan tersebut digunakan dalam pengurusan kewangan (Jainal & Basnan, 2018). Dapatan kajian ini akan mengenal pasti tahap penggunaan maklumat perakaunan akruan oleh kakitangan awam di Malaysia dalam belanjawan, pengurusan aset dan liabiliti, penilaian prestasi dan penzahiran akauntabiliti serta hubung kait dengan SDG berdasarkan *Maqasid Syariah*.

4.2.1 Belanjawan

Peserta dalam perbincangan kumpulan fokus diminta memberi pandangan mereka mengenai penggunaan maklumat perakaunan akruan dalam belanjawan. Berkenaan perkara ini, peserta K1-B menyatakan bahawa:

“Di peringkat kementerian kategori belanjawan sebelum ini tidak mempunyai perakaunan akruan. Maklumat belanjawan adalah berdasarkan peratus (%) belanja dan sasaran untuk tahun berikutnya. Belanjawan adalah berdasarkan cash basis. Apabila implementasi sistem perakaunan akruan di kementerian, maklumat belanjawan adalah berdasarkan perakaunan akruan. Penggunaan sistem perakaunan akruan berjaya membuat perbelanjaan menjadi lebih teratur”.

Hasil dapatan ini selari dengan dapatan kajian Scheers (2005), di mana maklumat perakaunan akruan digunakan dalam kawalan kewangan dan membentuk pengurusan dalaman yang lebih cekap dan berkesan, meningkatkan tahap kerelevanan Laporan Kewangan. Tujuan umum bagi pembuatan keputusan ekonomi (Micallef, 1994), seperti dalam perancangan belanjawan serta membuat perbandingan prestasi antara organisasi yang lebih baik (Zarandi et al., 2013). Selain daripada itu, peserta K1-A juga menyatakan penggunaan perakaunan akruan di dalam belanjawan adalah:

“Apabila sistem belanjawan menjadi teratur dan terkawal, prestasi belanjawan juga dapat dipantau dari semasa ke semasa dan pemantauan akan dibuat ke atas setiap jabatan/bahagian/agensi terlibat. Penggunaan sistem perakaunan akruan ini juga membolehkan kementerian untuk mengawal perbelanjaan setiap agensi/jabatan/bahagian yang bernaung di bawah kementerian terbabit”.

Sungguhpun demikian, hasil dapatan perbincangan kumpulan fokus ini bercanggah dengan kajian Paulsson (2006), di mana maklumat perakaunan akruan didapati kurang digunakan dalam belanjawan dan pembuatan polisi. Hal ini kerana, maklumat perakaunan akruan yang sukar untuk difahami. Connolly dan Hyndman (2006) menyatakan bahawa maklumat perakaunan akruan kurang digunakan berdasarkan dapatan kajiannya yang mendapati pekerja Jabatan Kewangan berpendapat maklumat perakaunan akruan hanya dibincangkan di peringkat pengurusan tertinggi sahaja.

Manakala Akauntan Operasi pula kurang pasti sama ada maklumat perakaunan akruan telah digunakan kerana prosesnya yang sangat kompleks dan kurang difahami. Namun begitu, para peserta Kementerian dan PBT kesemuanya menegaskan bahawa penggunaan maklumat akruan banyak membantu dalam menyediakan belanjawan. Akauntan PBT1-C menyebut maklumat akruan perlu diambil kira untuk memastikan kecukupan tunai dalam pengurusan dana. Sebagai contoh, belanjawan pembayaran kepada pembekal, pembangunan dan seumpamanya, menjelaskan penggunaan perakaunan akruan dalam penyediaan perancangan belanjawan dan bagi tujuan pemantauan belanjawan tersebut. Kajian ini menyatakan penggunaan maklumat perakaunan akruan dapat menyokong usaha untuk mencapai SDG, keberhasilan daripada belanjawan yang diuruskan menggunakan maklumat akruan.

4.2.2 Pengurusan Aset dan Liabiliti

Semasa perbincangan kumpulan berfokus dijalankan, peserta K1-B mengakui menggunakan perakaunan akruan dapat memudahkan tugas. Antara perkara yang sering ditimbulkan adalah berkaitan rekod keluar dan masuk serta pelaporan. Dapatan ini menunjukkan betapa pentingnya penggunaan maklumat perakaunan akruan di dalam pengurusan aset dan liabiliti. Berikut antara intipati maklumat yang disampaikan oleh peserta K1-B:

“Penggunaan maklumat perakaunan akruan juga dapat dilihat dalam pengurusan aset. Daftar aset dan rekod keluar masuk menjadi lebih tersusun dan cekap dengan penggunaan perakaunan akruan membolehkan pelaporan dihasilkan dengan lebih mudah. Jika sebelum ini, rekod adalah dengan menggunakan manual, tetapi dengan penggunaan maklumat perakaunan akruan lebih memudahkan Kementerian untuk mengetahui aset-aset yang masih diguna pakai atau yang telah lupus”.

Beberapa kajian mendapati maklumat perakaunan akruan paling banyak digunakan dalam pembuatan keputusan (Andriani et al., 2010; Kober et al., 2010; Sousa et al., 2013) serta membuat perbandingan prestasi antara organisasi yang lebih baik (Zarandi et al., 2013). Namun begitu, menurut Christiaens et al. (2008), tidak seperti kebanyakan aset fizikal kerajaan, masih terdapat persoalan dan perdebatan dari segi pelaporan kewangan pengurusan aset. Begitu juga dengan aset infrastruktur awam seperti jalanraya, jambatan dan terusan yang mempunyai nilai yang tinggi dan jangka hayat yang panjang sehingga menimbulkan persoalan tentang penentuan kos perolehan dan susut nilai aset berkenaan (Wynne, 2004).

Menyentuh isu yang seringkali dibangkitkan tentang salah satu kesukaran dalam proses peralihan kepada perakaunan asas akruan ialah menentukan baki awal aset tetap. Peserta PBT1-C memperincikan aspek penilaian semula aset yang agak mencabar. Proses ini dilakukan bukan sekadar setahun sebaliknya sehingga tiga tahun. Walau bagaimanapun, bagi kategori aset warisan yang dikatakan menjadi isu di Kementerian, peserta PBT2-D

berkata aset warisan tidak relevan di PBT beliau kerana aset warisan seperti muzium dikelolakan oleh Kementerian Pelancongan. Namun, aset hidup dimiliki seperti haiwan iaitu angsa di taman tasik adalah relevan bagi kebanyakan PBT dan diakui penilaian semula aset berkenaan juga agak mencabar. Beliau menambah lagi, PBT2 telah mula menggunakan perakaunan akruan secara sepenuhnya dalam penyata kewangan sejak 2017 dan tahun 2019 telah mempersembahkan Penyata Kewangan berasaskan akruan sepenuhnya, termasuk item aset dan susut nilai. Di peringkat persekutuan, selaras dengan pelaksanaan perakaunan akruan pada tahun 2018, JANM telah menggubal piawaian perakaunan asas akruan yang dikenali sebagai MPSAS (*Malaysian Public Sector Accounting Standards*). Bermula tahun 2013, terdapat 25 MPSAS telah diadaptasi daripada *International Public Sector Accounting Standards (IPSAS)* yang dikeluarkan oleh *International Federation of Accountants (IFAC)*. Manakala, Jawatankuasa Pemandu Perakaunan Akruan (JPPA) bertanggungjawab dalam menyediakan dan meluluskan polisi perakaunan akruan melibatkan aset, liabiliti, hasil dan perbelanjaan.

Peserta PBT1-C berkata kesan ketara terhadap Penyata Kewangan bukan disebabkan peralihan kepada perakaunan akruan tetapi sebelum dan selepas MPSAS. Beliau memberi contoh senario sebelum MPSAS, pelaksanaan akruan bergantung kepada PBT masing-masing. Misalnya, PBT2 menggunakan perakaunan akruan dalam hasil cukai manakala PBT1 untuk cukai dan sewaan. Begitu juga dengan aset, sebelum MPSAS diperkenalkan, PBT1 hapus kira (*write off*) aset yang bernilai rendah dan menjejaskan amaun aset modal. Hal ini menunjukkan MPSAS dilihat menyumbang kepada keseragaman dalam pelaksanaan perakaunan akruan.

Seperti jua di kementerian yang disebut oleh akauntan K1-B, aset di PBT2 akan dipermodalkan apabila nilai aset mencecah RM2,000 yang sebelumnya adalah RM1,000. Ini menjelaskan bahawa penentuan nilai siling tersebut bergantung kepada pihak pengurusan seperti yang dinyatakan oleh akauntan PBT2-D. Penentuan hal sebegini diletakkan di bawah skop Jawatankuasa Kewangan PBT dan diperakukan dalam Mesyuarah Ahli Majlis. Ini meringkaskan bahawa amalan perakaunan akruan di Persekutuan juga mempengaruhi pelaksanaan di peringkat kerajaan yang lain.

Pegawai penilaian PBT2-E pula menerangkan tentang beberapa jenis aset yang biasanya memerlukan penilaian. Nilai siling yang dimaksudkan merujuk kepada inventori manakala jika di bawah RM2,000 aset akan dikategorikan sebagai hapus kira aset. Berdasarkan MPSAS 12 berkaitan inventori, seperti jua aset hidup beberapa faktor perlu diambil kira. Antaranya termasuk faktor ekonomi, permintaan, fasiliti, peluang pekerjaan dan pusat pendidikan yang mempengaruhi kenaikan harta tanah di sesuatu kawasan.

MPSAS digunakan sepenuhnya pada tahun 2017 yang menggesa organisasi untuk mengenal pasti nilai semasa aset, justeru penilaian semula perlu dibuat terhadap aset hartanah seperti bangunan. Contoh lain kesan MPSAS ialah jalan raya dipermodalkan sebagai aset, antara lain termasuk perabot di tepi-tepi jalan, longkang dan seumpamanya

yang membezakan perbelanjaan hasil bagi tujuan penyelenggaraan. Akauntan PBT1-C pula menjelaskan apabila aset mengikut nilai semasa, nilai aset menjadi tinggi dan begitu juga susut nilai yang tinggi yang memberi kesan Penyata Kewangan yang negatif. Yang-Dipertua (YDP) Majlis pula tidak dapat menerima Penyata Kewangan yang negatif, yang menyatakan pemikiran pihak pengurusan yang masih tidak secara akruan.

Akauntan PBT1-C mengakui tadbir urus PBT adalah di bawah bidang kuasa *Local Government Act (LGA) 1976* Akta 171 dan dalam masa yang sama PBT juga menggunakan MPSAS. Beliau menambah lagi Akta LGA tidak pernah digubal dan ia tidak standing dengan MPSAS dalam perihal perakaunan dan pelaporan kerana Akta 171 hanya menyentuh bab kewangan secara minima, di Bahagian V: Kewangan yang tidak dikemaskini dengan perubahan zaman menjadikan MPSAS sebagai rujukan PBT. Walaupun PBT diletakkan dalam bidang kuasa kerajaan persekutuan KPKT, LGA Akta 171 memperuntukkan bahawa penyata kewangan hendaklah disediakan mengikut kehendak kerajaan negeri masing-masing. Justeru, dengan adanya MPSAS ia dapat membantu keseragaman perakaunan dan pelaporan yang lebih berdaya saing dan ini menunjukkan peranan peringkat persekutuan dilihat amat penting dalam memastikan penyelarasan di semua peringkat sektor awam.

Menurut Bahari et al. (2019), perakaunan akruan merupakan asas perakaunan yang membolehkan liabiliti hutang kerajaan dipantau, pelaporan kedudukan serta prestasi kerajaan dijana dengan lebih telus dan tepat. Selain itu, perakaunan akruan memberikan maklumat mengenai kedudukan kewangan keseluruhan entiti dan stok aset dan liabiliti semasa (Mussa, 2007). Oleh itu, pihak kerajaan memerlukan maklumat ini untuk membuat keputusan mengenai kemungkinan membiayai perkhidmatan yang ingin mereka berikan dan untuk menunjukkan kebertanggungjawaban dan akauntabiliti kepada masyarakat (Masruki et al., 2022) terhadap pengurusan aset dan liabiliti mereka. Sebagai tambahan, maklumat ini diakui dalam penyata kewangan dan kerajaan dapat merancang keperluan penyelenggaraan dan penggantian aset di masa hadapan. Pihak kerajaan juga dapat merancang pembayaran balik liabiliti sedia ada dan menguruskan kedudukan tunai dan keperluan pembiayaan dengan lebih baik (Mahat & Ali, 2012).

Ini disokong oleh peserta K1-A yang menyatakan bahawa:

“...amalan perakaunan akruan tersebut mempengaruhi kedudukan kewangan organisasi dari sudut pelaporan aset, liabiliti dan ekuiti. Secara tidak langsung, ia memberi impak kepada skop kerja. Hal ini kerana item-item yang baru akan wujud dengan adanya sistem perakaunan akruan ini. Saya bersetuju dengan penggunaan maklumat perakaunan akruan ini membuatkan urusan menjadi lebih cepat.”

Chan (2003) menegaskan perakaunan akruan memerlukan organisasi untuk menyimpan rekod lengkap aset dan liabiliti untuk memudahkan pengurusan aset yang lebih baik. Ini

termasuk perihal penyelenggaraan, polisi penggantian, pengenalpastian dan pelupusan lebih aset, dan pengurusan risiko seperti kerugian akibat pencurian atau kerosakan yang lebih berkesan dan cekap. Pengenalpastian aset dan pengiktirafan susut nilai membantu pengurus untuk memahami kesan penggunaan aset tetap dalam penyampaian perkhidmatan, dan mendorong pengurus untuk mempertimbangkan kaedah alternatif untuk mengurus kos dan memberikan perkhidmatan (Wooldridge et al., 2001). Begitu juga di PBT, penggunaan maklumat akruan dalam pengurusan liabiliti tidak menjadi isu dalam amalan perakaunan akruan kerana mereka telah lama mengamalkan perakaunan akruan.

Oleh yang demikian, kajian ini merumuskan penggunaan maklumat yang diperolehi daripada perakaunan akruan memperlihatkan impak terhadap pencapaian SDG, melalui pengurusan aset dan liabiliti yang lebih baik, sejajar dengan prinsip *Maqasid Syariah*. Selain itu, PBT turut mengenengahkan perakaunan akruan dalam aspek penilaian prestasi, seperti yang dinyatakan oleh para peserta PBT.

4.2.3 Penilaian Prestasi

Perakaunan akruan merupakan asas perakaunan bagi pelaporan kedudukan dan prestasi kerajaan yang lebih tepat dan telus. Menurut Lampe et al. (2015), amalan perakaunan akruan memberi kesan yang positif kepada kecekapan PBT di Jerman. Di negara-negara membangun seperti United Kingdom, Australia, Sweden, Switzerland dan New Zealand antara negara yang dikenali telah melaksanakan perakaunan akruan sejak awal tahun 90an telah berjaya meningkatkan kecekapan sektor awam. Di New Zealand misalnya, penggunaan perakaunan akruan selepas negara mengalami kemelesetan ekonomi dan longgokan hutang membuktikan kejayaan mereka daripada belunggu krisis kewangan (Yulianti et al., 2019). Kajian lepas membuktikan pelaksanaan perakaunan akruan digunakan dalam penilaian prestasi, walaupun dapatan yang tidak seragam, namun kelebihan penggunaan perakaunan akruan tidak dinafikan (Basnan et al., 2013; Tran & Noguchi, 2020). Dapatan ini disahkan oleh Peserta K1-A di mana beliau menyatakan:

“Apabila sistem belanjawan menjadi teratur dan terkawal, prestasi belanjawan juga dapat dipantau dari semasa ke semasa dan penilaian akan dibuat ke atas setiap jabatan/bahagian/agensi terlibat. Penggunaan sistem perakaunan akruan ini juga membolehkan Kementerian untuk mengawal perbelanjaan setiap agensi/jabatan/bahagian yang bernaung di bawah Kementerian terbabit.”

Peserta K1-A turut menambah sokongan mengenai keperluan dalam pengurusan prestasi oleh sesebuah organisasi:

“Seperti yang telah dimaklumkan agensi/jabatan/bahagian yang terdapat di dalam setiap Kementerian akan dipantau prestasi. Pemantauan prestasi ini termasuk juga perkara berkaitan akaun dan kewangan. Sebagai contoh jika

sesebuah agensi/jabatan/bahagian telah menetapkan sasaran belanjawan/perbelanjaan mengikut tempoh masa yang ditetapkan seperti 3 bulan/6 bulan dan 1 tahun. Sasaran belanjawan/perbelanjaan tersebut mestilah dipatuhi. Jika tidak mengikut seperti yang ditetapkan pihak naziran setiap kementerian akan memberi surat tunjuk sebab atas ketidakpatuhan tersebut. Kebiasaannya pihak naziran akan turun padang untuk melihat dokumen transaksi bagi memastikan pihak agensi/jabatan/bahagian dapat mematuhi polisi atau dasar yang telah ditetapkan.”

Menurut Jainal dan Basnan (2018), isu teknikal merupakan di antara faktor yang menyekat kepada kejayaan pelaksanaan perakaunan akruan, termasuk penilaian aset yang kurang tepat, kekurangan staf yang berkecukupan, kekurangan pengetahuan perakaunan asas akruan dan masalah IT. Sungguhpun demikian, penggunaan maklumat perakaunan akruan di PBT dalam pembuatan keputusan berkaitan pengurusan prestasi adalah tinggi.

Peserta PBT1-C melihat perakaunan akruan dalam penilaian prestasi dari sudut yang berbeza. Terdapat beberapa penilaian prestasi di PBT yang dikendalikan oleh Kementerian Perumahan dan Kerajaan Tempatan (KPKT), negeri dan pengurusan PBT sendiri, namun elemen akruan adalah tidak berkaitan. Misalnya, dari segi penyediaan belanjawan, jika defisit tiada markah yang diberikan, jika lebih belanjawan maka markah penuh akan diberikan manakala jika belanjawan seimbang markah adalah separuh. Ini menjelaskan bahawa sistem penilaian prestasi tersebut tidak menyokong kepada penggunaan perakaunan akruan. Sedangkan bagi menaiktaraf pembangunan, belanjawan menunjukkan defisit kerana peruntukan perbelanjaan dan penggunaan rizab diperlukan bagi tujuan pembangunan tersebut. Oleh yang demikian, jika belanjawan defisit dihantar kepada KPKT, tiada markah diberikan. Ini jelas menunjukkan perbandingan prestasi adalah merujuk kepada elemen tunai sahaja dan asas akruan dilihat seperti tidak relevan.

Kesukaran untuk memahami perakaunan akruan dan mengaplikasikan amalan tersebut ditambah pula dengan kekurangan kemahiran, kekurangan bilangan staf, tarikh akhir kerja yang ketat di samping bidang tugas kerja yang padat menyukarkan untuk menikmati faedah penggunaan perakaunan akruan yang optimum. Justeru, isu ini perlu diberi perhatian oleh pihak pengurusan organisasi dan pihak berwajib dalam meminda dasar dan polisi berkaitan, kerana kajian lepas menunjukkan peranan perundangan, penguatkuasaan dan garis panduan sangat berkesan dalam pelaksanaan sesuatu peralihan (Doorgakunt et al., 2021; Masruki et al., 2018). Justeru itu, dapatan kajian ini kurang tampak impak penggunaan perakaunan akruan dalam penilaian prestasi terhadap SDG, disebabkan kesukaran pelaksanaan perakaunan akruan itu sendiri dalam penilaian prestasi.

4.2.4 Penzahiran Akauntabiliti

Maklumat perakaunan akruan agak kurang digunakan di tahap maksimum kerana ia lebih digunakan untuk menzahirkan akauntabiliti kepada Jabatan Audit (Alijarde, 1997). Peserta

PBT1-C juga bersetuju dengan keperluan mematuhi juruaudit bukan pembuat keputusan seperti ahli majlis dan seumpamanya. Perkara ini turut dibuktikan dalam kajian yang dijalankan oleh Masruki et al. (2018) yang menjelaskan tanggapan audit mempengaruhi pendedahan maklumat dalam laporan tahunan. Mack dan Ryan (2006) mendapati maklumat perakaunan akruan lebih digunakan untuk memenuhi tujuan akauntabiliti kewangan dan akauntabiliti awam berbanding tujuan pembuatan keputusan. Ini kerana maklumat yang disediakan daripada laporan untuk memenuhi akauntabiliti agak berbeza dengan maklumat yang bersifat pembuatan keputusan memandangkan sektor awam yang merupakan sektor yang bukan bermotifkan keuntungan dan kedudukan kewangan bukan sesuatu yang kritikal (Masruki et al., 2022). Oleh yang demikian, Peserta K1-A menyatakan bahawa:

“Seperti yang telah dimaklumkan agensi/jabatan/bahagian yang terdapat di dalam setiap kementerian akan dipantau prestasi. Pemantauan prestasi ini termasuk juga perkara berkaitan akaun dan kewangan. Sebagai contoh, jika sesebuah agensi/jabatan/bahagian telah menetapkan sasaran belanjawan mengikut tempoh masa yang ditetapkan seperti 3 bulan/6 bulan dan 1 tahun. Sasaran belanjawan tersebut mestilah dipatuhi. Jika tidak mengikut seperti yang ditetapkan pihak naziran setiap kementerian akan memberi surat tunjuk sebab atas ketidakpatuhan tersebut. Kebiasaannya pihak naziran akan turun padang untuk melihat dokumen transaksi bagi memastikan pihak agensi/jabatan/bahagian dapat mematuhi polisi atau dasar yang telah ditetapkan”.

Dapatan ini disokong oleh Stewart (1984) yang mengklasifikasikan akauntabiliti kepada 4 tujuan iaitu akauntabiliti untuk pematuhan, prestasi, prosedur dan polisi. Peserta K1-B turut bersetuju bahawa penggunaan maklumat perakaunan akruan akan menzahirkan akauntabiliti melalui skop kerja yang dilakukan:

“...penggunaan perakaunan akruan ini dapat memudahkan urusan pegawai dalam merekod setiap transaksi/aset dan sebagainya. Hal ini dapat diterjemahkan melalui pelaporan yang bersistematik dan efisien yang mana menzahirkan akauntabiliti dalam tugas secara am dan keseluruhan bagi kementerian”.

Oleh yang demikian, dapatan kajian ini membuktikan bahawa impak amalan perakaunan akruan dapat dimanfaatkan penggunaannya dalam pembangunan belanjawan, pengurusan aset dan liabiliti serta penzahiran akauntabiliti dalam sektor awam, namun dibuktikan sebaliknya bagi tujuan penilaian prestasi. Perbincangan dapatan seterusnya melihat hubung kait penggunaan perakaunan akruan tersebut terhadap SDG.

4.3 Matlamat Pembangunan Lestari (*Sustainable Development Goals, “SDG”*)

SDG 2030 menggariskan 17 matlamat dan antara SDG yang dipercayai relevan di dalam konteks perakaunan akruan, misalnya: i) SDG1 dan SDG2: Kemiskinan tegar dan kelaparan sifar - perakaunan akruan dapat melaporkan kedudukan kewangan dengan lebih tepat dengan keseimbangan disiplin fiskal dipercayai mampu menyokong kepada belanjawan berhemat yang mampu menyumbang kepada impak sosio-ekonomi; ii) SDG11: Bandar dan komuniti yang mampan - PBT telah mengguna pakai perakaunan akruan lebih dari 20 tahun, sewajarnya mampu mengurus kewangan secara lebih berhemat dalam meningkatkan kualiti hidup komuniti dan pembangunan setempat yang lebih sejahtera. iii) SDG 16: Keamanan, keadilan dan institusi berwibawa - perakaunan akruan mampu memberi gambaran kedudukan kewangan institusi sektor awam yang lebih menyeluruh dan tepat. Umumnya, dapatan kajian ini mendapati PBT telah terdahulu mengamalkan perakaunan akruan berbanding kementerian. PBT juga menyebut telah mula menyediakan pelaporan bagi setiap SDG dan terdapat hubung kait kedua-dua aspek pelaksanaan perakaunan akruan dan penggunaan maklumat akruan tersebut dapat dilihat secara tidak langsung. Sebaliknya daripada kaca mata peserta di kementerian, perakaunan akruan agak terkemudian dan perkaitan antara SDG dan juga perakaunan akruan tidak disedari secara langsung.

Berbeza dengan PBT di Lembah Klang yang terlibat dalam FGD ini, mereka berkata penyediaan laporan khas SDG VLR (*Voluntary Local Review*) adalah digalakkan untuk penilaian prestasi. Ini terbukti dengan laporan akhbar tempatan yang melaporkan PBT berkenaan telah melaporkan pengukuran sasaran dan penunjuk SDG yang disasarkan sehingga tahun 2030 (Utusan, 2021). Justeru itu, dapat disimpulkan bahawa kesemua peserta PBT bersetuju bahawa perakaunan akruan yang mereka amalkan sebenarnya memberi impak terhadap SDG tanpa disedari secara tidak langsung. Berikut adalah antara ungkapan Peserta K1-B mengenai hubung kait perakaunan akruan dan SDG:

“Pertama kali juga saya mendengar perkaitan mengenai SDG ini dengan perakaunan akruan. Pada pandangan saya, mungkin secara indirectly ia mempunyai kaitan. Sebagai contoh, SDG 1: Secara indirectly perakaunan akruan mewujudkan transaksi yang transparent. Hal ini seterusnya dapat mengelakkan pembaziran sumber atau dana yang akan dapat digunakan untuk menyumbang kepada perkara yang lebih penting bagi pembangunan masyarakat yang kurang bekemampuan”.

Selain itu, Peserta K1-A turut bersetuju dengan mengulas seperti berikut:

“Ia benar, secara tidak langsung perakaunan akruan ini mempunyai kaitan dengan SDG. Sebagai contoh, kementerian kami adalah pihak yang terlibat secara langsung dengan pengurusan aset keselamatan negara. Ini dapat dikaitkan dengan SDG 11: Bandar dan komuniti mampan. Melalui penggunaan maklumat perakaunan akruan/sistem perakaunan akruan,

pihak kami dapat meningkatkan tahap keselamatan negara. Aset-aset pihak polis dan lain-lain dapat dipertingkatkan melalui penggunaan sistem yang cekap. Prestasi aset-aset ini juga dapat dipantau daripada semasa ke semasa. Misalnya, kereta polis, ia merupakan aset dan jika kita dapat lihat pada masa kini, kereta polis telah banyak yang dinaik taraf kepada jenama yang lebih reliable dan mampu untuk bersaing dengan penjenayah. Jika dahulu untuk mengejar penjenayah juga agak sukar kerana faktor kenderaan yang tidak berdaya saing. Pesenjataan juga telah dinaik taraf mengikut situasi semasa dunia yang lebih moden. Hal ini seterusnya membawa kepada SDG 16 iaitu keamanan, keadilan dan institusi berwibawa. Perakaunan akruan seharusnya mampu memberi gambaran kedudukan kewangan institusi sektor awam yang lebih menyeluruh dan tepat”.

Peserta sesi perbincangan kumpulan fokus turut merasakan terdapat beberapa SDG lain yang dipraktikkan dalam amalan pengurusan organisasi mereka.

Para peserta PBT ada menyebut beberapa SDG bukan hanya agenda alam sekitar, ia adalah juga agenda kesejahteraan komuniti dan pertumbuhan ekonomi menyeluruh. Antara yang telah dipraktikkan berkaitan SDG 1: Kemiskinan tegar - Kewajipan kepada PBT untuk memastikan tiada kemiskinan dalam komuniti setempat. Misalnya, melalui kaedah penyewaan gerai seliaan PBT dengan harga yang jauh lebih murah berbanding kadar sewaan di pasaran umum.

Selain daripada itu, SDG 2: Kelaparan sifar - PBT mempunyai kuasa yang meluas dalam memastikan susun atur dan perancangan sesebuah kawasan, bagi memastikan komuniti di sesebuah kawasan terjamin dari sudut kemanusiaan dalam mendapatkan barangan keperluan dengan harga yang murah. Antaranya, pewujudan pasar malam adalah menjadi satu kewajipan di sesebuah kawasan penempatan yang padat. Hal ini kerana, pembangunan yang pesat di sesebuah kawasan akan menjadikan kos keperluan meningkat. Oleh itu, dengan kewujudan tapak pasar malam yang disewakan dengan harga yang murah oleh PBT akan dapat menghidupkan sesebuah kawasan dan seterusnya memastikan tiada kejadian kelaparan dalam masyarakat. Seterusnya, SDG 3: Kesejahteraan dan kesihatan yang baik - Memastikan kesejahteraan komuniti setempat berada dalam keadaan yang melalui perkhidmatan yang ditawarkan. SDG 11: Bandar dan komuniti yang mampan - PBT menyediakan perkhidmatan kebersihan dan memastikan persekitaran yang cantik dalam memastikan keselesaan komuniti terjamin.

Pandangan yang diberikan oleh peserta perbincangan kumpulan fokus ini selari dengan kajian lepas yang menyatakan kerajaan tempatan adalah organisasi yang ideal untuk mengenal pasti orang yang hidup dalam kemiskinan di kawasan PBT. Tanggungjawab PBT untuk perkhidmatan asas tempatan, seperti air dan sanitasi, menjadikan agensi-agensi perkaitan rakan pembangunan dalam pencapaian SDG 1. Menurut Dr. Azmizam Abdul

Rashid yang merupakan Timbalan Ketua Pegawai Eksekutif, Urbanice Malaysia di bawah Kementerian Perumahan dan Kerajaan Tempatan (KPKT), PBT juga boleh memainkan peranan dengan membangunkan pembangunan ekonomi tempatan strategi untuk mewujudkan pekerjaan dan, meningkatkan pendapatan.

Selain daripada itu, beliau menyatakan SDG 2 daripada perspektif PBT boleh menyokong pertanian pengeluaran dan pertumbuhan ekonomi tempatan dengan menguatkan pengangkutan infrastruktur dan pasaran untuk menggalakkan rantai makanan tempatan PBT mesti memastikan warganya mampu membeli dan memasak makanan yang selamat, berpatutan dan berkhasiat. SDG 11: Pembangunan memberi penekanan kepada peningkatan kualiti hidup rakyat, kesamarataan pembangunan dan pengekalan alam sekitar. Ini juga selaras dengan komitmen agenda terhadap pembangunan mampan global (Rashid, 2018). PBT juga dilihat terserlah dalam mengaplikasikan SDG memandangkan peranan mereka yang lebih hampir kepada komuniti setempat berbanding kementerian.

Kesimpulannya, kajian ini melihat aspek pelaporan yang lebih telus dengan mengamalkan perakaunan akruan dalam kalangan sektor awam, akhirnya dapat menyokong usaha terhadap pencapaian SDG. Secara spesifik, pelaksanaan perakaunan akruan dan penggunaannya sebagai impak dapat menyokong kepada pengurusan dan pelaporan kewangan yang lebih telus dan komprehensif mampu merealisasikan usaha ke arah pencapaian SDG 2030 sejajar dengan objektif perakaunan akruan yang disasarkan oleh pihak kerajaan Malaysia (JANM, 2014).

4.4 Maqasid Syariah

Dalam pada masa yang sama *Maqasid Syariah* telah dihuraikan secara meluas, ini kerana istilah *Syariah* itu sendiri mempunyai 5 tujuan yang menjadi prinsip *Maqasid Syariah* iaitu menjaga dan melindungi i) agama (*al-din*), ii) nyawa (*al-nafs*), iii) akal (*al-aql*), iv) keturunan (*al-nasb*) dan v) harta (*al-mal*), manakala sebarang bentuk perlindungan adalah berkait rapat dengan *maslahah* (kepentingan). Kajian lepas merumuskan menjaga *maslahah* awam dengan berpegang kepada *Syariah* adalah sangat dituntut untuk kepentingan sekalian alam (Zakariyah et al., 2017).

Jika dilihat dalam konteks peralihan kepada perakaunan asas akruan iaitu melibatkan perubahan dasar - piawaian perakaunan kerajaan atau lebih dikenali sebagai *Malaysian Public Sector Accounting Standard (MPSAS)* dengan mensasarkan pelbagai faedah. Berdasarkan dapatan FGD, pada mulanya para peserta tidak dapat memahami perkaitan SDG, *Maqasid Syariah* dan perakaunan akruan. Namun begitu, melihat kepada penelitian lima elemen *Maqasid Syariah* itu sendiri sebenarnya ia mempunyai hubung kait dengan fungsi perakaunan. Peserta K1-A menyatakan bahawa:

“Pada pandangan saya, agak sukar juga untuk saya memahami perkaitan Maqasid Syariah dengan perakaunan akruan ini. Since latar belakang pendidikan saya bukan di dalam bidang keagamaan. Tetapi saya bersetuju jika melihat item-item atau elemen Syariah itu sendiri memberi maksud yang sangat baik kepada masyarakat. Mungkin saya dapat kaitkan elemen Syariah seperti agama dengan perakaunan akruan: Sebagai contoh melalui penguatkuasaan oleh agensi/jabatan/bahagian di bawah kementerian ini membantu untuk menjaga agama Islam. Bahan-bahan seperti percetakan, penerbitan dan perfileman semua ini memerlukan kebenaran daripada pihak kami bagi menjaga agama. Contoh-contoh lain juga perkaitan antara elemen Syariah seperti keturunan dengan perakaunan akruan adalah seperti Jabatan Pendaftaran Negara (JPN). Segala transaksi dan maklumat berkaitan hasil/perbelanjaan ada melibatkan penggunaan perakaunan akruan. Ini sedikit sebanyak dapat dilihat bahawa penggunaan perakaunan akruan ini sangat penting dan berkait dengan SDG yang hakikatnya selaras dengan elemen Maqasid Syariah”.

Peserta K1-B juga menyatakan persetujuan bahawa:

“Benar. Saya setuju Maqasid Syariah ini mempunyai kaitan juga dengan SDG dan Perakaunan Akruan. Mungkin banyak lagi contoh-contoh lain yang dapat kita lihat pada masa akan datang”.

Selaras dengan konsep *Maqasid Syariah* itu sendiri yang berasal daripada ontologi dan epistemologi Islam dengan *Al-Quran*, *As-Sunnah*, *Ijma* dan *Qiyas* sebagai sumber asas keputusan (Said et al., 2017). *Maqasid Syariah* merangkumi bidang aktiviti manusia sebagai suatu ibadah di mana aktiviti-aktiviti ini dilaksanakan melalui satu set aktiviti berdasarkan operasi. Menurut Imam Ghazali, matlamat *Maqasid Syariah* adalah untuk melindungi kesejahteraan orang ramai yang terletak pada menjaga keimanan (*deen*), kehidupan mereka (*nafs*), akal (*aql*), keturunan mereka (*nasb*) dan kekayaan mereka (*mal*) (Kamaruddin et al., 2021; Fisol & Hassan, 2019). Tema yang mendasari adalah merealisasikan faedah untuk masyarakat (*maslahah*) atau kepentingan awam. Lima faktor tersebut berada di bawah *Dharuriyyah* atau Keperluan. Melalui pendekatan *Maqasid Syariah* yang meliputi perkara asas iaitu menjaga dan melindungi serta memiliki (Dusuki & Bouheraoua, 2011). Melalui penerapan elemen *Maqasid Syariah* penggunaan maklumat perakaunan akruan ini dapat dilaksanakan dengan lebih berkesan agar ianya dapat dirasai oleh semua lapisan masyarakat secara adil dan saksama. Peserta PBT1-C juga menambah antara aplikasi elemen dalam *Maqasid Syariah* sewajarnya dipraktikkan secara am, begitu juga dalam penyediaan perakaunan asas akruan. Ini termasuk prinsip amanah, adil dan telus dalam pelaporan dan pembuatan keputusan. Manakala K1-A menegaskan kepatuhan kepada polisi adalah utama dalam pelaporan ini yang selari dengan prinsip-prinsip Islam ke arah pelaporan yang telus.

Seiring dengan SGD 16: Keamanan, keadilan dan institusi berwibawa, penggunaan perakaunan akruan sewajarnya menghasilkan pelaporan yang mampu memberi gambaran menyeluruh berkaitan kedudukan kewangan institusi sektor awam dengan lebih tepat dan dipercayai. Seterusnya, pengurusan kewangan yang baik hasil pelaksanaan perakaunan akruan dan penggunaan maklumat akruan tersebut turut menyokong pelbagai strategi dalam SDG yang hakikatnya selari dengan elemen *Maqasid Syariah* untuk memastikan keadilan dan kebajikan rakyat dalam meningkatkan *Maqasid Syariah* (Laela et al., 2018; Fisol dan Hassan, 2019).

5. Rumusan

Secara keseluruhannya, hasil kajian ini mengesahkan bahawa penggunaan maklumat perakaunan akruan di kementerian dan PBT menyokong dalam menguruskan aktiviti belanjawan, pengurusan aset dan liabiliti walaupun kurang penggunaannya dalam pengurusan prestasi, namun masih dapat membawa kepada penzahiran akauntabiliti dengan pelaporan yang menyeluruh dan lebih tepat. Melihat kepada strategi yang terdapat di dalam SDG dan elemen *Maqasid Syariah*, para peserta sependapat dengan jelas signifikan penggunaan maklumat akruan, bukan setakat pelaksanaan perakaunan akruan sahaja. Justeru, kajian ini menambah literatur sedia ada dalam kajian perakaunan akruan.

Selain itu, kajian ini dapat mengisi jurang kajian lepas dengan melihat impak penggunaan maklumat perakaunan akruan terhadap SDG dalam sektor awam. Dapatan kajian ini boleh dijadikan panduan kepada pihak berwajib, khususnya untuk memastikan maklumat akruan digunakan sebaik mungkin dalam pembuatan keputusan yang menentukan kejayaan pelaksanaan perakaunan akruan. Dengan mengetahui impak penggunaannya dalam kalangan kakitangan awam, pihak kerajaan boleh terus mempertingkatkan latihan berkaitan dan mengenal pasti sebarang kekangan untuk terus memperkukuhkan pelaksanaan perakaunan akruan sebagai ketersediaan. Akhirnya, dengan pelaksanaan perakaunan akruan dan penggunaan maklumat akruan tersebut dalam sektor awam, secara tidak langsung akhirnya dapat menyokong ke arah pencapaian SDG yang secara prinsipnya dapat meningkatkan *Maqasid Syariah*. Oleh yang demikian, kedua-dua pihak di peringkat kementerian dan PBT menyokong kepada rangka kerja pelaporan berintegrasikan SDG berlandaskan *Maqasid Syariah* sejajar dengan agenda nasional iaitu Wawasan Kemakmuran Bersama (WKB) 2030.

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The Effects of Pensions Administration on Earnings Management of Listed Pension Companies in Nigeria

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Abstract

Purpose: This paper examined the effect of pension administration on earnings management (EM) of listed pension companies in Nigeria.

Design/Methodology/Approach: This study employed an expo factor research design, and the study population was 35 listed pension companies in Nigeria over a study period of between 2013 and 2021. General least square (GLS) regression technique of analysis was employed to examine the study model.

Findings: Result from the generalised least squares regression documented contribution density, and exits had a significant positive relation with EM except for pension fund.

Practical Implications: The study might have practical implications for regulators and governance experts with understanding of related category of agency problems that might arise in the Nigerian context. The research highlighted the potential to improve the effectiveness of pension funds, contribution density, and exit age to achieve their ultimate objective in providing income replacement in retirement by developing portfolio strategies.

Original Value: The study suggested the need for governments and their pension supervisors to consider a more active role in evaluating and proposing the long-term objectives of pension funds, contribution density, and exit ages for various categories of workers, as well as reducing the effect of EM.

Keywords: Pension fund, contribution density, exits age and earnings management.

1.1 Introduction

The government is committed to ensure that older people can live after retirement with the dignity and respect they deserve. To deliver this commitment the government must provide pension contributions that are convenient for workers so that they will have an income or funds which they can draw to enjoy greater security and independence after retirement. The government is also concerned about the potential for low-income earners' take-home pay and how it affects them through the pension contribution (Central Bank of Nigeria, 2019; National Pension Commission, 2019).

These pension funds are affected by many issues. One of them is how managers opportunistically misappropriate the fund through EM, which is a management practice that affects a company's financial reports either to give a positive or negative impression of the periodic smoothing or annual earnings. The techniques adopted by managers included by showing high profits in a given year at the "expense" of lowering reported earnings shortly. Sometimes low profits were reported in a given year to avoid an increase in tax and debt covenant, while in future it was reported that profits would be higher, and this was in tandem with creative accounting (Amarjit, et al., 2013). Other techniques included a situation whereby managers used various accounting methods such as "big bath", "income smoothing", "income restatement", and "window dressing", to deceive investors. In addition, the opportunistic behaviour toward EM might mislead stakeholders about the true financial performance of the company, especially about pension fund that was left (Jahanzaib, et al., 2012).

Furthermore, one of the major goals of management should be to pursue a continual growth of the firm as well as the maximisation of stakeholders' interest. However, due to the interest that managers may have in the firms, literature has shown that reports, which should ordinarily provide a fair view of the firm's performance and financial status at the reporting date, were manipulated over the years and across the world as such and failed to provide the true information. Therefore, this calls for the need to carry out a study on pension administration (Uwuigbe, et al., 2015). Also, the public, especially pension contributors, have lost confidence and trust in the integrity of accounting information after a scandal that rocked

the pension industry (Al-Dhamari & Ismail, 2014). The managers' opportunistic behaviour of managers led to a lack of confidence amongst contributors in the industry.

All the aforementioned factors may result in a conflict of interest between shareholders and managers, part of which has often been the presence of a pension when all profitable projects were financed but dividends or super-dividends were not paid. The shareholders would assume that managers would use the pension fund and engage in EM (Gregory & Wang, 2013). According to Helsingfors (2005), the prevalence of EM in the country could be explained by some local factors such as the flexibilities provided by regulatory bodies, lack of clear lines that could differentiate fraud from aggressive accounting (earning manipulation), weak market competition, information asymmetry, investors' lack of awareness about accounting concepts, and high emphasis of managers and accountants on reported earnings.

There is also a challenge in the pension fund, contribution density, and exit-age EM. This can be difficult as Nigeria is still recovering from the economic recession, and there is increasing manipulation by regulators and management of pension funds, which makes it even more difficult. In Nigeria, the low coverage of pension contributors amongst the working population suggests that the social statistics data which give a larger population may be misleading. This poses a challenge to Nigerian pension managers. Lack of trust in the country's financial system hinders the informal sector from joining the scheme. Another pressing issue is the high amount of unused cash within the system due to a lack of investible assets. Likewise, Nigeria has restrictions on asset allocation, which can only be beneficial to the industry in the short run. Regulatory restrictions and asset allocation continue to inhibit industry competitiveness. While the restriction has protected the industry from losses arising from the crash of equity market, it also inhibits benefiting from the equity market boom. In addition, owing to the restriction on excessive foreign investment, the Nigerian pension sector may lose out on huge potential returns on investment in other emerging developmental market projects, with the possibility of reprisal investments in Nigeria's infrastructural projects.

The motivation for this study is that despite the studies carried out on the effect of pension administration, scanty studies had attempted to establish the effect of pension administration on EM at listed pension companies in Nigeria. A knowledge gap on the subject is thus apparent, motivating the present study. Against this backdrop, the present study attempts to answer the question, "What are the effects of a pension fund, and contribution density, on EM?" This has been largely weak, inefficient, cumbersome, and manipulated due to poor staffing and equipping which led to poor record keeping. As a result, pensioners had to wait for years before their retirement benefits were paid. The exit phase was quite challenging, whereby the payment procedure was often very tedious and pensioners had to wait for months or even years to collect their entitlements. Similarly, the reimbursement process for the split of pension and gratuity payments in public service was very clumsy, untidy, and sometimes fraught with bribery and corruption.

The manipulation of financial statements in the pension industry has become a source of concern for academicians, practitioners, and policymakers. Despite the fact that the crisis periods of 1997-1998 and 2007-2011 had passed, the corporate party continues to manipulate the financial statements. According to studies, the practice of financial report manipulation was alleged. Abdulrasheed Maina, the former Chairman of the defunct Pension Reform Task Team (PRTT), was arraigned in 2019 before a Federal High Court on a 12-count charge bordering on money laundering of suspected pension funds to the tune of N2 billion. Meanwhile, in 2017, between the office of the Head of Service and the Police Pension Office, which were the two places PRTT had worked, a leakage of N5.32 billion per month occurred. Former Director, Police Pension Fund, Esai Dangaba, was on trial alongside others for allegedly defrauding the Police Pension Scheme to the tune of N32.8 billion (Guardian, 2021).

As a result of EM, accrual income is considered a better measure of the firm's performance than operating cash flows. Accrual would reduce time and mismatching problems in the use of pensions (Subramanyam, 1996). Furthermore, EM by corporate management under Subramanyam (1996) had enabled the growing flexibility and desecration that allowed management to choose accounting policies from a variety of policy options.

The paper examines the effect of pension funds on EM of listed pension companies in Nigeria.

1. To what extent does a pension fund affect the EM of listed pension firms in Nigeria?
2. To what extent does contribution density affect the EM of listed pension firms in Nigeria?
3. To what extent does retirement age influence EM at Nigerian-listed pension firms?

The objectives of the study were:

1. To assess the effect of pension funds on the EM of listed pension firms in Nigeria.
2. To examine the effects of contribution density on the EM of listed pension firms in Nigeria.
3. To determine the exit age for EM at listed pension firms in Nigeria.

2. Literature Review and Theoretical Framework

2.1 Pension Funds and Earnings Management (EM)

From literature, there was no consensus on the definition of "earnings management". Healy and Wahlen (1999) opined that managers use judgement in their financial reporting to structure transactions or alter financial reports. Dechow and Skinner (2000) defined it as a financial fraud, whereby the term "earnings management" was centered on managerial intent, which was viewed as the intentional, deliberate misstatement or omission of material facts in the accounting data that misled all information that was expected to be made available to the readers. Meanwhile Beniesh (2002) said that there was no consensus on the definition of "earning management", it all depended on the author's perception. Therefore, Leuz et al. (2008) asserted that smoothing earnings will be less informative as a result of the noise

added by management intervention. According to McNichols (2009), managers used equity valuation to manipulate earnings. Mohammad, et al., (2010) stated that earnings management might occur when managers used judgement in financial reporting and structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or influence contractual outcomes that depended on reported accounting numbers.

However, the most widely recognised definition of “earnings management” is the one given by Torng-Her, et al., (2012), who focused their definition on purposeful intervention in the external financial reporting process with the intent of obtaining some private gain. Muhammad et al. (2015) viewed EM as a process of consciously taking steps in the area of accepted accounting principles to convert reported earnings into expected profit. Ronen and Yaari (2008) focused their definition on the tools used to flex accounting information to signal their exclusive information to the shareholder. Also, they applied the information for opportunistic and optimistic managerial goals, and lastly, manipulated the accounting data to decrease transparency in financial reports.

There are different definitions of "pension", but the most common ones simply refer to the amount set aside, either by an employer or an employee or both, to ensure that in retirement, there is something that employees will fall back on as income (National Pension Commission, 2019). It is also viewed as a provider of security by building up plans that are capable of providing guaranteed income to workers when they retire or to their dependents when death occurs (Nanshuan et al., 2021). It can be referred to as the organisational moral obligation, which provides a reasonable degree of social security for workers, especially those who have served for a long period (Kingsley et al., 2021). It can be viewed in the note shell as the number of employee contributions based on payment based on a percentage of the employee's earnings computed on an average over several years multiplied by number of years the employee has served the company (CBN, 2019).

Managers appear to manipulate firm earnings by misclassifying pension assets, capital markets and alters investment decisions to justify and capitalise on these manipulations. Managers are more aggressive with the assumed long-term effect of pensions when their assumptions have a greater impact on reported earnings. Nanshuan et al. (2021) investigated the impact of contributory pension fund investment on economic growth in Nigeria, and the study covered a period which was from 2012 to 2019. The study result showed that the pension fund had an insignificant impact on EM. A study carried out by Nwanna and Ogbonna (2019) showed that there was a positive relation between fund size and EM. The results indicated that the bigger the pension funds, the more managers were engaged in opportunistic behaviour. Meanwhile Fashaga and Dunmade (2019) conducted a similar study and found no association between fund size and EM, and thus the result showed that there was no significant relation between pension funds and EM. Nwanna and Ogbonna (2019) indicated that bigger pension fund, would give better fund performance. Meanwhile, a study by Fashaga and Dunmade (2019) found no association between fund size and performance.

Therefore, clarity on the relation between pension fund and pension fund size was still lacking. The issues of economic and efficient administration of pension funds and their relation to size were first documented in Caswell (1976), and thus, the study developed the following hypothesis:

H(1): There is no relation between pension fund and EM of listed pension firms in Nigeria.

2.2 Contribution Density and Earnings Management (EM)

According to Bodie et al., (2009) contribution density entails the amount that individual member contributes towards pension fund. Meanwhile, Bikker and Dreu, (2009) viewed it as an important factor that has affected the pension benefits in countries with large informal sectors. Therefore, this referred to individuals with a low contribution density who are likely to face low accumulated assets at retirement age, and thus they are likely to have low retirement incomes. Kingsley and Suoye (2021) asserted that contribution density can be viewed as the capacity of funded individual account system to deliver a retirement income as life expectancy continues to increase.

The density of contributions is a very important determinant of EM. Onakeke and Falope (2020) assessed the impact of contributory pension schemes on EM. The study used correctional research to see the managers' opportunistic behaviour and the result showed that there was a significant relation between contribution density and EM. Herrerias and Zamarripa (2017) examined the effect of contribution density on EM. The result showed that the contribution density had a significant relation with EM. In a related study carried out by Onakeke and Falope (2020) on the relation between contribution density and EM the result showed that contribution density had a significant relation with EM. Contribution density is also an important factor that has affected pension benefits in countries with large informal sectors. Individuals with low contribution density are likely to face low accumulated assets at retirement age, and thus are likely to have low retirement incomes (Odo, et al., (2019). For any given rate of turnover between covered jobs and other uses of time, average density falls when self-employment and informal employment expand and when activity outside the labour force (mainly home production) rises. The density may also change for a different reason: underreporting of earnings, keeping the headcount constant. Simbabrashe et al. (2014) conducted an empirical study on the efficiency of pension schemes in Zimbabwe in the post-multicurrency era from 2010 to 2013. The study relied on quantitative data, such as pension fund portfolio returns and asset sizes. The research sample consisted of 20 standalone pension funds and nine fund-pension funds by using a cluster sample. Based on data presented for the Zimbabwean pension fund, the analysis demonstrated that there was no relation between the contribution density and its investment performance. Therefore, the study established that the contribution density alone did not determine a pension performance. Therefore, based on the above arguments, the study hypothesized the following:

H(2): There is no relation between contribution density and EM at listed pension firms in Nigeria.

2.3 Exit Age and Earnings Management (EM)

According to Fashaga and Dunmade (2019) "exit age" is defined as a fixed amount other than wages paid at regular intervals, usually in monthly installments, to a person in consideration of past services, age, merit, injury, or loss sustained. It is a social security arrangement whereby workers draw retirement benefits for services rendered in the past. Onakeke and Falope (2020) viewed a pension as an amount of money paid regularly by a government or a company to someone who was officially considered to be too old to earn money by continuing to work.

Suh (2017) assessed the existence of funds that were introduced as social welfare programmes in association with retirement age and EM. The results of the study indicated that pension funds have a significant influence on the existing age and EM. Sawyer et al. (2018) conducted a similar study, claiming that population aging is a cyclical rather than a continuous process. The study examined the current aging crisis in the country and EM with regard to pensions. The study results showed that age had a significant relation with EM. Rabikauskait and Novickyt (2015) conducted a study to analyse the effect of fund size on government pension schemes over a period of 20 years, with retirement age used as the control variable. The purpose of this study was to evaluate the second pillar of pension fund performance and how fund differences were affected by pensioners' exit age. Fund returns were found to be reduced for pension schemes with an early exit age. Therefore, the study concluded that retirement age had a significant control effect on pension fund performance, with a difference of being as high or low as 30% for private and public pension funds. Petraki (2012) conducted a study in one of the leading pension industries in the world to investigate the performance of personal pension funds in the UK. The research identified two significant factors which were usually overlooked in related literature: fund age and management outsourcing. The outcome demonstrated that risk-adjusted returns were statistically insignificantly different from zero, but funds significantly outperform their benchmarks. Considering the above arguments, the study hypothesised the following:

H(3): There is no relation between the retirement age and EM of listed pension firms in Nigeria.

2.4 Theoretical Framework

The theory of financial intermediation was developed and traced to Gurley and Shaw (1960). The financial intermediation theory was based on the theories of informational asymmetry and agency. Therefore, most financial institutions existed to reduce information and transaction costs that arised from an information asymmetry between borrowers and lenders. In a financial context, the phrase "financial intermediary" refers to an individual, institution, or

company firm which conducts intermediation between two entities or more, and a pension fund is one of them (Allen & Santomero, 1998). Pension funds receive larger flows of savings compared to other institutional savings. Fiscal provisions of such a nature tend to increase the demand for saving through the channel of pension funds. Furthermore, the growth of pension funds usually depends on the liberality of corporate social security pensions, especially for particular benefit funds. Davis (2000) considered pension funds as types of institutional investors that pool, save, and invest money contributed by beneficiaries and sponsors to cater for the beneficiaries' pension entitlements in the future; as a result, this form a foundation for underpinning the paper with the theory of financial intermediation.

3.1 Methodology

This study employed ex-post facto research designs and utilized data from a secondary source. The data were obtained from the annual reports and accounts of the National Pension Commission (PenCom) over a period of nine (9) years (2013–2021). The population of the study consists of all thirty-five (35) registered pension administrators. Census sampling techniques were employed to select all thirty-five (35) registered pension administrators in Nigeria as of 2021. The data were analyzed with the aid of STATA 13.0 software. In the case of earnings management, residual DeAngelo's (1986) model was used by advancing the work of Healy (1985) by scaling the earnings management model developed by Healy by stating that it is the difference between total accrual in the current year and total accrual in the future that should be scaled by total assets for firm one in year_{t-1}.

$$DA_{it} = (TA_{it} - TA_{it-1}) / A_{it-1} \text{ ----- equ (iii)}$$

To realise the study objective, which was to examine the impact of pension on EM in Nigeria, the empirical form of model, as adopted from Mohammad and Azam (2014) with little modification, was stated as below:

$$DA_{i,t} = \alpha_0 + \alpha_1 PFE_{i,t} + \alpha_2 CDE_{i,t} + \alpha_3 EAE_{i,t} + e_{i,t} \text{ (1)}$$

Where;

- DAC_{i,t} = absolute value of discretionary accruals of Firm I at year t
- α₀ = constant
- α_{1,2,3,4,5} = coefficient of regression model
- PFE_{i,t} = pension fund I at year t
- CDE_{i,t} = contribution density I at year t
- EAE_{i,t} = exits age I at year t
- e_{i,t} = error term of Firm I at year t

Table 1: Variable Measurements

S/No	Acronym	Measurement	Source
1.	Earnings Management (EMT)	Absolute values of the residuals of DeAngelo (1986)	DeAngelo (1986)
2.	Pension Fund (PFE)	Natural log of total pension fund contributions	Nanshuwan et al. (2021)
3.	Contribution Density (CDE)	Natural log of total pension contribution.	Herrerias and Zamarripa (2017)
4.	Exits Age (EAE)	Natural log of total contribution by retiree at the exits age of employment	Sawyer, et al. (2018)

Source: Author(s) compilation from literature 2022

4.1 Data Presentation and Analysis

Table 2: Descriptive Statistics

Statistics	EMT	PFE	CDE	EAE
Mean	0.9917573	0.9223802	0.0657448	0.8234988
Std. Deviation	0.071385	0.0530143	0.0382008	0.1819259
Minimum	0.4114006	0.6792868	0.0001681	0.016965
Maximum	1.146145	0.9999188	0.2596643	1.741178
Skewness	0.0000	0.0000	0.0000	0.1454
Kurtosis	0.0000	0.0095	0.0000	0.0000

Source: STATA Output 2022

Table 2 indicates that the average pension fund was 0.9223802 with a standard deviation of 0.053043 and a minimum as well as maximum of 0.6792868 and 0.9999188 respectively. This suggested a wide dispersion of data from the mean because the standard deviation was not close to the mean value. The peak of pension fund data was indicated by the kurtosis value of 0.0000, suggesting that most values were wider than the mean and data did not meet a normal distribution assumption. The coefficient of skewness of 0.0000 for pension funds implied that the data was positively skewed (that is, most of the data were on the right side of the normal curve), implying that the data did not meet the symmetrical distribution assumption.

Table 2 indicates that the average contribution density was 0.0657448 with a standard deviation of 0.0382008 and a minimum as well as maximum of 0.0001681 and 0.2596643 respectively. This suggested a wide dispersion of data from the mean because the standard deviation is not close to the mean value while, this suggests a wide dispersion of the data from the mean because standard deviation is not close the mean value. The peak of contribution density data was indicated by the kurtosis value of 0.0000, suggesting that most values were wider than the mean and data did not meet a normal distribution assumption. The skewness coefficient of 0.0000 for contribution density implier that the data were positively skewed (that

is, most of the data were on the right side of the normal curve), implying that the data did not meet the symmetrical distribution assumption.

Table 2 also indicates that the average exit age was 0.8234988, a standard deviation of 1819259 and a minimum as well as maximum of 0.016965 and 1.741178 respectively. This suggested a wide dispersion of data from the mean because the standard deviation was not close to the mean value. The peak of the exit age data was indicated by the kurtosis value of 0.1454 and the data did not meet the normal distribution assumption. The skewness coefficient of 0.0000 implied that the data were positively skewed (that is, most of the data were on the right side of the normal curve), implying that the data does not meet the symmetrical distribution assumption.

Table 3: Correlation Matrix

	EMT	PFE	CDE	EAE
EMT	1.0000			
PFE	-0.1547*	1.0000		
CDE	0.3633*	-0.0181*	1.0000	
EAE	0.2370*	0.1004	0.3403*	1.0000

Table 3 contains a correlation matrix which showed the relation between all pairs of variables in the regression model. The result revealed a positive correlation between independent variables and dependent variables, EM, except for the relation between PFE and EMT.

Table 4: Summary of Regression Result ($EMT_{it} = \alpha_0 + \beta_1PFE + \beta_2CDE + \beta_3EAE + \epsilon_{it}$)

Variables	Beta	t-v	Prob.	Vif	1/vif
PFE	-0.2207906	-3.07	0.002	1.01	0.986823
CDE	0.5792877	5.59	0.000	1.13	0.88142
EAE	0.580689	2.73	0.006	1.15	0.87281
Cons	1.109505	15.96	0.000		
R2	0.1730				
F-Statistic	57.68				
1730F-Sig	0.0000				

Discussion of Findings

The result in regarding pension fund showed a coefficient value of -0.2207906 and a t-value of -3.07 which was significant at (0.000) 1%. This showed that the pension fund had a significant influence on EM in Nigeria. The statistical significance of the pension fund influence implied that any change in pension fund proportion would have a negative and statistical influence on EM in Nigeria. However, it was important to note that for every decrease in pension fund value -0.2207906, it was influenced by the opportunistic behaviour

perpetrated by the management of firms and reduced by -3.07; hence, negatively decreased the pension fund. The findings were inconsistent with those of (Nanshuwan et al., 2021; Nwanna & Ogbonna. 2019 and PenCom, 2019).

Contribution density was also discovered to have a coefficient value of 0.5792877 and a t-value of 5.59. Looking at their relation, a positive relationship with EM emerges, and the result showed a significant relation at (0.000)1%. Therefore, this result signified that any increase in contribution density would have a positive and significant impact on EM in Nigeria. This significant relation showed that, any increase in contribution density might have more resources, which was in line with (Onakeke and Falope, 2020).

Likewise, the exit age was found to have a coefficient value of 0.0580689 and a t-value of 2.73, which was a significant relation. Considering the significant relation between exit age and EM, it showed that pension fund and contribution density had a significant relation. Therefore, the result signified that any increase in the change of exit age had a significant impact on EM in Nigeria, and it was in line with the findings of (Sawyer,et al., 2018 and Suh, 2017)

The cumulative correlation between a dependent variable and all independent variables with 0.17% indicated that the relation between EM and pension fund, contribution density and exit age for this study was 17%, which was statistically positive at 1%. This implied that the pension fund, contribution density, and exit age in Nigeria, and their EM may be directly affected. Similarly, the F- statistic result which showed the overall fitness of the model, had a Wald chi2 (3) value of (52.68) implying that the model was well fitted and significant at 1% (.000). This provided evidence that the model fitted the data well and that the joint influence of the explanatory variables was statistically significant in explaining the dependent variable. The findings had several theoretical, practical, and regulatory implications.

The findings showed that model summary of the regression equation on how pension funds influenced EM. In this study, R square was 0.17%, which indicated that 17% of variation in the pension fund was accounted for by EM. The regression result showed that there was a negative relation between pension fund and EM. Therefore, the pension fund negatively affected EM and was statistically significant at (0.000)1% level. The regression result showed that the contributory density of a pension scheme influenced EM, which had a positive effect on EM. The effort of increasing contributory density was statistically significant at (0.006) 1%. The regression result showed that there was a positive relation between exit age and EM. Therefore, exit age positively affects EM and was statistically significant at (0.006)1% level.

Policy Implication

The research highlighted a potential to improve the effectiveness of pension funds, contribution density, and exit age to achieve their ultimate objective in providing income replacement in retirement by developing portfolio strategies. This pension fund, contribution

density, and exit age could provide a useful benchmark to evaluate the performance of fund managers which would be considerably useful in aiding EM. This suggested the need for governments and their pension supervisors to consider a more active role in evaluating and proposing the long-term objectives of pension funds, determining contribution density and exit age for various categories of worker and reducing the effect of EM.

5.1 Conclusion and Recommendations

The objective of this paper is to study the relation between pension funds, contribution density and exit age with EM. In particular, it tests whether EM has been controlled or increased with the presence of pension fund administration (PFA). The results showed that firms with many PFAs, were more inclined to reduce EM. They also showed that in the presence of PFA the propensity of corporate executives to use discretionary accruals depended on the governance mechanism and its effectiveness. More specifically, CDE and EAE, increased the extent of EM in the presence of PFA. The study recommended that on the basis of these results, the present research may have relevant implications for contributors, reformers, regulators, and governance experts who have a prerequisite understanding of related categories of agency problems that may arise in the Nigerian context.

5.2 Areas for Further Research

The researcher used discretionary accrual-based earnings management as a proxy for the dependent variable. However, other researchers can use actual EM as a dependent variable proxy to see the effects on independent variables, such as pension fund, contributory density and exit age. It is equally important to note that, this research work does not include other independent variables that may have an influence on EM in PFAs, such as PFA age or PFA net assets. Therefore, other prospect researchers are advised to incorporate more independent variables so that they can explore the extent to which independent variables influence EM amongst PFAs.

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Appendix

. summarize EMT PFE CDE EAE

Variable	Obs	Mean	Std. Dev.	Min	Max
EMT	312	.9917573	.071385	.4114006	1.146145
PFE	312	.9223802	.0530143	.6792868	.9999188
CDE	312	.0657448	.0382008	.0001681	.2596643
EAE	312	.8234988	.1819259	.016965	1.741178

. sktest EMT PFE CDE EAE

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
EMT	312	0.0000	0.0000	.	0.0000
PFE	312	0.0000	0.0095	31.89	0.0000
CDE	312	0.0000	0.0000	40.35	0.0000
EAE	312	0.1454	0.0000	46.58	0.0000

. swilk EMT PFE CDE EAE

Shapiro-wilk w test for normal data

Variable	Obs	W	V	z	Prob>z
EMT	312	0.89493	23.178	7.392	0.00000
PFE	312	0.93922	13.407	6.105	0.00000
CDE	312	0.95359	10.238	5.470	0.00000
EAE	312	0.83241	36.968	8.490	0.00000

. pwcorr EMT PFE CDE EAE, star(5)

	EMT	PFE	CDE	EAE
EMT	1.0000			
PFE	-0.1547*	1.0000		
CDE	0.3633*	-0.0181	1.0000	
EAE	0.2370*	0.1004	0.3403*	1.0000

. regress EMT PFE CDE EAE

Source	SS	df	MS	Number of obs =
Model	.274294183	3	.091431394	312
Residual	1.31050494	308	.004254886	F(3, 308) = 21.49
Total	1.58479912	311	.005095817	Prob > F = 0.0000
				R-squared = 0.1731
				Adj R-squared = 0.1650
				Root MSE = .06523

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
EMT					
PFE	-.2207906	.0702346	-3.14	0.002	-.3589909 -.0825904
CDE	.5792877	.1031333	5.62	0.000	.3763526 .7822227
EAE	.0580689	.0217624	2.67	0.008	.0152471 .1008908
_cons	1.109505	.0654207	16.96	0.000	.9807773 1.238233

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: constant variance
 Variables: fitted values of EMT

chi2(1) = 8.67
 Prob > chi2 = 0.0032

. estat vif

Variable	VIF	1/VIF
EAE	1.15	0.872817
CDE	1.13	0.881421
PFE	1.01	0.986823
Mean VIF	1.10	

```
. xtset id years, yearly
    panel variable: id (unbalanced)
    time variable: years, 2013 to 2021
    delta: 1 year
```

```
. xtreg EMT PFE CDE EAE, fe
```

```
Fixed-effects (within) regression      Number of obs   =   312
Group variable: id                   Number of groups =    35

R-sq:  within = 0.0209                Obs per group:  min =    7
        between = 0.5495                avg             =   8.9
        overall = 0.1435                max             =    9

corr(u_i, Xb) = 0.4324                F(3,274)        =   1.95
                                        Prob > F          =  0.1223
```

	EMT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
	PFE	-.1582231	.0839779	-1.88	0.061	-.3235471	.0071008
	CDE	.1733236	.1305016	1.33	0.185	-.0835897	.4302369
	EAE	.0145149	.0268841	0.54	0.590	-.0384107	.0674405
	_cons	1.114351	.0805737	13.83	0.000	.9557288	1.272973
	sigma_u	.03640818					
	sigma_e	.06124938					
	rho	.26108813 (fraction of variance due to u_i)					

```
F test that all u_i=0: F(34, 274) = 2.22 Prob > F = 0.0002
```

```
. est storefe
estimates: unknown subcommand "storefe"
r(198):
```

```
. eststore fe
unrecognized command: eststore
```

```
. est store fe
```

```
. xtreg EMT PFE CDE EAE, re
```

```
Random-effects GLS regression      Number of obs   =   312
Group variable: id                 Number of groups =    35

R-sq:  within = 0.0177                Obs per group:  min =    7
        between = 0.6473                avg             =   8.9
        overall = 0.1730                max             =    9

corr(u_i, X) = 0 (assumed)          Wald chi2(3)    =   41.43
                                        Prob > chi2      =  0.0000
```

	EMT	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
	PFE	-.2024262	.0731693	-2.77	0.006	-.3458355	-.059017
	CDE	.4919996	.1084377	4.54	0.000	.2794656	.7045337
	EAE	.050728	.0227446	2.23	0.026	.0061494	.0953067
	_cons	1.104356	.0686869	16.08	0.000	.9697326	1.23898
	sigma_u	.01582634					
	sigma_e	.06124938					
	rho	.06258758 (fraction of variance due to u_i)					

```
. est store re
```

```
. xttest0
```

```
Breusch and Pagan Lagrangian multiplier test for random effects
```

$$EMT[id,t] = Xb + u[id] + e[id,t]$$

```
Estimated results:
```

	Var	sd = sqrt(Var)
EMT	.0050958	.071385
e	.0037515	.0612494
u	.0002505	.0158263

```
Test: Var(u) = 0
```

```
chi2(3) = 6.57
Prob > chi2 = 0.0052
```

. hausman fe re

	Coefficients		(b-B) Difference	sqrt(diag(V_b-v_B)) S.E.
	(b) fe	(b) re		
PFE	-.1582231	-.2024262	.0442031	.0412134
CDE	.1733236	.4919996	-.318676	.072608
EAE	.0145149	.050728	-.0362131	.014333

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-v_B)^(-1)](b-B)
 = 21.80
 Prob>chi2 = 0.0001

. xtpcse EMT PFE CDE EAE

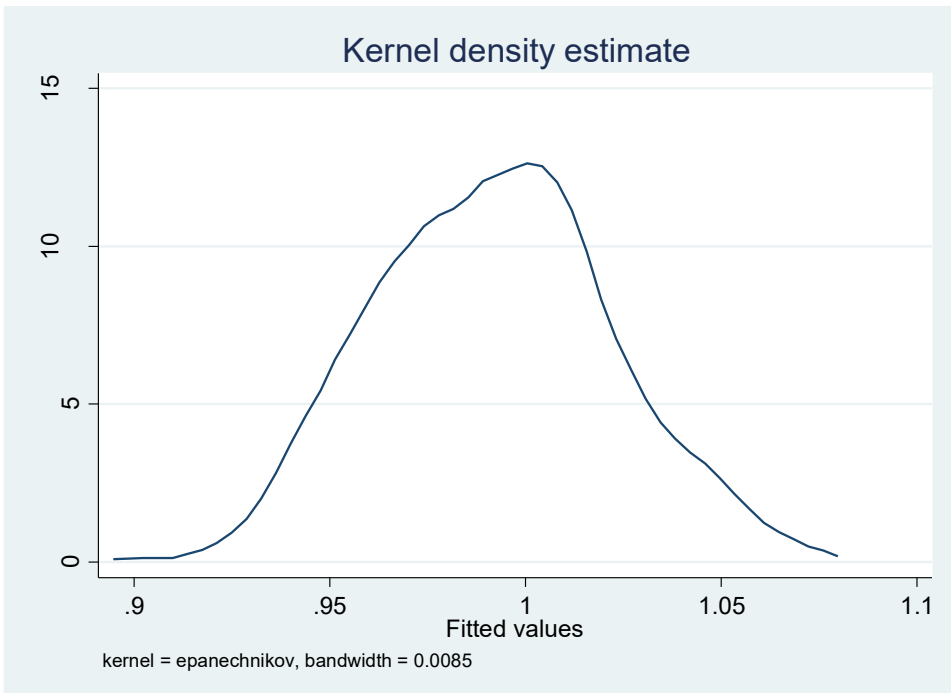
Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable: id Number of obs = 312
 Time variable: years Number of groups = 35
 Panels: correlated (unbalanced) Obs per group: min = 7
 Autocorrelation: no autocorrelation avg = 8.914286
 Sigma computed by casewise selection max = 9
 Estimated covariances = 630 R-squared = 0.1731
 Estimated autocorrelations = 0 Wald chi2(3) = 57.68
 Estimated coefficients = 4 Prob > chi2 = 0.0000

EMT	Panel-corrected		z	P> z	[95% Conf. Interval]	
	Coef.	Std. Err.				
PFE	-.2207906	.0718516	-3.07	0.002	-.3616172	-.0799641
CDE	.5792877	.1036596	5.59	0.000	.3761186	.7824567
EAE	.0580689	.0212917	2.73	0.006	.0163379	.0998
_cons	1.109505	.0695129	15.96	0.000	.9732626	1.245748

. predict e
 (option xb assumed; fitted values)

. kdensity e



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