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Financial Management in the Malaysian Public Sector: The Dynamics of Accrual Accounting in the Administrations of Two Hybrid Statutory Bodies

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Abstract

Purpose: This study aimed to examine the experiences of two statutory bodies, anonymised as Alpha and Omega, in implementing accrual accounting and the challenges they faced in fully implementing the Malaysian Public Sector Accounting Standards (MPSAS).

Design/ Methodology/ Approach: A comparative case study approach was adopted in this study. Secondary data analysis, a series of focus group discussions and semi-structured interviews with key actors involved in implementing accrual accounting in Alpha and Omega were also undertaken.

Findings: The findings revealed that both statutory bodies utilised Malaysian Financial Reporting Standards (MFRS), owing to their business subsidiaries, which are required to prepare financial statements according to MFRS. Alpha and Omega prefer to continue using MFRS instead of MPSAS due to the challenges in preparing consolidated financial statements. Besides, MFRS is appropriate for the needs of their business operations.

Research Limitations/ Implications: This study is confined to two statutory bodies. Future research should consider the impact of MPSAS adoption on other hybrid statutory bodies.

This article is part of a research on Financial Management in the Malaysian Public Sector: The Dynamics of Accrual Accounting in Two Hybrid Statutory Bodies' Administrations, supported by the Accountant General's Department of Malaysia through *Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Tahun 2022* (JANM. IPNCPD.100-3/3/2 Jld.3 (30)).

Practical Implications: The study demonstrates that adopting a different accrual accounting system is challenging for government organisations. It also highlights that MPSAS may not best reflect the operating nature of hybrid statutory bodies.

Originality/ Value: Prior studies focused on government entities' first-time adoption of accrual accounting. This study differs as it examined the challenges government entities face when transitioning from one accrual accounting system to another.

Keywords: Public sector accrual accounting, MPSAS, statutory bodies, Malaysia.

1.0 Introduction

Accrual accounting in the public sector was introduced in the 1990s to enhance the public sector's efficiency, effectiveness, and accountability and improve the costing capability involving government programmes and services (Hoque et al., 2004). Accrual accounting is viewed as a means of providing an accurate assessment of the full cost of service provision in the public sector. Besides, it serves as a performance indicator of whether a programme or activity is efficient. Among the early adopters of accrual accounting in the public sector were New Zealand (Lye et al., 2005), the United Kingdom (Biondi, 2016) and Australia (Barton, 2005). The introduction of International Public Sector Accounting Standards (IPSAS) in 2004 led to the growing adoption of accrual accounting in the public sector worldwide. In order to formalise accrual accounting, the Federal Government of Malaysia introduced the MPSAS for the adoption by government ministries and agencies, including statutory bodies. The Federal Government initially set 1 January 2015 as the target date for full accrual accounting implementation, but it was repeatedly delayed, with the latest deadline set for 1 January 2022.

The delay in implementing MPSAS can be attributed to several factors. Firstly, existing laws, such as the Federal Constitution and the Financial Procedures Act 1957, had to be reviewed and amended. The process is still ongoing. Secondly, systematic data collection for government assets was a painstaking and time-consuming task carried out in phases from 2015 to 2019. Thirdly, the preparedness of the public sector to implement MPSAS was another issue to be resolved. Early research discovered initial resistance among public sector employees (Noordin et al., 2014), although there was greater acceptance towards MPSAS over time (Atan & Mohamed Yahya, 2015; Ismail et al., 2018).

Furthermore, the full-scale implementation of MPSAS is further complicated by the presence of 132 federal and 136 state statutory bodies, in addition to the three levels of government in Malaysia (federal, state, and local). Federal-level statutory bodies include public universities, Bank Negara Malaysia (BNM) and the Securities Commission of Malaysia (SCM). An internal document by the Accountant General's Department (AGD) revealed that 88 out of 132 federal-level statutory bodies had implemented MPSAS as of 31 July 2021. Nevertheless, the adoption rate among state-level statutory bodies was sharply lower, with only 33 out of 136.

Some statutory bodies find adopting MPSAS challenging due to their hybrid nature, which involves both public and private sector responsibilities and business interests. This study examines the experiences of two such statutory bodies, referred to as Alpha and Omega, in implementing accrual accounting and the challenges they faced in fully implementing MPSAS. The study has the following specific four research objectives:

- i. To examine the reporting system and accounting standards used by Alpha and Omega and the reason for their usage;
- ii. To evaluate the extent to which accounting practices accommodate or conflict with MPSAS accounting conventions;
- iii. To ascertain the challenges faced in complying with MPSAS; and
- iv. To identify the strategic direction of Alpha and Omega regarding MPSAS adoption.

The rest of the paper is organised as follows. The literature review is presented in Section 2, while Section 3 outlines the research methodology. The two case studies are presented in Section 4. Subsequently, the discussion regarding the study can be found in Section 5, whereas Section 6 concludes the study.

2.0 Literature Review

2.1 Rationale for Accrual Accounting in the Public Sector

Governments worldwide are embracing accrual accounting due to its perceived benefits, such as better information for decision-making (Caruana & Zammit, 2019; Chow & Pontoppidan, 2019; Hyndman & Connolly, 2011; Lye et al., 2005), greater accountability and transparency (Muraina & Dandago, 2020; Sellami & Gafsi, 2019; Sylvia et al., 2018), lower government agency costs (Caruana & Zammit, 2019) and improved public sector efficiency, achieved by shifting from an input-oriented view to an output-oriented one, thereby enhancing management capabilities and economic output (Lampe et al., 2015).

Nevertheless, the actual implementation of accrual accounting has been far more challenging than initially anticipated by the governments. The implementation process took many years for early adopter countries (Buhr, 2012; Hyndman & Connolly, 2011). Furthermore, the process of implementing accrual accounting has been costly (Hyndman & Connolly, 2011; Lassou et al., 2019), complex (Adhikari et al., 2019; Adhikari & Mellempvik, 2011; Jorge et al., 2007) and in some instances, only yielded few benefits (Christofzik, 2019; Gigli & Mariani, 2018; Pollanen & Loiselle-Lapointe, 2012; West & Carnegie, 2010).

2.2 Factors Influencing or Inhibiting Accrual Accounting Adoption

Accrual accounting adoption worldwide has been impeded by several broad factors, categorised as technical, political, and cultural. One of the primary technical impediments to accrual accounting is the lack of trained public sector accountants capable of implementing the necessary reforms (Becker et al., 2014; Gigli & Mariani, 2018; Ismail et al., 2018; Maimunah, 2016; Salleh et al., 2014; Upping & Oliver, 2012). Other technical issues comprise installing

appropriate information technology systems (Upping & Oliver, 2012) and a well-defined timeline (Bruno & Lapsley, 2018). Strong political will has been demonstrated to facilitate accrual accounting (Buhr, 2012; Hyndman & Connolly, 2011), while the converse caused implementation delays (Polzer et al., 2019). In addition, cultural factors, such as resistance among public sector employees to embrace accrual accounting, stall such reforms (Becker et al., 2014; Polzer & Reichard, 2019).

2.3 Accrual Accounting in the Malaysian Public Sector

Several studies have been undertaken on accrual accounting in the Malaysian public sector. An early study by Saleh and Pendlebury (2006), which compared the level of accrual accounting in Malaysia and the United Kingdom (UK), discovered that accrual accounting in Malaysia was introduced for managerial accounting and control purposes. Subsequent studies focused on MPSAS adoption. For example, Noordin et al. (2014) examined public sector employees' resistance to change and apprehension that the new accounting system would lead to increased workloads and challenges. Nonetheless, subsequent studies revealed that the public sector employees' readiness increased over time (Atan & Mohamed Yahya, 2015; Ismail et al., 2018) due to initiatives such as workshops, seminars, and training related to accrual accounting. The training helped ensure that public sector employees were equipped with sufficient knowledge and technical skills (Yusof & Jaafar, 2018; Ismail et al., 2018).

Despite enriching the literature, accrual accounting adoption at the federal or state level (Azmi & Mohamed, 2014; Rozaidy & Siti-Nabiha, 2022) and public sector accountants (Atan & Mohamed Yahya, 2015; Ismail et al., 2018). There is a paucity of research on Malaysian statutory bodies, although their adoption of MPSAS is not optimal. Another literature gap is the legal aspect influencing accrual accounting adoption, particularly in the Malaysian context. As a federation, there is a multiplicity of laws regarding statutory bodies which may not necessarily complement one another. Therefore, further investigation is required to examine if these laws promote or inhibit widespread MPSAS adoption.

3.0 Methodology

This study adopted a comparative case study approach to explore the experiences of Alpha and Omega in implementing accrual accounting. The case studies comprised two main phases. In Phase 1, secondary data was collected through a document review analysis of the annual financial statements of these public entities. This process involved examining whether any differences exist in reporting in the targeted period of MPSAS adoption, specifically from 2015 to 2021. Nevertheless, Alpha's most recent publicly available financial statement was the 2018 annual report, although one of its subsidiaries published its annual reports up to 2021.

The primary objective of Phase 2 is to ascertain the major benefits and issues experienced in implementing accrual accounting at both statutory bodies and whether MPSAS can be fully adopted. In Phase 2, two and three rounds of focus group discussions and semi-structured interviews were undertaken with key actors in implementing accrual accounting for Alpha and Omega, respectively. The sessions lasted from an hour to two hours. The interview details are presented in Appendix. All the interviews were recorded with the respondents' consent and transcribed. In addition, key documents such as internal letters, memos, and circulars that key

officials of both statutory bodies shared were analysed. Excerpts from these documents for this study were quoted with the gracious permission of Alpha and Omega.

4.0 Findings: Case Studies

4.1 Alpha

4.1.1 Background and Operations

Alpha was established in the 1950s by a minister aiming to improve the social and economic conditions of rural households previously involved in traditional agriculture. It aimed to assist them in becoming modern smallholders, farming for export, and primarily focusing on export-oriented commodity cultivation. Alpha was established as a statutory body under the Land Amelioration Act (Act 1080)¹. This Act establishes land amelioration boards to promote and execute land amelioration and relocation projects, allocate funds, and address related purposes.

Although Alpha's primary focus was on settlers since its inception, it ceased recruiting new settlers in 1990 following the government's decision to grant Alpha "financial independence" status and transform it into a statutory body. The decision enabled Alpha to generate its own income to support its multiple development strategies in developing various business portfolios. After the government ceased funding in the late 1990s, Alpha launched several private income-generating corporate entities to ensure the completeness of the value chain of its core activities. Among the largest of such entities include Lambda Holdings Ltd., its Group Companies, and Alpha Plantation Management Pvt. Ltd. (formerly known as Alpha Technoplant Pvt. Ltd. prior to its listing on the local stock exchange).

Lambda is Alpha's most significant subsidiary, which focuses on three core business sectors, namely plantations, sweeteners, and logistics. The plantations sector comprises palm upstream (the largest revenue generator), palm downstream, rubber, trading, research and development, renewable energy, and integrated farming. The sweetener division operates under its subsidiary, Gamma Malaysia Holdings Ltd. Refineries, which can be found in several locations around Malaysia. On the other hand, the logistics division is involved in bulking, storage, and warehousing.

When Lambda was listed on the local stock exchange in the 2010s, Alpha established Alpha Investment Corporation Pvt. Ltd. (AIC), Alpha's wholly-owned investment arm, to manage its business activities. It aims to ensure profitable and sustainable investment returns to its shareholders through non-plantation business operations. The primary focus of AIC is hospitality, property, and other strategic investments.

¹The exact name of the Act has been anonymised.

4.1.2 Reporting System and Accrual Accounting Standards Used by Alpha

Alpha began using Financial Reporting Standards (FRS) approved by the Malaysian Accounting Standards Board (MASB) on 1 January 2006. Following the recommendation of its consultant, Momentum, which is one of the Big Four consulting firms, Alpha started utilising the MFRS. An issue during the initial adoption of MFRS was the inability of certain systems to interface with the group system, requiring them to reference the Financial Module (FI) in System Applications and Products (SAP). There was no staff training for this transition, as the consultant had limited time to prepare the report. Subsequent issues arose as the consultant kept changing. Consequently, there was no overall information from the first consultant appointed by Alpha to perform the integration.

As for its financial reporting requirements, Alpha follows Act 474 and Statutory Bodies (Account and Annual Reports) Act 240 (1980). Alpha is required to submit its financial statements within six months after its financial year-end. This requirement is a new directive, as previous reporting was done within four months. If the financial year ends on 31 December, the financial statements will be ready by 1 April at the earliest. Interviewees also reported issues in the reporting department during April 2022. Since Alpha has publicly listed subsidiaries, it can only prepare consolidated financial statements after announcing them to Bursa Malaysia Securities Bhd. Alpha generally receives its publicly listed subsidiaries' financial statements by mid-April. Thus far, Alpha has managed to submit its financial statements to AGD before the deadline.

Alpha's financial statements (including consolidated reports) are prepared utilising SAP. Nevertheless, a special system is used by settlers for plantation activities, such as buying fertiliser, and for managing socioeconomic development activities, such as administering housing and education loans. In 2018, issues arose as consultants could not tally the outstanding balance between FI and the settlers' system data. The FI displayed the correct total figures, but the settlers' system showed details that did not tally with the total figures. Some adjustments were proposed but verifying the settlers' system data was challenging, prompting the formation of a special task force to resolve the issue.

a) Biological Assets

Biological assets, such as plantation assets, form a significant portion of Alpha's financial statements. The primary issue concerning Alpha's plantation assets is that the listing is not updated in its system primarily because the plantation department does not frequently update its age profile. This situation has forced the finance department to collaborate with the plantation department in manually preparing age profiles. The data input is vital for the finance department to enable asset recognition and disclosure. The issue remains unresolved due to a technical glitch in compiling data from 317 schemes, including internal transitions.

Furthermore, each plantation must regularly update its age profile. The data will be collected from each scheme and sent to the regional level and, finally, the headquarters. An interviewee noted that Alpha is aware that the data has been inconsistent and cannot be extracted directly from SAP. Data inconsistency arises from inappropriate timing and mismatch in the plantation data. In order to overcome this issue, the plantation department has developed a new system that utilises drones to perform routine checks.

The livestock count in the asset listing often mismatches due to the number of dead livestock reported and requires manual rectification. Revaluing livestock using the write-off method has been delayed since last year, as it now requires approval from the Asset Disposal Committee, leading to longer processing times. Impairment is typically performed on livestock in the asset listing, with each impairment assigned a nominal sum in the given currency. Ascertaining the market value of livestock is another issue. Vendors are only keen to disclose the market price or provide a quotation if Alpha is interested in purchasing livestock. Since Alpha has different livestock breeds, obtaining accurate market prices is crucial. Nevertheless, since livestock is not a core business activity, the impact is rather insignificant.

b) Government Grant

Starting in 2022, Alpha began recognising high-valued assets acquired using government grants. This type of asset has been created and recognised under the special asset class. The assets will be fully depreciated without affecting Alpha's profit and loss. The asset's net book value (NBV) is zero, except for motor vehicles, which have a scrap value recorded at a nominal sum.

c) Revaluation of Investments

Alpha is required to perform a valuation every three years through an external valuer for investment properties. The valuer performs a comprehensive valuation in the first year, followed by desktop valuation in the second and third years. The average valuation cost is below USD100,000. The first-year comprehensive valuation costs average USD30,000, while subsequent years for desktop valuation are lower. Valuation costs were reportedly manageable.

4.1.3 The Extent to Which Accounting Practices at Alpha Accommodate or Conflict with MPSAS

Based on a government circular issued on 15 September 2016, Alpha, as a federal-level statutory body, adopted MPSAS starting in 2017. Nevertheless, Alpha reported encountering several issues in implementing MPSAS. One issue is that the group and subsidiaries began using MFRS in 2018, with another 16 subsidiaries adopting MFRS in 2020. Alpha's Board were notified that differences exist between MFRS and MPSAS. Due to these concerns, Alpha wrote a letter to the Ministry of Finance in December 2019, with a copy sent to the AGD requesting exemption from MPSAS adoption. Among the justifications given was Alpha's endeavour to implement various initiatives, including a White Paper, with the main objective of strengthening its accounting system. Similarly, Alpha began a restructuring exercise for its borrowings, restructuring debts and interest payments of settlers, rationalisation of investments and asset disposals beginning in 2019.

The Cabinet approved the Alpha Recovery Plan in October 2020. Subsequently, Alpha signed a document on the issuance of debt financing in December 2020. The reacquisition of Lambda was among the transformation and recovery efforts taken by Alpha in 2021. In January 2020, Alpha had a meeting with the AGD to apply for an MPSAS exemption. Although the AGD concluded that Alpha had to utilise MPSAS, Alpha was allowed to submit a written appeal to

the AGD with justifications for MPSAS exemption. Alpha subsequently wrote an appeal letter to the AGD in April 2021.

In February 2021, a session on amending Treasury Circular 3.1 proposed that all statutory bodies must obtain the approval of their respective boards for a suitable accounting framework for 2020. The AGD's decision tree was to serve as a point of reference. Alpha's Board subsequently approved the continued usage of MFRS for its financial statements in a meeting in March 2021. A copy of the meeting minutes was duly sent to the AGD. In December 2021, Alpha had a meeting with the AGD, where the appeal for MPSAS exemption was rejected, as emphasised in a letter from the Accountant General dated later that month. Nevertheless, Alpha will be granted an extension for not utilising MPSAS from 2021 to 2025 but must provide an annual timeline and progress report during this period. In February 2022, Alpha wrote to the Accountant General appealing for a further extension and was awaiting a reply at the time this research was conducted.

4.1.4 Challenges Faced by Alpha in Complying with MPSAS

Alpha has many autonomous departments and subsidiaries with different types of reporting methods. Generally, SAP is preferred, while manual systems are used for dormant companies. Alpha faces several challenges in adopting MPSAS regarding its accounting system due to expectations to comply with the Standard Accounting System for Government Agencies (SAGA) requirements. At the time of the research, the SAGA committee had not recognised Alpha's accounting system. For the SAGA committee to recognise Alpha's accounting system, subsidiaries must meet all the criteria established by SAGA, including adopting MPSAS accounting standards for preparing financial statements.

Since Alpha has publicly listed subsidiaries, it can only prepare consolidated financial statements after making an announcement to the local stock exchange. In order to prepare consolidated financial statements, Alpha uses a consultant-developed template that includes consolidation numbers provided by all subsidiaries. This new template version was used starting in the year ended 2021. The elimination of intercompany transactions is undertaken using this template. Hence, Alpha and its group of companies must practice similar accounting standards in preparing its financial statements. Alpha also faces challenges in appointing auditors for the group company, as they must be the same as Alpha's auditor appointed by the AGD to expedite the auditing process within the Alpha Group.

4.1.5 Alpha's Strategic Direction Regarding MPSAS Adoption

Alpha is still awaiting the outcome of its appeal to continue using MFRS. An interviewee was puzzled regarding why Alpha's application was rejected and wondered which criteria were not met by Alpha. The AGD focused on grants, and the interviewee admitted that Alpha has grants, loans, and debt financing. Nonetheless, Alpha's consultant had stated that it did not meet MPSAS criteria. Another interviewee iterated that Alpha should not be required to apply for an exemption since it has publicly listed companies as subsidiaries. She added that Alpha had a meeting with the Prime Minister's Department, AGD, and the National Audit Department previously, but no justifications were provided for the rejected application.

Interestingly, the interviewees stated that they had no aversion to adopting MPSAS. One interviewee mentioned that:

“It is unfair for us to reject MPSAS without a full understanding of the new Standards.” (Alpha Interviewee 1)

Besides, there is a sense of inevitability in eventually adopting MPSAS since Alpha must adopt MPSAS to obtain SAGA certification.

4.2 Omega

4.2.1 Background and Operations

Omega is a federal statutory body established in the 1960s, which operates as a religious financial institution in Malaysia and is headquartered in Kuala Lumpur. Its primary activities include managing individual and group religious activities, depository services, and investment. To date, Omega has millions of depositors and numerous branches across the country.

Omega is a self-funded federal statutory body that annually manages religious excursions in Malaysia by arranging the entire excursion affair. Omega is governed by the Omega Act (Act 1063)², which is currently under the purview of a minister responsible for specific religious affairs in the country. As defined in the Act, Omega is more than just an excursion management service provider. It provides religion-based financial services.

Omega is governed by a Board of Trustees (BoT), which is given the jurisdiction to administer funds and all matters concerning devotees' welfare under Section IV(I) of Act 1063. This Act empowers BoT to formulate policies and other related matters required or permitted under the Act. The BoT is fully responsible for Omega's overall corporate governance, including strategic directions and developments and setting goals, policies, and strategies to manage and monitor performance. The Minister provides the BoT with directions on the performance of its functions, and the BoT shall provide the Minister with returns, accounts, and other information related to the property and activities of the BoT from time to time.

Omega administers funds entrusted by Malaysian devotees of a specific religion who save for holy excursions (for specific religious rituals), manages these funds as investments, and provides reasonable returns to the depositors. Section XVI(I) of the Omega Act authorises Omega to receive deposits from devotees for the following purposes: “(a) saving towards excursion of the individual to the religious site and (b) savings for investment or for any other purposes permitted by BoT” [Section XVI(II)].

Omega uses depositors' savings to invest in religion-compliant activities to generate sustainable and competitive returns. Omega mobilises depositors' savings and invests them in major capital, equity and money markets, and industrial, agricultural, commercial, and real estate projects that adhere to religious principles based on the approved strategic assets

²The exact name of the Act has been anonymised.

allocation approved by the Minister. Section XX (II) stated that Omega should not exercise the powers of investment without the Minister's approval. Omega's diverse investments in various sectors enable it to fulfil its social obligations regarding excursion operations and offset the associated costs for Malaysian devotees annually.

After deducting various expenses, investment profits are distributed to depositors subject to compliance with the Omega Act on a yearly basis. Omega's profit distributions are fairly competitive given the risk profile of investments, and its payout in recent years has been consistent.

4.2.2 Reporting System and Accrual Accounting Standards Used by Omega

A good accounting and reporting system is essential for Omega to ensure accurate and complete accounting of its operations and investment activities while complying with MFRS requirements. Omega has used an off-the-shelf accounting system, namely the Oracle Accounting and Financial System, since 2007. Omega and its subsidiaries have applied accrual accounting standards since 2000, beginning with the MASB and earlier. Omega, as an entity, and its subsidiaries prepared financial statements in accordance with MFRS requirements.

The Secretary General of the Treasury of the Ministry of Finance issued a letter in December 2016 regarding the application of accounting standards by Federal Statutory Bodies. The letter stated that a Federal Statutory Body that has adopted MFRS must continue to adopt MFRS for their financial reporting from 2016 onwards. The letter also highlighted that the application of MPSAS does not cover the Federal Statutory Bodies whose financial reporting is subject to the supervisory law of BNM, the Security Commission, or the Companies Commission of Malaysia (CCM). Thus, Omega continues applying MFRS requirements based on this understanding and the surrounding circumstances. The reasons for the non-adoption of MPSAS will be discussed in later subsections.

4.2.3 The Extent to which Accounting Practices Accommodate or Conflict with MPSAS

Given the size of Omega's depositors' savings, investment activities, and its interconnectedness with the financial system through deposit placements and exposures to common assets such as banking institutions, BNM has requested quarterly periodic reporting from Omega since the end of 2012 to monitor financial stability risks. Following the Cabinet's decision on 7 December 2018, Omega was placed under BNM's supervision effective from 1 January 2019. In order to operationalise the Cabinet's decision, BNM conducts a supervisory review, including an on-site examination of Omega's books and documents and recommends standards for Omega to adopt to strengthen its resilience and promote its long-term business viability. The reporting frequency has also been increased to a monthly basis on top of a quarterly report.

As stated in the Omega Act 1053 Section XXVI, the provision of the Statutory Bodies (Accounts and Annual Reports) Act 1980 (Act 240) applies to Omega, requiring the accounts to be audited. Omega consistently prepares its financial statements in accordance with MFRS requirements for auditing and reporting to regulatory authorities for better understanding and making it comparable and benchmark against its peers, namely other financial institutions.

The majority of Omega's assets are financial instruments and real estate. These financial instruments comprise equities, private equity funds, fixed income, properties, and money market. All of Omega's investments are religious-compliant and accounted for following MFRS 9 Financial Instruments requirements.

Although there are specific MPSAS for financial instruments, namely MPSAS 28 Financial Instruments: Presentation, MPSAS 29 Recognition and Measurement and MPSAS 30 Financial Instruments: Disclosure, Omega opined that these standards are a simplification of MFRS 9 Financial Instruments and drafted for government-funded statutory bodies. Omega contends that it does not sufficiently cover the scope of its transactions and accounting, as it operates as a federal statutory body generating its own income and expenses instead of accounting for surplus or deficit of government funding.

Other federal statutory bodies with financial instruments and no government funding, such as Omega, the Employees Provident Fund (EPF), and Retirement Fund (Incorporated), apply MFRS for the accounting of their financial statements. The compliance costs for MFRS requirements in 2021 amounted to approximately USD145,000, which included costs incurred for property revaluation, consultation for MFRS requirements, and taxes.

4.2.4 Challenges Faced by Omega in Complying with MPSAS

As mentioned earlier, Omega's fund from depositors grows through new and additional deposits and returns from investments (net of profit distribution). The majority of Omega's portfolio is investments in equity, fixed income, money market, and real estate. The primary goal of equity investing is to generate long-term, competitive returns from capital gains and dividends while maintaining a reasonable risk level in line with market conditions. In addition, the primary goal of fixed-income investment is to generate long-term, recurring income for the funds invested and build a medium-term fixed-income portfolio.

Nonetheless, Omega's investments are not limited to equity, fixed income, money market, and real estate. Omega also engages in other sectors, such as religious-based finance, plantations, property development and construction, hospitality, information technology and marine support through its subsidiaries. Omega's diverse investments in various sectors provide an additional and steady income stream that enables it to cover the rising costs of religious excursion operations while continuing to subsidise the cost of religious excursion for Malaysians annually and distribute profits.

Omega has established many subsidiaries spanning across different sectors. These subsidiaries are registered under the Companies Act 2016 and are subject to many requirements, including the requirements to utilise the Malaysian Private Entities Reporting Standard (MPERS) or MFRS. Therefore, entity and group reporting can be challenging if Omega is forced to embrace MPSAS, as the financial statements must be harmonised. Besides, gap adjustments must be made in accounting for classification, recognition, measurement, and presentation of financial statements. Thus, Omega has to prepare two sets of financial statements based on MFRS and MPSAS requirements, resulting in additional costs for people, systems, and processes.

4.2.5 Omega's Strategic Direction Regarding MPSAS Adoption

Owing to the circumstances explained earlier, Omega continues utilising MFRS. When asked if Omega would consider moving to MPSAS, an interviewee replied:

"No, because MFRS comes first." (Omega Interviewee 7)

Besides, interviewees opined that MFRS is suitable for Omega as MFRS is comprehensive and broadly covers Omega's accounting on the nature of activities. As pointed out further by the interviewee:

"I think MPSAS is not applicable as our accounts are publicly available, and we are kind of an international company, so to be comparable, performance-wise, we have to follow MFRS. Also, we need to report to Bank Negara." (Omega Interviewee 7)

Omega's financial statements are publicly available for reference and comparison and can be benchmarked against other international organisations and its peers from the financial industry. Additionally, interviewees pointed out that Omega is a self-funded federal statutory body that generates its own income and expenses. It does not receive any government funding and reports to BNM periodically.

Nevertheless, Omega has come up with the following coping strategies if it is compelled to do so by the federal government. First, Omega will set up a Steering Committee to steer the directive on MPSAS with periodic reporting to the Board. Secondly, a Working Committee group will be formed to perform a feasibility study and undertake a gap analysis on applying MPSAS in Omega. Thirdly, if required, Omega might engage with the industry subject matter expert for guidance on the MPSAS directive. Nevertheless, MFRS is beneficial for decision-making purposes.

Omega interviewees opined that MPSAS would become irrelevant due to the current trajectory of phasing out statutory bodies such as the pension division. Thus, more statutory bodies will need to obtain their own funding sources through establishing business subsidiaries. In this scenario, subsidiaries must report to the CCM, making MPSAS inapplicable. Furthermore, if the holding company uses MPSAS, the subsidiaries must undertake a gap analysis and prepare two sets of financial statements in accordance with MFRS and MPSAS requirements at the entity and group levels. These activities will incur additional costs on human resources, systems, and processes.

5.0 Discussion

The cases of Alpha and Omega evidently prove that both statutory bodies have applied accrued accounting for many years due to their hybrid nature of having business subsidiaries. These subsidiaries were created to generate income for their respective statutory bodies to achieve financial autonomy and independence. Due to their corporate nature, these subsidiaries are required to abide by securities laws, which include preparing their financial statements according to MFRS. The parent statutory bodies prepare their financial statements in accordance with MFRS for consistency and uniformity. Alpha and Omega have their

own comprehensive financial reporting systems. Alpha experienced some initial issues when adopting its console pack, whereas Omega reported no issues with its current system.

Several accounting practices at Alpha and Omega contradict MPSAS accounting conventions. These conflicts primarily emerge from their nature of operations. First, both Alpha and Omega operate as business entities by generating their own income and expenses and do not rely on government funding to finance operations. Therefore, they believe they should not be subjected to the same financial reporting requirements as other statutory bodies that are reliant entirely or largely on government funding. Second, the subsidiaries of business-like statutory bodies, such as Alpha and Omega, must comply with the listing and other regulatory requirements for publicly traded securities, including preparing financial statements according to private sector accounting standards. Third, MFRS is comprehensive and adequately encompasses the nature and operations of statutory bodies operating as business entities. In contrast, MPSAS is more suited to public sector entities that do not undertake business activities and have previously used cash-based accounting.

The primary challenge both statutory bodies face in complying with MPSAS is preparing consolidated financial statements in accordance with MPSAS. The challenge involves restating the financial statements of their business subsidiaries, which were originally prepared in accordance with MFRS, line by line, to align with MPSAS. This process can be time-consuming and potentially costly.

In terms of the strategic direction regarding MPSAS adoption, Omega is reluctant to adopt MPSAS due to the reasons discussed above. Nevertheless, it has several coping strategies if compelled to adopt MPSAS. In contrast, Alpha's reaction is less clear. Concurrently, interviewees conceded that they did not fully understand MPSAS and admitted that it would be unfair to reject it outright. Officially, Alpha has requested to continue using MFRS for reasons that are similar to Omega by justifying that it has business subsidiaries that need to comply with securities laws. Nevertheless, Alpha has received a government grant recently and is undergoing restructuring, which might impact the stance towards MPSAS in future.

6.0 Conclusion

This study examined the experiences of Alpha and Omega in implementing accrual accounting and the challenges they faced in fully implementing MPSAS. Both statutory bodies use MFRS as their business subsidiaries are required to prepare financial statements according to MFRS. Furthermore, Alpha and Omega prefer to continue using MFRS rather than MPSAS due to issues emerging when preparing consolidated financial statements. Besides, MFRS is more appropriate for the needs of their business operations. Apparently, MFRS usage was ingrained among actors at both statutory bodies, which resonated that the accounting principles propagated in MFRS were better suited for their business-like operations. Nonetheless, Alpha and Omega reported pressure compelling them to adopt MPSAS. They emphasised that compelling them would result in higher compliance costs due to the need to reconcile MFRS-based financial statements with those in accordance with MPSAS.

The usefulness of MPSAS-based financial statements is also questionable since both statutory bodies, particularly Omega, are financially self-sufficient and receive no government funding.

This doubt points to a critical issue underlying among similar statutory bodies despite their legal form as statutory bodies, as their nature reflects for-profit entities (in substance). The question remains whether their challenges in accounting and reporting their activities accentuate the need to revisit the renowned conception in accounting, namely recognising “substance” over “form”. Regardless, the issues these statutory bodies face are intricate, as it is uncertain whether these issues can be resolved in the near future. Conclusively, in a nutshell, both public and private spheres of accounting never deviate from their essential purpose. Accounting purports to measure what it is supposed to measure, namely performance and provide information to assist users in making decisions.

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Appendix

Alpha Interviewees

No.	Name	Position	Remarks
1.	Respondent 1	General Manager (Finance)	Introduction
2.	Respondent 2	Accountant	Non-Disclosure Agreement
3.	Respondent 3	Managing Director	Non-Disclosure Agreement
4.	Respondent 4	Finance Director	Historical background Issues Regulatory requirements
5.	Respondent 5	Senior Accountant	Historical background Issues Experience sharing Regulatory requirements
6.	Respondent 6	Accountant (Senior Assistant Director)	Historical background Issues Experience sharing Regulatory requirements
7.	Respondent 7	Accountant (Assistant Director)	Experience sharing
8.	Respondent 8	Accountant (Assistant Director)	Experience sharing
9.	Respondent 9	Accountant (Assistant Director)	Experience sharing

Omega Interviewees

No.	Name	Position	Remarks
1.	Respondent 1	Head, Group Shared Services	Introduction
2.	Respondent 2	Corporate Communication Department	Non-Disclosure Agreement
3.	Respondent 3	Head, Group Shared Services	Preliminary data collection
4.	Respondent 4	Financial Operations Director	Preliminary data collection Overview of financial practices
5.	Respondent 5	General Manager (Finance)	Preliminary data collection
6.	Respondent 6	Head, Group Shared Services	Historical background Issues Regulatory requirements
7.	Respondent 7	Financial Operations Director	Historical background Issues Experience sharing Regulatory requirements
8.	Respondent 8	General Manager (Finance)	Experience sharing

Individual and Organisational Attributes on Public Accountants' Professional Scepticism: A Qualitative Examination

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Abstract

Purpose: The present study examined the impacts of individual and organisational attributes on accountants' professional scepticism levels in the Malaysian public sector. Specifically, three individual and two organisational attributes with corresponding impacts on accountants' professional scepticism in the public sector were appraised.

Design/ Methodology/ Approach: This study utilised a qualitative approach via interviews with 16 Malaysian public-sector accountants over three months.

Findings: All five individual and organisational attributes significantly impacted the accountants' professional scepticism. Individual attributes included experience, attitude, and integrity, whereas organisational attributes encompassed regulation and technology.

Research Limitations/ Implications: Professional scepticism is a crucial element significantly influenced by both individual and organisational characteristics.

Practical Implications: The findings revealed the importance of understanding accountants' individual and organisational attributes in the public sector. The understanding could guide the government in performing the necessary actions to improve the professional scepticism level among accountants.

Originality/ Value: This study initiated the examination of the impact of organisational attributes on accountants' professional scepticism in the Malaysian public sector.

Keywords: Professional scepticism, individual attributes, organisational attributes, accountants, public sector.

1.0 Introduction

The accounting profession is perceived with the highest standards of integrity among professional service sectors and the 'gatekeeper' in safeguarding the investing public (Johari, Hati & Sayed Hussin, 2022). Nonetheless, huge accounting scandals across the globe (Enron and WorldCom in 2001) have significantly impacted the accounting business, including Malaysia. The accounting scandals involving multiple Malaysian companies, such as Felda Global Ventures Holding Berhad in 2017 and Serba Dinamiks in 2021, have diminished public trust and expectations. In addition, the accounting issues encompassing financial fraud are exacerbated by the inability of public accounting companies to detect incorrect reporting. The auditors' lack of professional scepticism perceivably contributes to audit errors and inadequacies (Hamshari, Ali & Alqam, 2021). Simultaneously, accountants must possess a high level of professional scepticism, as the employment entails tasks requiring accurate judgement and decision-making, including authorising claims or payments from suppliers and subordinates. As accountants are the first line of defence in the combat against fraud (Ghani, Ilias, Muhammad & Mohd Ali, 2022), a high professional scepticism degree is required to discover fraud and subsequently employ preventative measures. In line with past investigations, the professional scepticism level varies by individual, wherein accountants' inadequate professional scepticism might jeopardise personal and organisational reputation (Alnafisah, 2019).

Accountants in the Malaysian public sector are under the purview of the Ministry of Finance (MOF). The MOF appointees operate nationwide in different divisions, departments, states, and ministries. Accountants constitute part of the management process and provide critical information for planning, assessing, controlling, and decision-making (Talha, Raja & Seetharaman, 2010). Accountants also address all financial issues and develop planning and performance management systems (Long, Hashim, Abdul Rahman & Ibrahim, 2017). Furthermore, accountants prepare financial reporting and control skills to assist management in developing and executing organisational strategy (Emsley, 2005). Accountants in the public sector are primarily responsible for managing collection and payment procedures based on governmental circulars. Public-sector accountants would create value and increase accountability and transparency to foster effective governance and safeguard public assets (Ghani et al., 2022). Public-sector accountants are also required to successfully and efficiently perform duties to fulfil governmental goals, including professional scepticism, to maintain effective and efficient work performance (Sayed Hussin, Iskandar, Saleh & Jaafar, 2017).

The issue of professional scepticism was extensively reviewed in the auditing literature. Professional scepticism is an essential trait serving as a fundamental predictor of auditors' behaviour and choices (Sun, Jia & Liu, 2021). A lack of professional scepticism was frequently cited as the primary cause for auditors' inability to discover substantial misstatements (Quadackers, Groot & Wright, 2014). Nevertheless, relevant literature demonstrated that professional scepticism was not thoroughly researched to qualitatively identify specific accountants' professional scepticism attributes. As such, this qualitative study aimed to

examine the attributes impacting accountants' professional scepticism in the public sector to determine both individual and organisational factors contributing to professional scepticism. The findings would assist the government and other stakeholders in thoroughly understanding the influencing attributes. Section 2 of the current study presents the literature review, while Section 3 elaborates on the research design. Section 4 details the findings and discussion. Section 5 concludes this study.

2.0 Literature Review

Workplace scepticism denotes a mindset of performing an impartial review of audit results, in which auditors with a high degree of professional scepticism require more persuasive evidence in terms of quality and quantity (Puthukulam Ravikumar, Sharma & Meesaala, 2021). Professional scepticism is key to high-quality auditing. A sceptic exhibits a high level of questioning, careful observation, serious thought, and the ability to suspend conventional beliefs. The terms 'professional scepticism' and 'accounting scepticism' relate to the attitudes of 'questioning', 'careful observation', 'probing contemplation', and 'suspension of belief' in accounting (Sayed Hussin & Iskandar, 2013). According to Sayed Hussin and Iskandar (2013), auditors should retain a healthy level of professional scepticism to ensure that suitable audit methodologies are applied throughout the auditing process. Similarly, accountants should possess a high level of professional scepticism (Ghani et al., 2022) to accurately identify the factors driving auditors' and accountants' professional scepticism. Most past studies utilised quantitative approaches, such as questionnaire surveys, in place of qualitative approaches, including interviews.

A plethora of auditing studies were devoted to analysing the attributes impacting auditors' degree of professional scepticism. For instance, Hurtt, Brown-Liburd, Earley and Krishnamoorthy (2013) highlighted four relevant factors, with the antecedents consisting of individual attributes (traits, experience, training, regulations, and standards), evidentiary characteristics (or the absence of evidence), client characteristics (dispositions to get along with the auditors), and environmental impacts. In addition, the auditors' sceptical judgements and behaviours were influenced by the obtained incentives, qualities, information, audit experience, and training (Nelson, 2009), which served as motivation to perform job duties within the allotted time and contributed to more sceptical behaviours (Nelson, 2009). Although professional scepticism among accountants remained highly unexplored, accountants' experiences could be one of the contributing factors. Professional experience is accumulated through numerous practices and direct feedback aside from general knowledge, which leads to successful job completion with high quality (Bedard & Chi, 1993; Asadnezhad, Hejazi, Akbari & Hadizadeh, 2017; Ibidunni, Ogunnaike & Abolaji, 2017) and perform informed judgements (Zwane, 2018). Johari, Hati and Sayed Hussin (2022) also postulated that more experienced auditors would expect non-errors in audit findings, while Ratna and Anisykurlillah (2020) stated higher professional scepticism resulted from greater auditing experience.

Vera-Munoz, Kinney Jr. and Bonner (2001) described domain experience as "encounters relating to a specific discipline that gives the chance for obtaining knowledge (information stored in memory) about that field" (p. 408). Experience in a domain renders well-developed knowledge structures with a significant influence on decision quality (Bonner, Libby & Nelson, 1996). Kaplan and Norton (1992) investigated the relationship between experience and performance and indicated that experience significantly impacted accountants'

job performance. Moreover, Vera-Munoz et al. (2001) discovered that specific accounting experiences influenced participants' choice of an appropriate issue representation in the study of accountants at CPA companies. The specific experiences would enable the learning of different knowledge types, thus enhancing accountants' information relevance. Similarly, Schmidt, Hunter and Outerbridge (1986) demonstrated that task performance would be improved with higher experience and much-acquired information. Nonetheless, several prior studies (Earley, 2002) countered that auditors who gained expertise and trust in non-errors would reflect low professional scepticism. Earley (2002) discovered that experienced auditors preferred not to probe the financial reports in detail when the first evidence fulfilled auditing expectations, particularly if the conclusion indicated non-error financial statements.

Accountants' attitudes could catalyse professional scepticism. Attitude denotes a "psychological inclination manifested by appraising a particular thing with some degree of favour or dislike" (Eagly & Chaiken, 1993, p.1). Saputra, Damayanti and Usmanit (2021) advocated auditors to develop self-efficacy and retain a sceptical attitude in relevant tasks to improve the auditor's ability to detect fraud. An auditor who exhibits a sceptical mindset would not blindly accept the client's explanation. Instead, the auditor would query the client to ascertain the cause, proof, and confirmation of the investigated item (Andreas, Zarefar & Rasuli, 2016). Contrastingly, the auditor with low professional scepticism would only identify inaccuracies generated by human mistake without detecting inaccuracies engendered by fraud when the perpetrator attempted to conceal misdemeanours (Suraida 2005). Governmental auditors might encounter significant difficulties when a strong emphasis on family, community, and other humanistic concerns exists, which would impact the auditors' professional scepticism and the quality of audit findings.

The auditing literature also identified integrity as a potential attribute for accountants' professional scepticism. Integrity is a fundamental quality distinguishing humans from animals, which is a quality or characteristic of individual or organisational behaviour representing appropriate conduct according to moral values, standards, and rules accepted by organisational and societal members (Bauman, 2013). The consistency and coherence of organisational aims, personal values and beliefs, and individual behaviours also contribute to integrity levels (Badaracco & Ellsworth, 1991; Christina & Tjaraka, 2018; Ratna & Anisykurlillah, 2020). Therefore, integrity is considered to produce a direct impact on organisational activities, decisions, or moral choices (Trevinyo-Rodriguez, 2007). Relevant members are anticipated to conduct all aspects of professional, commercial, and personal lives with honesty and integrity by adhering to the core values. Honesty, fair dealing, and truthfulness are several components of integrity, which is a necessity when serving the public interest. Thus, auditors should behave and act with integrity through various traits, including honesty, fairness, candour, bravery, intellectual honesty, and secrecy. Furthermore, ensuring that the auditor does not experience any conflicts of interest is integral to maintaining personal integrity (Andreas et al., 2016). Meanwhile, regulation could be a contributing factor to determining accountants' professional scepticism, which serves as accountants' guidelines in job performance (IFAC, 2006). Auditors are also obligated to comply with both professional standards and legal requirements when performing audits of financial accounts. Auditors are held to a high accountability level (Dimitrova & Sorova, 2016). As such, professional judgements are pivotal in maintaining suitable professional scepticism (Glover & Prawitt,

2014). Nevertheless, previous scholars did not assess the associations of regulation and integrity with accountants' professional scepticism (see Harber & Marx, 2020).

Past studies investigated the correlation between technology and professional scepticism. Contemporary technology is no longer a luxury but a necessity in the business world, with every profession required to be equipped with technologies to adapt to constant alterations (Giles, 2019). Existing technologies encompass available products in the market (Said, Ghani & Ibrahim, 2011), which advance swiftly and transform the traditional operations of conventional accounting and bookkeeping practices. Hence, auditing firms receive both pressure and opportunities to adopt alternative methodologies in the process of auditing and reporting (Huy, Rowe & Truex, 2012), which promotes the introduction of automated auditing, data analytics, risk assessment, and enhanced scepticism and judgment based on artificial intelligence (AI). The AI could identify and process information relevant to the auditor's analysis and decision-making (AICPA, 2020) while extracting valuable information from digital documents to improve auditors' decision-making capacity (Kokina & Davenport, 2017; Al-Sayyed, Al-Aroud & Zayed, 2021). The AI is also beneficial and smart, which saves auditing time and effort while improving the accuracy level and the speed of data analysis. Nonetheless, the application of technology in accounting is in the preliminary stages.

3.0 Research Design

3.1 Participants

The current study selected public-sector accountants employed in various divisions, departments, branches, states, ministries, and universities as study participants. The participants were approached and invited via phone or email, with 18 accountants consenting to participate. The sample size was considered sufficient as the 18 participants' interview responses were uniform, which suggested data saturation. This technique coincided with Ragin and Becker's (1992) proposal, wherein reiterative responses indicated sufficient participants.

3.2 Research Instrument

Qualitative interviews were conducted with accountants selected to represent the population. A questionnaire with semi-structured items was developed to probe participants' opinions on potential attributes that might impact accountants' professional scepticism in the public sector.

3.3 Data Collection and Analysis

The researchers stipulated the interview appointment details upon agreement with the study participants. The interviews were conducted at the participants' workplaces in both Bahasa Malaysia and English to avoid bias from the participants' jobs. The interviews were recorded upon obtaining the participants' consent and subsequently transcribed. The text was organised and categorised in terms of the crucial topics post-transcription and verbatim coding. Subsequently, a category system was generated to organise and direct the data assessment procedure. Responses in Bahasa Malaysia were translated and quoted verbatim to fulfil the study requirements.

4.0 Findings

The qualitatively analysed interview transcriptions revealed five major attributes, namely experience, attitude, integrity, regulation, and technology, that impacted the accountants' professional scepticism levels. The attributes of experience, attitude, and integrity represent individual attributes, whereas regulation and technology represent organisational attributes.

4.1 Experience and Accountants' Professional Scepticism

The first attribute discovered in this study was experience, wherein the participants suggested the importance of experience in positively impacting professional scepticism apart from adhering to standard procedures. Miss C delineated as follows:

“Experience is important too. Can't just follow books. Especially when working in state government, we cannot be completely guided by books. We have to give solutions.” [translated]

Miss C further explained:

“Experience and training are important. For example, when preparing financial statements, there must be questions. This year it goes up, next year it goes down. Why does it go down? We have to wonder why. We have to ask a question. I will check, and I will ask why coming to zero is okay. Whether it was written incorrectly, the transaction was incorrect, and the credit/debit was incorrect. From there, we can see. But this comes from experience.” [translated]

Miss H also expressed a similar perspective:

“I think experience is important. Even if we go for training, experience is very important. Training is important. But sometimes we will overlook certain matters. When we practise again what we were trained on in Financial Statements, we can detect all that, so it is easier. Experience is important. Training is, of course, important as well. On-the-job training and training are essential. You can ask your superior. So it is important. At our office, that's what we practice. What is not sure, we will ask, especially anything dubious.” [translated]

Mr C explicated:

“Experience is important. Various organisations will face different issues. We can try to detect any misstatement from experience or from cases that occur.” [translated]

Professional scepticism was also perceived to increase as accountants gained more experience, which indicated a higher level of professional scepticism. Miss E stated as follows:

“Experience is important. The more you experience, the more your professional scepticism may increase. We can feel that something happened. Judgment is based on experience. That should be fine if the judge went well. If entered into the wrong account, sometimes we receive payments that we don’t know from whom. So that’s a big problem. So we use JomPAY to determine where the payment is coming from. So, it settled easily.” [translated]

Miss K provided a similar opinion:

“To increase scepticism, experience is essential. Because of the kind of results, for example. The same concept applies to accounting. However, examples go to ministries, agencies, or units and apply different concepts and approaches because these organisations are different. So, job rotation is very important, it is very important, and it is to add experience. This experience adds to the nature of that doubt.” [translated]

Another participant elucidated that the most crucial factor contributing to professional scepticism was experience. Miss J expressed as follows:

“For me, the contribution is experience. Because the experience of each *Pusat Tanggungjawab* (PTJ) is not the same. The process is sometimes different. For example, the Department of Education is different. Here, everything has a payment claim: purchases. Everything is different. Experience helps. What we learn and what we practise are not the same thing. The experiences are different. We work with people. In terms of documentation, there are always many doubts, but they are not too big or small mistakes. Experience helps us have professional scepticism.” [translated]

Participants emphasised the importance of experience in accountants’ professional scepticism. Relying exclusively on books was insufficient, particularly in the state government sector, as providing solutions was critical. Experience and training were also highlighted as vital elements, which enabled accountants to ask probing questions and uncover discrepancies in financial accounts. The participants stated that experience positively contributed to professional scepticism by assisting accountants in identifying misstatements and handling unique challenges to distinct organisations, especially in improving judgement and decision-making. Furthermore, the present study demonstrated that experience was integral to establishing accountants’ professional scepticism, which was consistent with prior findings (Zwane, 2018; Ratna & Anisykurlillah, 2020). Summarily, the participants opined that experience was pivotal to accountants’ professional scepticism (Asadnezhad et al., 2017; Ibdunni et al., 2017). Kaplan and Norton (1992) also explicated that knowledge might not be sufficient to develop professional scepticism. Accountants’ belief in non-errors would be a more probable explanation for certain misdemeanours as auditors became more experienced.

4.2 Attitude and Accountants’ Professional Scepticism

The second attribute impacting accountants’ professional scepticism was attitude. The study participants highlighted the significance of attitude in elevating professional scepticism, as explicated by Miss C:

“Attitude is more important. You can't do the work casually. Our accountants have a target, and we have a time frame that we have to achieve. If we do not reach the target, it will be difficult. In terms of moving towards an excellent work culture, fulfilling the ‘always positive attitude’ is a must. In terms of integrity, ethics are necessary. Accountants should have it already. Accountability as an accountant must exist before his appointment. It has to do with attitude. Attitude is very important. I'm certain about the attitude of not working casually. If there is a casual attitude towards work, it will be difficult. It is like saying, “We are not working to go somewhere”.” [translated]

Mr B provided a similar opinion:

“Attitude is important. He gets it from the adaptation culture. This is my opinion. That is why when we recruit staff for grade W, we look at attitude, not just knowledge and skills. We want to make sure that this staff is a good one.” [translated]

Similarly, Miss I opined that:

“Sometimes we will meet an assistant accountant who really doesn't know and who will say, “I just process and don't know”. Kind of SPM level. But sometimes he will say, “The accountant will check; this is not necessary”. He's the boss who will check. This is the normal attitude. It goes back to the personality. If we work in a place where there are many operational processes and we have an account assistant like this, we will be exhausted. Sometimes, when administrative officers rely on accounting assistants like this, it is over. So, that's why, if it's an accounts assistant or an assistant accountant, there should be awareness to learn. Sometimes their attitude is like that because they feel that their grades are low and nobody listens.” [translated]

Miss G provided a further explanation for why attitude was integral to influencing professional scepticism among accountants in the public sector:

“Many people don't like me because I'm very meticulous. I will present my facts to the top management. Anything is up to them. I manage expenses. We can see the trend. Why, how? There has to be an explanation. Must have why, how, and when. They are important. ‘Why’ is scepticism. We look at how many accountants are there and ask why. Maybe it is because of my passion and because I was trained in 'why'. My attitude is that of an auditor, which makes me think like this even though I'm an accountant. So that's what I want to say. It also depends on the individual. That's important for professional scepticism.” [translated]

Nonetheless, Mr C expressed that the attitude was challenging to manage. She emphasised the importance of understanding the role of accounting and government spending:

“Attitude is difficult to control. We need to understand the purpose of accounting and spending.” [translated]

Mr D also delineated as follows:

“Some areas go back to being humans; humans are more creative. We try to control as much as we can, no matter what. Actually, this professional scepticism needs to be there so that we don't have to rely only on processes and procedures. We have to be rigid with procedures. But we give exposure to professional scepticism because these officers do a lot of work. There is filing, processing, and audit. We have to learn from that. From the staff below, we have to learn a lot. For example, if there is an audit finding, we have to learn a lot and share it with them.” [translated]

Accountants' attitudes significantly influenced the degree of professional scepticism (Saputra, Damayanti & Usmanit, 2021). Participants emphasised the need to maintain a positive and dedicated mindset when exhibiting high professional scepticism, in which the significance of integrity, ethics, and accountability was highlighted in cultivating the proper attitude among accountants. Participants also emphasised that a casual approach towards work would create a high difficulty in maintaining professional scepticism successfully, although attitude was challenging to regulate. As such, accountants should be proactive in learning, be diligent, and be open to questions and seeking explanations. A participant also highlighted the need to understand the function of accountants and government expenditures, which suggested the importance of knowledge and comprehension. Summarily, attitude is pivotal to increasing professional scepticism among public-sector accountants for critical thinking, judgement, and enhanced work practices.

4.3 Integrity and Accountants' Professional Scepticism

The third attribute significantly impacting the accountants' professional scepticism was integrity. Mr E explicated as follows:

“Integrity for professional scepticism is within yourself. Like me, I always remind the staff that when you do something, you have to remember to apply it.” [translated]

Mr A also expressed integrity was pivotal to ensuring high-quality work performance:

“Integrity is important. If we don't have integrity, it is easy for people to influence us; we will approve easily. We need to have integrity.” [translated]

Miss D opined on the importance of integrity:

“Integrity is important. Frequently, the staff below makes mistakes, but actually, they do not know. Skills and knowledge are important. If we don't know, that's when we make mistakes.” [translated]

Mr A provided a further explanation:

“In fact, he relies on integrity. Either he really lacks integrity or he really doesn't know. We make mistakes for two reasons: Either we lack integrity or we do

not know. We have integrity, but we do not know or do not realise, or maybe we don't have the knowledge. But knowledge needs to be added." [translated]

Mr D supported Mr A's perspective:

"For me, it is under the control of the individual. Like us, they had a lot of exposure. For example, we had a lot of anti-corruption courses and others. So, finally, it is back to the individual. I also always tell them to work honestly. We always remind them to go in that direction. We do have laws and procedures, but there is always a loophole. We look at our faith and our desires to control behaviour. No matter how strong the rules are, we need to find spiritual strength and positive values. Otherwise, people will still find ways to do all sorts of things." [translated]

All study participants agreed that integrity significantly impacted accountants' professional scepticism following Bauman (2013), who postulated the importance of integrity in acting according to moral values, standards, and rules accepted by organisational and societal members. Other studies also supported similar views (Badaracco & Ellsworth, 1991; Treviño-Rodríguez, 2007). Accordingly, integrity is a quality that positively influences professional scepticism among accountants. The participants emphasised the necessity of maintaining high integrity in respective jobs owing to the direct impact on professional scepticism. Integrity is integral to preserving job quality while avoiding external pressures that could impair professional discretion. Participants also underscored honesty in preventing mistakes and continual learning to improve knowledge. Furthermore, the participants expressed that integrity is a personal trait to be cultivated and maintained aside from adhering to current rules and processes, as integrating personal principles with professional behaviour is required to retain integrity. Summarily, integrity is pivotal to developing professional scepticism among accountants (Christina & Tjaraka, 2018; Ratna & Anisykurlillah, 2020).

4.4 Regulations and Accountants' Professional Scepticism

The fourth attribute influencing the accountants' professional scepticism was regulations, which would assist accountants in adhering to proper job etiquette when performing respective tasks. Mr C explicated as follows:

"We can look at the financial statements, but we need to have knowledge and align it with circulars and acts. So, it will improve our professional scepticism. Professional scepticism training and knowledge to improve professional scepticism in terms of policy compliance do exist." [translated]

Miss F further explained:

"For us, accountants, when I come, the first thing I understand is the nature of the business and apply the accounting knowledge and policies that are relevant to the operation. For me, credibility, as long as we follow the circulars and ensure that what we do is according to the circulars and accounting policy, should be okay. So, it can help improve professional scepticism. The professional scepticism will arise once we do not follow all

these standards. For example, there is a problem, so we refer to standards. So, professional scepticism, first, is that we should detect and follow the standard. So, we refer.” [translated]

Mr J and Miss N also provided the same opinion:

“To increase this level of scepticism, accountants need to keep up with the current situation and adapt to changes in existing circulars. This will help the accountants in their work and assignments (Mr J).” [translated]

“These circulars are too many and too important to carry out the task. The biggest challenge is to understand the circular (Miss N).” [translated]

Miss D delineated that accounting standards could assist in comprehending the accounting treatment of existing transactions and elevate professional scepticism:

“Now that we are implementing MPSAS, we need to know in depth about accounting standards so that they can be related to our transactions or work. For example, we check if our work is correct and follow the processes. The work should be proper and according to standards. So, from there, it can help improve professional scepticism. Basically, we have to follow the guidelines; like it or not, we have to follow them. But in my opinion, how do we know if it is doubtful or not? For example, we look at the scenario that I shared earlier. The price, like the purchase, is checked to see if it is correct. This is what helps improve professional scepticism.” [translated]

In addition, Miss J commented as follows:

“We have to follow the rules, and there are circulars. But for me, we do a review. We need to have doubts, right? It can't be that easy and simple. We need to know what is implied and hidden. Only at the department level do we check. We have many circulars. We look at assets; public money matters. We already know and understand this circular. Indirectly, it has helped us. So, scepticism and guidance already exist.” [translated]

Miss H also elucidated that:

“For a statutory body, so many rules to comply with for self-accounting. So, it is very necessary to help towards professional scepticism.” [translated]

The study revealed that regulations significantly influenced accountants' professional scepticism. The relevance of rules in guiding work and ensuring compliance with standards and policies was emphasised by the participants. Regulations were critical to increasing professional scepticism by providing a framework and reference point for decision-making and accounting treatment. Participants also discussed the importance of being updated with legislation and adapting to changes in circulars to maintain a high professional scepticism level aside from understanding accounting standards. Moreover, the participants acknowledged the difficulties in comprehending and applying several circulars, albeit

recognising the usefulness in guiding work while eliminating uncertainty. Summarily, regulations played a critical role in fostering professional scepticism among public-sector accountants. The significance of clear communication and regulatory understanding was highlighted for accountants to effectively eliminate large ambiguities while applying professional scepticism in the respective jobs. Dimitrova and Sorova (2016) demonstrated that regulators, standard-setters, and board and audit committees strived to expand the understanding and implementation of professional scepticism. Regulators and standard-setters could further reiterate the importance of professional scepticism among accountants in the public sector. Regulations and policies must also be clearly explained and conveyed to the accountants to ensure adequate understanding and remove existing uncertainties.

4.5 Technology and Accountants' Professional Scepticism

The last attribute contributing to professional scepticism was technology, which significantly impacted the level of professional scepticism among accountants in the public sector. The availability of a technology or system could improve accountants' professional scepticism degrees, as underscored by several participants regarding the impact on daily tasks. Miss M opined that:

“The need for technology is one of the things that is needed. It needs to be in line with existing changes. Accountants need to know and be able to apply for assignments. This actually helps analyse reporting better.” [translated]

Mr D posited that technology or a system would be beneficial in assisting the accountants in work performance, although complete reliance on the system could also negatively impact professional scepticism:

“I believe the system here is strong enough. Internal control is already strong. However, there is still room for manipulation. Even the system can't actually cater. We need confirmation that this company is not the same one. Even the system cannot detect. The system can't yet. It is also good if the system can help if there is any doubt.” [translated]

Miss F supported the notion that technology plays an important role in influencing the accountants' level of professional scepticism:

“Actually, a system is quite important, but it depends on the organisation. Like us, we are quite a big organisation, but our system is a bit outdated. We still need to have a system with many features.” [translated]

Nevertheless, the technology or system requires the feature of an audit trail to allow accountants to be aware of suspicious transactions, which would indirectly improve professional scepticism. Mr H expressed that:

“The audit trail is good. If a system has this feature, this can obviously help us increase our level of scepticism and not just key in transactions only.” [translated]

Technology is an integral component of both business and human life, which has significantly altered enterprises and corresponding operations. Consistent with participants' opinions, technology usage, such as AI and machine learning, could enhance accountants' work efficiency in terms of judgment and professional scepticism (Puthukulam et al., 2021). This study identified technology as a contributing factor to high professional scepticism among public-sector accountants, as acknowledged by participants regarding the significance of technologies or systems in supporting daily jobs. The importance of aligning technology with existing developments was also underscored to enable more efficient accounting analysis and reporting. Nevertheless, relying solely on technology would engender negative consequences for professional scepticism when the technology could not detect certain manipulations or questionable transactions. Participants stated a need for technology to provide elements, such as an audit trail, to improve professional scepticism for the detection of probable abnormalities. Summarily, technology significantly impacted accountants' professional scepticism levels. Employing AI could also increase the effectiveness and efficiency of task performance (Al-Sayyed, Al-Aroud & Zayed, 2021) through the potential benefits of technology in enhancing job efficiency and judgement. Understanding the limitations and the need for technological features is also crucial to enabling professional scepticism.

5.0 Conclusion

The present study qualitatively analysed the attributes contributing to professional scepticism among Malaysian public-sector accountants to identify attributes that could not be discovered through a quantitative approach. A total of 18 participants were approached and interviewed. The findings demonstrated that the level of professional scepticism was determined by two major categories, namely individual and organisational attributes, apart from audit quality (Hai, Toanc Quy, & Tung; 2020) and fraud detection (Satyawan, Triani, Kusumaningsih & Nazri; 2022). Among the individual attributes, experience, attitude, and integrity significantly influenced public-sector accountants' professional scepticism. In terms of organisational attributes, regulatory and technological attributes significantly elevated public-sector accountants' professional scepticism. The five attributes established a framework for accountants in the public sector. Nonetheless, several study limitations existed as the participation of accountants in the public sector was relatively low compared to the entire population, although the number was considered sufficient to achieve the study objectives. Furthermore, the data became saturated after 18 interviews were conducted with the participants (Ragin & Becker, 1992). Future studies could also qualitatively identify other possible attributes aside from the five attributes in the current study. Summarily, the study findings provided insights for the government and other relevant parties, both domestically and internationally, regarding the attributes contributing to public-sector accountants' professional scepticism. Comprehensive and descriptive profiles of accountants working in the Malaysian public sector were also described in the present study.

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Bibliometric Analysis and Review of Digital Audit Practices in the Public Sector of Different Countries

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Abstract

Purpose: The objectives of this paper are two-fold: first, it presents a bibliometric study on digital audit in the public sector of different countries; and Second, it provides review of prior studies on digital audit implementation by governments in various countries.

Design/ Methodology/ Approach: There are two parts in the present study, and both use secondary data. The first part is a bibliometric study of past literature on digital audit in the public sector which was carried out to provide an overview of trend of publications over the last 30 years, citation analysis in terms of top cited journals and articles, as well as author analysis which covers most active single author and author with co-authorship and based on the country of the authors. The second part of the paper uses the content analysis technique on prior literature to extract and compile information on digital audit practices by the public sector of various countries in terms of the year of implementation, current status of implementation, and modules and the software used.

Findings: The results of the first of the study indicate the increasing trend of publications on digital audit in the public sector which are authored by researchers from many countries. This implies the current trend of digital audit movement by governments around the world. For the second part, the review on digital audit practices of governments in different countries reveals several European countries such as Norway, Ukraine and Germany are championing

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digital audit in the public sector although none of the countries has full-fledged implementation. Most countries started with taxation audit, and are now having labs or incubators for full-fledged digital audit experimentation in the public sector.

Originality/ Value: The findings of this paper are important due to the followings: (1) it offers insightful evidence into the current development and direction of digital audit research, which ultimately calls for more research efforts on digital audit in the public sector; (2) the information on digital audit practices by several European countries provides essential guidance to the governments of other countries including Malaysia to better prepare for its successful more advanced digital audit implementation journey.

Keywords: Digital audit, public sector, bibliometric analysis, digital transformation.

1.0 Introduction

As technology evolves and businesses become highly dependent on digital systems and processes, the need for accurate and thorough digital audits has become crucial in the private and public sectors. Generally, digital auditing is an activity of utilising digital technology, tools, and technologies to deliver audit work (Audit Scotland, 2017). According to Noël (2020), digital audit concerns utilising advanced techniques, such as data mining and software robots, to perform an audit. Globally, the practice of digital audit has spread rapidly, with several European Union (EU) countries among the earliest adopters. Singapore was the first country in Southeast Asia to adopt it (Podik, 2019).

Several fundamental reasons exist for governments to shift from the traditional type of audit to digital audit. Among other reasons, the use of advanced technology allows the auditing processes to run automatically, thus removing any standardised or repetitive parts in manual auditing, which has led to auditors' greater efficiency and productivity (Tiberius & Hirth, 2019; Kelly, 2020), and reduced risk of human error (Moffitt et al., 2018). Moreover, the application of big data and data analytics in public sector auditing can improve the quality of audit engagement in terms of having clearer and more understandable insights into public sector entities, which ultimately can enhance government accountability and transparency (Kelly, 2020; Lazarevska et al., 2022).

Despite the overwhelming benefits of digital audit, its implementation is not without challenges. Unlike developed countries, governments of numerous developing countries face challenges in shifting towards technology-based auditing due to low awareness and acceptance among the auditors to embark on digital audits (Lazarevska et al., 2022). Moreover, data unavailability due to the decentralisation of government activities at various levels is also a fundamental challenge towards fully implementing digital audits (Otia, 2022). Insufficient funding to invest in digital technology infrastructure, the low quality of available digital technology infrastructure, and high bureaucracy practices are also among the challenges faced in adopting digital audit, particularly among numerous smaller developing countries (Lois et al., 2020).

Although digital audit implementation poses obstacles, under the digital transformation initiative in line with the Sustainable Development Agenda 2030, the rapid development of digital audit implementation in developed and developing countries is evident (Volkova et al., 2021). According to Kostiantyn and Yulia (2021), the Organisation for Economic Cooperation and Development (OECD) first introduced the concept of e-audit in Europe through the Standard Audit File for Tax (SAF-T) in 2005. The system has assisted public and private auditors in performing tax audits for the last ten years. Portugal, Austria, Luxembourg, Germany, Norway, France, and Singapore have implemented e-audit, particularly for tax audit practices. Countries, including Lithuania and Ukraine, have also embarked on and are still in the process of improving digital audit practices implementation.

The rapid shift towards digital audit by governments in many countries and the increasing trend of research on digital audit practices in the public sector have motivated the researcher to undertake a bibliometric analysis to understand the various research foci of the extant literature on digital audit in the public sector. In addition, the present study provides information on the current status of digital audit practices in several countries based on a review of prior literature. The study's findings are vital as they offer insightful evidence into the current development and direction of digital audit research, which ultimately necessitates additional research efforts on digital audit in the public sector. Essentially, the information on digital audit practices by several countries, such as information related to the software used and the establishment of an 'incubator' for initial full-fledged implementation, provides essential guidance to the governments of other countries, including Malaysia, to better prepare for a successful and an advanced digital audit implementation journey.

The remainder of this paper is structured as follows: Section 2 discusses the development of digital audit in the public sector, which covers global digital transformation and digital audit development, as well as the Malaysian government's digital transformation initiatives. Section 3 describes the methodology and procedures utilised in undertaking the bibliometric analysis and the thorough review of past studies. Subsequently, Section 4 presents the bibliometric analysis findings regarding the trend of publications on digital auditing in the public sector, top impactful publications and publication avenues, active authors, and collaboration between authors on public sector digital auditing studies. Section 5 provides information on other countries' experience in implementing digital audits regarding the year of implementation, the current status of implementation and modules, and the software used. The final section, Section 6, offers the study's implications, limitations, suggestions for future research, and finally, a concluding remark.

2.0 Digitalisation Agenda in the Public Sector

Digital technologies are the key enablers of socioeconomic development (Korol et al., 2022). Technological revolutions have changed the way humans live and work by creating new opportunities and empowering people with access to information, goods, and services that were previously unavailable. The Internet, cloud computing, and the advancement of emerging technologies, such as big data analytics, artificial intelligence (AI), robotic process automation (RPA), and blockchain, can speed up digitisation by converting analogue data to a digital format. In turn, data digitalisation makes data highly accessible, transparent, and shareable, which can facilitate faster and better decision-making.

Similar to other economic sectors, leveraging technology by the public sector is a game changer for governments. Modernising government services, operations, and processes have the potential to make governments efficient, effective, and transparent to meet citizens' needs better (Korol et al., 2022). For instance, the shift from traditional paper-based processes to electronic and digital processes has improved efficiency, accuracy, and cost savings and increased access to services for citizens (Azzone, 2018; Antipova, 2019).

South Korea is at the forefront of harnessing the benefits of digital technologies in terms of providing state online services and e-government development. The country initiated its online portal, "e-Government", as early as the 1980s to provide citizens with easy access to government services. Similarly, the EU has implemented various measures to improve the data utilisation and sharing by public agencies, such as the establishment of the European Court Auditors (ECA) and the introduction of the European Data Protection Regulation (2018) to support the full digitalisation of the European Commission by 2024 (ECA, 2020).

2.1 Digital Transformation of the Malaysian Government

Malaysia began to embark on its digitalisation journey in 1996 by establishing the Multimedia Super Corridor (MSC) envisioned by the former Prime Minister, Tun Dr. Mahathir Mohamed. The government has introduced various policies to promote technological and digital transformation, as shown in Figure 1.

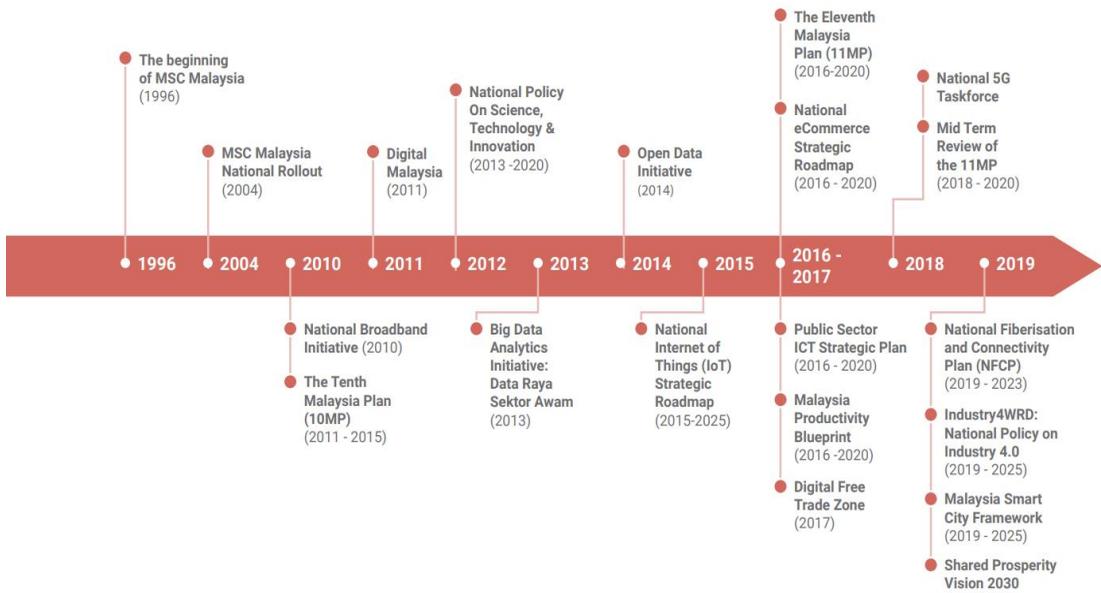


Figure 1: The Development of Digital Initiatives of the Malaysian Government

Source: Malaysia Digital Economy Blueprint (2021)

In response to the Fourth Industrial Revolution (4IR) and the rapid advancement of disruptive technologies, the government introduced a ten-year digital economy blueprint (2021-2030) known as MyDIGITAL in 2020 to set the direction and strategise initiatives towards becoming

a digitally-driven, high-income nation, and a regional leader in digital economy implementation. MyDIGITAL catalyses the realisation of the Twelfth Malaysia Plan and Shared Prosperity Vision 2030 (SPV 2030), where the digital economy is identified as a key economic growth area (KEGA) to achieve inclusive, responsible, and sustainable socioeconomic development.

In a fast-changing digital world and rapid globalisation, MyDIGITAL provides the way forward to realise the potential of a digital economy fully. As shown in Figure 2, one of the key thrusts of MyDIGITAL, for instance, Thrust 1, is to drive digital transformation in the public sector, emphasising the use of digital technology to enhance workflow efficiency and productivity, improve the digital skill sets of civil servants, and utilise data to enhance government services. Audit is one of the important government activities subject to digital transformation.

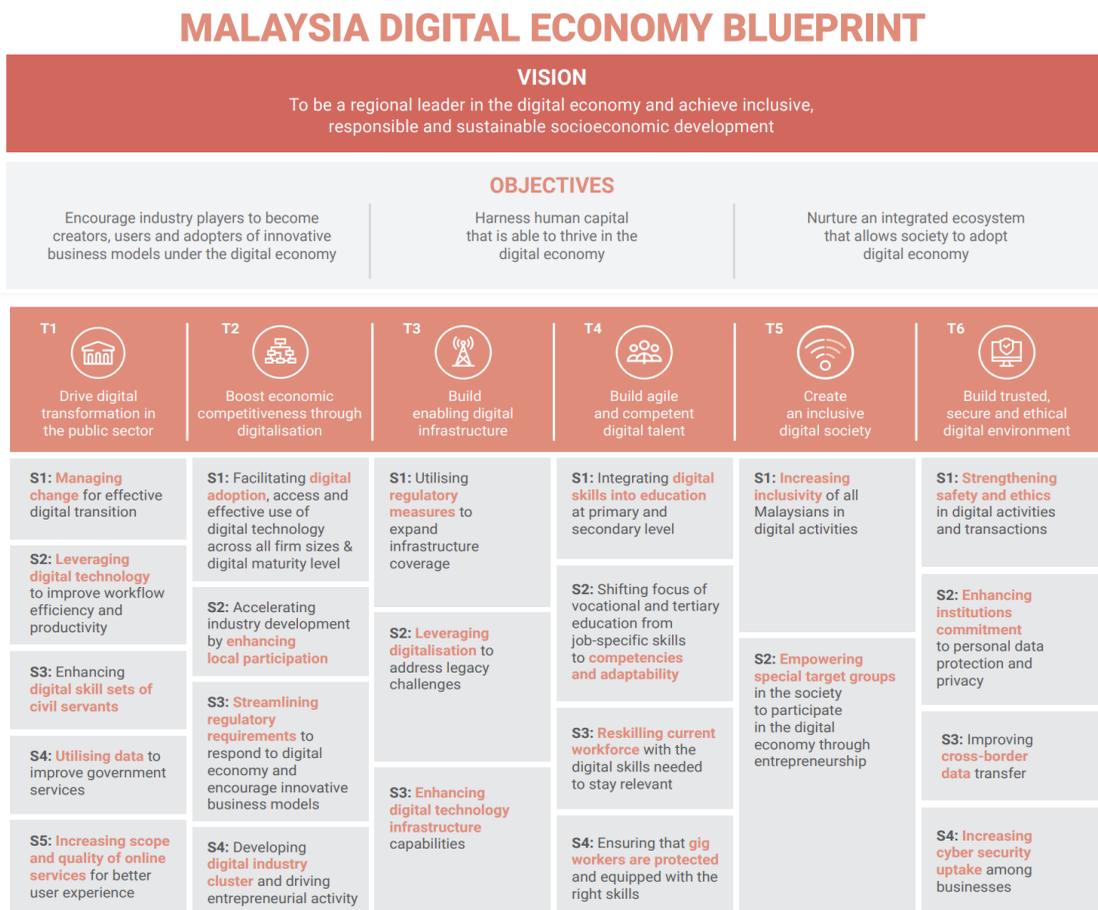


Figure 2: Malaysia Digital Economy Blueprint - MyDIGITAL

3.0 Research Methodology

The present study encompasses two parts, which utilise secondary data. The first part is a bibliometric analysis of past literature concerning digital audits in the public sector, which was undertaken to provide an overview of trends, discover research gaps, and generate new ideas

for subsequent studies, besides contributing to the extant literature (Donthu et al., 2021). In undertaking the bibliometric analysis, procedures described in the subsequent sub-sections were followed. The second part of the study employed content analysis techniques to extract and compile information on digital audit practices in the public sector of various countries. This analysis was conducted on prior literature and official documents, focusing on aspects such as the year of implementation, current implementation status, and the modules and software used.

3.1 Bibliometric Analysis Procedures

Figure 3 displays how the research protocol developed by Lardo et al. (2022) was adapted in this study to eliminate the possibility of making mistakes during article selection or overlooking the necessary procedures. The protocol contains three phases: Phase 1 (Dataset setting), Phase 2 (Data refining), and Phase 3 (Data analysis).

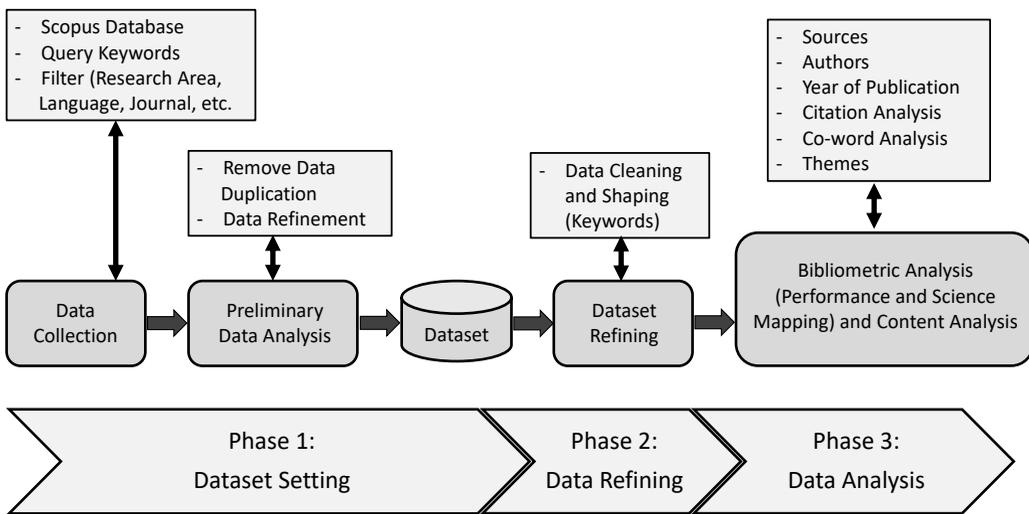


Figure 3: Research Protocol
 Source: Lardo et al. (2022)

Phase 1: Dataset Setting

The Scopus database (comprising journal papers) was employed to collect data for the study due to its breadth of coverage, accuracy, and vast data availability. It is trusted and utilised by leading academic, business, and government institutions. The database includes over 87 million documents, 1.8 billion cited references, 17 million authors, 7,000 publishers, and 94,000 institutions (Elsevier, 2023). Relevant journal papers from the Scopus database were gathered in March 2023. The study used keywords such as “digital” and “audit” and “government” or “public sector” to find the pertinent body of literature. “TITLE-ABS-KEY (digital* AND audit* AND government OR {public sector})” was the search query constructed and applied in the database. The collection of datasets is essential to understand the research coverage. As a result, a total of 251 relevant documents were identified.

Phase 2: Dataset Refining

Dataset refining involves cleaning and shaping the data. The cleaning focuses on fixing and removing incorrect, incomplete, improperly formatted, or duplicated data. In contrast, shaping the data is undertaken by filtering, sorting, combining, and removing columns (IBM, 2021). The dataset utilised for a bibliometric analysis requires cleaning to remove any duplication and erroneous entries (Donthu et al., 2021). The keywords with similar meanings, such as “audit” and/ or “audits”, must be cleaned. The data refining process involving the selection of the relevant journal papers was conducted manually and independently by three researchers to ensure that no relevant journal papers were omitted. After the refinement phase, the final dataset used in this study consisted of 47 journal papers.

Phase 3: Data Analysis

The data analysis method developed by Donthu et al. (2021) was utilised in analysing the 47 datasets. The method contains two parts: science mapping and performance analysis and enrichment technique. In the present study, science mapping and performance analysis covers the analysis of keywords, authorships, and publication trends by year and number. The second part of the analysis encompasses an enrichment utilising a network analysis that employs VOSviewer visualisation tools. The VOSviewer is software for visualising bibliometric networks, creating network maps, and researching them (Van Eck & Waltman, 2023). These networks may include journals, researchers, or individual publications and can be constructed based on citation, co-occurrence, co-citation, or co-authorship relations. In this study, citation and co-authorship analyses using VOSviewer were used, and the results are presented in Section 4.

4.0 Findings on Bibliometric Analysis

The findings from the bibliometric analysis undertaken in the present paper include publication trend on digital audit in the public sector over the last 30 years, citation analysis in terms of the top cited journals and articles, and author analysis, which comprises the most active single author and author with co-authorship and based on the authors’ country. The results are presented in the following sub-sections.

4.1 Trend of Publication Over 30 Years

As shown in Figure 4, the publication on digital audit in the public sector started in 1993. Nevertheless, there were no publications on this topic until 2001, when only one (2%) publication emerged. Similarly, there was a gap of almost ten years until 2010, with only one (2%) publication on digital audit in the public sector. Between 2015 and 2022, except for 2021, there was an increasing trend in the number of publications on digital audit in the public sector, with the highest number of publications of 14 papers (30%) in 2022. The rising trend of published works in recent years implies that the current shift towards digital audit in the public sector aligns with the digital transformation agenda of various governments globally.

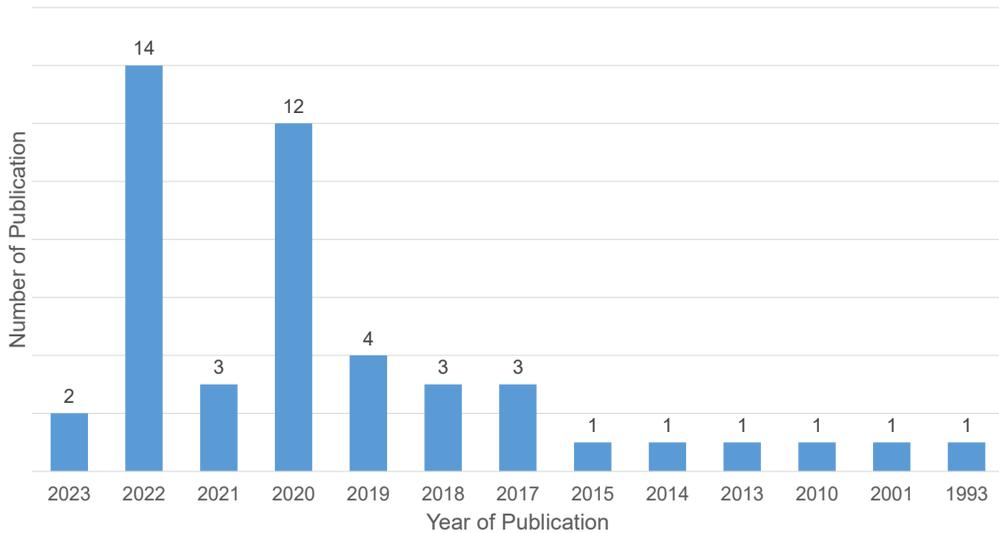


Figure 4: Performance Analysis by Year of Publication

4.2 Citation Analysis

Citation analysis assists in detecting popular research topics and papers that other researchers published (Van Eck & Waltman, 2023). The citation analyses covered in the present study include the most cited journals and documents or papers. The subsequent sub-sections present the results of each of the analyses.

4.2.1 Top Cited Journals

According to VOSviewer findings, among 40 different sources or journals with publications on digital audit in the public sector, Government Information Quarterly is the most cited journal, with 59 citations and two relevant papers on this topic. The titles of the two papers are: 'Appraising the Impact and Role of Platform Models and Government as a Platform (GaaP) in UK Government Public Service Reform: Towards a Platform Assessment Framework (PAF)' and 'Transparency and Accountability in Digital Public Services: Learning from the Brazilian Cases'. Subsequently, the Iberian Conference on Information Systems and Technologies (CISTI) is the next most cited journal with 22 citations and three publications, followed by the Financial Accountability and Management journal with 14 citations and five publications.

4.2.2 Top Cited Articles

In terms of article citation, all 47 documents or journal articles were cited at least five times. The journal article by Brown et al. (2017) entitled, 'Appraising the Impact and Role of Platform Models and Government as a Platform (GaaP) in UK Government Public Service Reform: Towards a Platform Assessment Framework (PAF)' published in the Government Information Quarterly, had the highest number of citations (56 citations). The authors proposed a platform model known as Platform Appraisal Framework (PAF), which adopts a more advanced

technology than the existing government digital platform (for instance, GaaP) to support the digital audit initiative of the United Kingdom (UK) government.

The second most cited article is the article by Shah and Khan (2020) entitled 'Secondary Use of Electronic Health Record: Opportunities and Challenges' with 17 citations and published in IEEE Access. The authors demonstrated how Electronic Health Records (EHR) data could be utilised for numerous purposes, including clinical audit. Moreover, the article emphasises data security and patients' privacy risks associated with secondary EHR usage, particularly when EHR data are sent across a network and shared with many stakeholders. Antipova's (2018) article, 'Using Blockchain Technology for Government Auditing', is the third most cited article. The article was published in the CISTI and has 15 citations to date. The author discussed the application of blockchain and digital technologies in government auditing to enhance data security and prevent fraud in government funds, outlining the related issues and techniques.

The article by Loukis and Spinellis (2001) titled, 'Information Systems Security in the Greek Public Sector', published in the Information Management and Computer Security, has ten citations and is ranked as the fourth most cited. The authors studied several aspects of public sector information systems security, encompassing awareness, the measures (backup copies, restoring data and firewall), and digital data confidentiality. The article titled 'Digital Public Sector Auditing: A Look into Future', published in the Quality - Access to Success, with eight citations and authored by Antipova (2019), is ranked number five. The article explores the potential of digitalisation in public sector auditing, enabling auditors to detect fraud and inefficiency more effectively through advanced technologies, ultimately enhancing accountability and transparency. The author proposed four main blocks of future public sector auditing: Digitalisation, Preliminary, Continuity, and Analysis.

Two articles, each with six citations, were authored by Bansod and Ragha (2020) and Mosweu and Ngoepe (2019). Bansod and Ragha's article, titled 'Blockchain Technology: Applications and Research Challenges,' was published at the 2020 International Conference for Emerging Technology (INCET 2020). The article by Mosweu and Ngoepe (2019), titled 'Skills and Competencies for Authenticating Digital Records to Support Audit Process in Botswana Public Sector,' was published in the African Journal of Library Archives and Information Science. Bansod and Ragha (2020) discussed several challenges, such as privacy, scalability, integration, standards, software testing, security, and smart contract management, which blockchain technology faces. As technology evolves, the number of attackers or hackers who attempt to break into the system also increases. On the other hand, Mosweu and Ngoepe (2019) studied the skills and competencies to verify digital accounting records in the Government Accounting and Budgeting System (GABS). They discovered that professionals and auditors in the public sector in Botswana lack digital forensic knowledge.

4.3 Authorship and Co-Authorship Analysis

An authorship analysis was undertaken to highlight active researchers. In contrast, co-authorship analysis was undertaken to determine the total number of publications with which two or more researchers have worked together (Van Eck & Waltman, 2023).

4.3.1 Most Active Authors

A total of 112 authors or researchers have written and published paper(s) on digital audit in the public sector over the past 30 years. Table 1 provides information regarding the top most active authors who have published between two and four papers on digital audit in the public sector. Tatiana Antipova from Russia is the most active author with four single authorship publications. As mentioned in the earlier section, one of her publications from 2018 is among the most cited papers. Her active involvement in publishing articles on digital audits in the public sector is due to her direct involvement in the planning for implementing digital audits in the Russian government. Ileana Steccolini from the University of Essex, UK, and Enrico Bracci from the University of Ferrara, Italy, have both published three articles on the issues of government implementation of digital audit.

4.3.2 Most Active Authors with Co-authorship

In co-authorship analysis, the total link strength (TLS) signifies the number of authors who have collaborated as co-authors (Van Eck & Waltman, 2023). Among the 112 authors in the field of digital audit in the public sector, only eight have engaged in co-authorship. The TLS ranges from one to seven, as indicated in Table 1. Ileana Steccolini has the highest TLS with seven publications, followed by Enrico Bracci with six TLS. Ileana Steccolini co-authored three articles with researchers from various universities in the UK, Australia, Canada, and Italy. Her first article, 'The Future of Public Audit,' is co-authored with Laurance Ferry and Vaughan S. Radcliffe from Durham University, UK, and the Ivey Business School, Canada, respectively. The second article, 'Performance auditing in the public sector: A systematic literature review and future research avenues', was co-authored with three other researchers, Tarek Rana, Dessalegn Getie Mihret, and Enrico Bracci. The first two co-authors are from RMIT, Australia, while the third co-author hailed from the University of Ferrara, Italy. The third article, 'Accounting and accountability for the digital transformation of public services', was published by collaborating with Deborah Agostino and Enrico Bracci.

Table 1: Top Eight Authors Based on Co-Authorship Analysis

Rank	Author's Name	Affiliation	Country	No. of Articles	Citations	Total Link Strength
1	Ileana Steccolini	University of Essex	United Kingdom	3	9	7
2	Enrico Bracci	University of Ferrara	Italy	3	10	6
3	Javis Eboa Otia	University of Ferrara	Italy	1	4	1
4	Dessalegn Getie Mihret	RMIT University	Australia	1	4	3
5	Tarek Rana	RMIT University	Australia	1	4	3
6	Laurance Ferry	Durham University Business School	United Kingdom	1	3	2
7	Vaughan S. Radcliffe	Ivey Business School	Canada	1	3	2
8	Deborah Agostino	Politecnico di Milano	Italy	1	2	2

4.3.3 Frequency of Authors Based on Country

The information on the number of authors based on the country was gathered to explore the diversity of the researchers and authors in public sector digital audit. Table 2 displays 110 authors from 27 countries who have contributed to research publications on digital audit in the public sector. China and Brazil have more than ten authors, with 21 and 11 authors, respectively. India, the UK, the United States, Australia, Greece, Italy, and the Netherlands have at least five authors on digital audit in the public sector.

Table 2: Frequency of Authors Based on Country

No.	Country	Number of Author(s)	No.	Country	Number of Author(s)
1.	Australia	5	15.	Pakistan	2
2.	Bangladesh	4	16.	Portugal	3
3.	Brazil	11	17.	Russia	1
4.	Bulgaria	1	18.	Saudi Arabia	1
5.	Canada	1	19.	Singapore	2
6.	China	21	20.	South Africa	2
7.	Ecuador	1	21.	South Korea	1
8.	Greece	5	22.	Spain	1
9.	India	8	23.	Turkey	4
10.	Italy	5	24.	United Kingdom	8
11.	Kazakhstan	4	25.	United States	7
12.	Mauritius	1	26.	Ukraine	2
13.	Namibia	2	27.	Vietnam	2
14.	Netherlands	5		Total	110

The results of the co-authorship analysis revealed that authors from seven countries have collaborated with authors from other countries. Figure 5 illustrates the connection between the seven countries, namely the UK, Italy, Brazil, Greece, Australia, the United States, and Turkey. UK has the highest connection with six TLS, which implies that the authors from the country collaborated and co-authored their work with authors from many other countries.

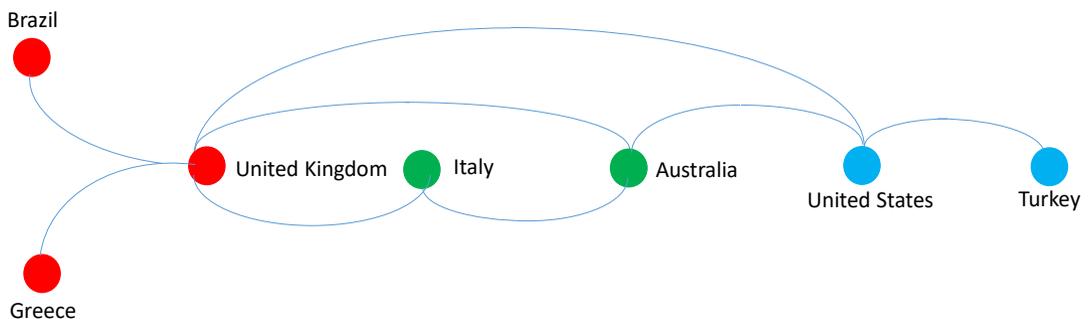


Figure 5: Co-Authorship Analysis by Countries

In addition, the analysis revealed three clusters of collaboration between countries, as shown in Figure 5. The first cluster comprises the UK, Brazil, and Greece. The second cluster encompasses Italy and Australia, while the third cluster comprises Turkey and the United States. The clusters represent the collaboration groups among authors by country.

5.0 Digital Audit Practices in Other Countries

This second part of the findings presents information on the development, status, and initiatives of various countries in relation to their digital audit practices. Although numerous prior studies or publications have been undertaken on digital audit in the public sector, as covered in Section 4, only several publications contain information on digital audit practices in a specific country. Hence, the remainder of this section discusses digital audit practices in specific countries as covered by prior studies. The discussion will first cover the digital audit practices in European countries, followed by Asian countries. Specifically, the discussion will explore how different countries have embraced digitalisation and the specific systems or tools they utilise.

5.1 Digital Audit Practices in European Countries

In line with the EU's full digitalisation of public administration and financial management agenda, the ECA, as the external auditors of EU finances, has established ECALab, intending to transform and enhance audit function using technological advancements (Otia & Bracci, 2022). ECALab is an incubator specially designed to explore and test new digital audit solutions and technologies in a controlled environment before its full-fledged implementation in the public sector (Otia & Bracci, 2022). ECALab plays a crucial role in keeping auditors updated on current technological trends and helping them effectively utilise technology to enhance the audit process (ECA, 2020). As shown in Figure 6, the cycle begins with a continuous technological watch, conducting in-house experiments, learning from other EU institutions, and, lastly, transferring the knowledge to auditors.

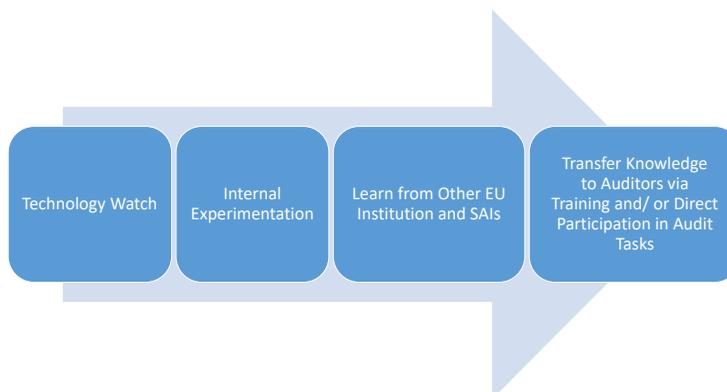


Figure 6: ECALab Helps Auditors to Stay Up-To-Date with Innovation

In addition to ECALab, several other incubators have been developed by European countries and North America for the same purpose. Table 3 provides information on the incubators and their origin, as reported by Otia and Bracci (2022).

Table 3: Digital Audit Incubators in Different Countries

Country (Supreme Audit Institution)	Name of Innovation/ Incubator
European Union (European Court of Auditors)	ECALab
Norway (Office of the Auditor General)	Innovation Lab
The Netherlands (Court of Audit)	Innovation Lab
Belgium	DataLab
The United States (Government Accountability Office)	Innovation Lab
Brazil (Federal Court of Accounts)	coLAB-I

5.1.1 Norway

The Office of the Auditor General of Norway established the Innovation Lab in 2019 to assist them in addressing the impact of technology on the audit community (ECA, 2020). Prior to its establishment, Norway had already introduced the SAF-T in 2014 (Podik et al., 2019). The SAF-T is a standardised reporting format that taxpayers utilise to electronically provide tax authorities with accounting and financial information concerning the status and availability of assets, liabilities, equity, and changes in the taxpayer's financial and economic condition over a specific period (Podik, 2019; Bezverkhyi, 2021; Bezverkhyi & Poddubna, 2023). Norway has made multiple upgrades to the system throughout the implementation phases. One of the new features introduced is the SAF-T Cash Register, designed to export data from cash registers. This file can be generated upon request by the Norwegian tax administration, accountants, or other participants. It also serves as a means to transfer cash register data to accounting systems (Podik et al., 2019).

5.1.2 Ukraine

In 2020, Ukraine took a significant step towards digital audit implementation by introducing its own version of SAF-T. This initiative aligns with the country's agenda to reform the State Finance Management System, highlighting the significance of digital audit as part of broader financial management reforms (Bezverkhyi & Poddubna, 2023).

5.1.3 Russia

In 2015, the Audit Chamber of the Russian Federation initiated an experiment to explore the advantages of digital technologies in auditing (Otia & Bracci, 2022). As part of this initiative, remote audit was introduced by utilising an information analysis system (IAS). The outcomes of this endeavour were remarkable, as the auditors identified 650 procedural violations among state agencies (Otia & Bracci, 2022).

5.1.4 Italy

After the mandatory adoption of Extensible Business Reporting Language (XBRL) for financial reporting by public entities, the Court of Auditors introduced the Local Government Harmonised Monitoring Control System (SMART). The SMART initiative enables the government to collect financial statements from local governments using XBRL (Soverchia & Fradeani, 2018).

5.1.5 Germany

Germany is the first country to develop its own audit file format known as “EBilanz”. The pilot project for EBilanz was introduced in 2011. All taxpayers were required to use the system to generate financial statements in electronic form by 2013 (Kostiantyn & Yulia, 2021).

5.1.6 Poland

Similarly, Poland introduced its own standard tax audit file in 2016 by requiring all large taxpayers to submit a single control file to the authorities. In 2017, the system was made mandatory for small and medium enterprises (Podik et al., 2019).

In summary, the digital audit practices in the public sector of European countries are still in the developmental phase and not yet fully matured. These practices are rather relatively concentrated on the taxation audit. Auditing taxpayers’ tax files submitted in the XBRL platform (online submission) is the primary reason governments implement e-audit (Bezverkhyi & Poddubna, 2023). Table 4 details the specific names of e-audit modules used in various European countries, their year of implementation, structure, and the associated software from the recent publication of Bezverkhyi and Poddubna (2023).

Table 4: e-Audit Implementation in the European Countries

Country	Name	Year of Implementation	Structure (Sections)	Software
Portugal	SAF-T (PT)	<ul style="list-style-type: none"> • 2008 - On a voluntary basis only for large taxpayers • 2010 - As a mandatory measure for all economic entities that keep records in the electronic system 	Four (“Header”, “Main files”, “Journal of accounting entries” and “Primary documents”)	IDEA
Austria	SAF-T (AT)	<ul style="list-style-type: none"> • April 2009 	Six (“Header”, “Main files”, “Journal of accounting entries”, “Inventory Balances”, “Primary Documents”, and “Asset Information”)	ACL
Germany	E-Bilanz	<ul style="list-style-type: none"> • 2011 - Pilot project: E-Bilanz • 2013 - Mandatory for all taxpayers who prepare financial statements in electronic form 	E-Bilanz for Germany - Versions Taxonomy and E-Bilanz Sheet	IDEA
Luxembourg	FAIA (FAIA 2.01 full, FAIA 2.01 v. A and FAIA 2.01 v. B)	<ul style="list-style-type: none"> • 2008 - Adoption of the regulatory act on cooperation between tax authorities • November 2009 - First edition (November 2010 - Implementation) • 2013 - Published FAIA v. 2.01 	Four - Based on OECD SAF-T version 2.0 (FAIA 2.01 full); v. A - Less subdivisions v. B - Only three sections (no “Primary Documents”), fewer subsections	Programme based on SAP ERP
Norway	SAF-T Financial 1.2	<ul style="list-style-type: none"> • 2014 - SAF-T Financial 1.0 • June 2017 - SAF-T Financial 1.2 	Three (“Header”, “Main files”, “Journal of accounting entries”)	ACL, SESAM

Country	Name	Year of Implementation	Structure (Sections)	Software
France	SAF-T FEC	• January 1, 2014 - A unified file format and structure was put into effect	Four different XML schemas	ACL
Sweden	Standard Import Export (SIE) XML	• 2014	Four types: Balance, additional balance, profit, operations, transactions	ACL, SESAM
Lithuania	SAF-T	• 2015	Complies with the SAF-T version 2.0 framework	SESAM (IC ESKORT)
Poland	JPK	<ul style="list-style-type: none"> • 2016 - Only large taxpayers had to submit JPK to the fiscal authorities • January 2017 - The obligation was imposed on small and medium-sized enterprises 	Seven parts (JPK VAT ("Title", "Entities", "Sales", "Tax liabilities", "Purchases", "Tax credit") - Mandatory; JPK KR, JPK WB, JPK MAG, JPK FA, JPK PKPIR and JPK EWP - (Submitted within three days at the request of the supervisory authority)	ACL

Source: Bezverkhyi and Poddubna (2023)

5.2 Digital Audit Practices in Asian Countries

While certain Asian countries, such as Singapore and China, have been proactive in leveraging technologies to enhance the audit function in the public sector, the overall adoption of digital audit practices in the region is lower compared to European countries.

5.2.1 Singapore

Singapore is the only Asian country that has implemented SAF-T. The first version of the system, "IRAS Audit File (IAF) v 1", was published in 2005 (Podik et al., 2019). Since then, Singapore has developed and released four versions of IAF to enhance its tax audit processes.

5.2.2 China

The Department of Electronic Data Audit was created in 2014 to collect, verify, and process electronic data related to audits (Otia & Bracci, 2022). Subsequently, the Golden Audit Project was initiated in 2015 by focusing on big data. China is currently taking the initiative to promote the digitised audit approach and explore more comprehensive analysis (Otia & Bracci, 2022).

6.0 Implications, Limitations, Suggestions for Future Research and Conclusion

The present paper has two objectives. First, a bibliometric analysis of digital audits in the public sector was undertaken. Second, literature on digital audit practices by the governments of various countries was reviewed. The present study reveals a growing trend in publications on digital audit in the public sector authored by researchers from various countries, indicating a

global movement towards digital audit by governments. The finding indicates good prospects for additional research, which may inspire researchers, academicians, and experts from multiple disciplines, including information technology, auditing, and public sector accounting, to undertake comprehensive studies on various aspects of digital audit implementation in the public sector. As none of the countries globally has fully digitalised all its audit work processes, empirical research on critical factors for successful digital audit implementation is crucial to be undertaken. Local researchers interested in learning about digital audit practices in different countries may benefit from collaborating with international experts. Such collaboration can expedite the implementation of digital audit practices in their own country.

The review of digital audit practices of the governments in other countries reveals that a number of European countries, namely Norway, Ukraine, Russia, and Germany, are more advanced in their digital audit practices compared to Asian countries such as China and Singapore. Many of those countries started with digital taxation audits and currently have labs or incubators to experiment with full-fledged digital audit implementation in their respective governments. Overall, the review of literature on other countries' digital audit practices concludes that the adoption of digital audit in the public sector is still in its early stages mainly due to the complex regulatory environment, cultural resistance, and the lack of resources and expertise (Otia & Bracci, 2022). As government data contains sensitive and confidential information, data security and the risk of data loss are concerns, as many government agencies are not fully prepared for disaster recovery plans (Al-Ruithe et al., 2018). Given the challenges, a strategic approach is necessary to ensure successful digital audit implementation. The approach goes beyond adopting various technologies and simply expecting these technologies to help make changes.

As various parties are involved in implementing digital audits by the public sector, each party has a unique role to contribute to ensure a smooth and successful implementation in the near future. At the strategic level, the relevant government authorities or top government management have crucial roles in propagating and publicising the agenda of digital audit transformation in the public sector, which can be achieved through a consistent emphasis on government strategic planning, such as the five-year Malaysia Plan and in public discourses. Furthermore, top management support in terms of sufficient allocation of monetary resources to procure the latest and reliable technology is equally crucial. At the operational level, the relevant government agencies must develop specific information technology (IT) expertise among the staff, such as the knowledge and skills in using audit software and other technological tools. Therefore, organising workshops or sending staff for IT training related to audit is important. Furthermore, establishing an IT or data analytics unit within government agencies involved in audit work may be useful to have close support on digital audit technical matters.

Several limitations exist in the present study. First, the study only considered articles from the Scopus database. Prior studies on digital audit in the public sector from other databases were not included. In order to ensure comprehensive coverage of past literature on digital audit in the public sector, future studies should cover more databases, such as the Web of Science, in searching for the relevant literature and further embark on thematic analysis. Secondly, this study relied on secondary data, employing bibliometric analysis and a literature review to investigate the current status of digital audit practices in other countries. Although the present study's findings are useful, future studies should consider adopting other

methodological approaches, including case studies and interviews with experts from various countries, to obtain richer information on digital audit practices in other countries.

Furthermore, as digital auditing is less common in the public sector, particularly in developing countries, further research is required to assess its current implementation. Future research, particularly in resource-constrained environments, may assess the readiness of developing countries for digital auditing, including financial and human resource considerations. Moreover, future research may also consider conducting a comparative analysis of digital auditing frameworks (technologies, regulations, human resources, and financial resources) implemented in developed countries and their applicability in developing countries. Examining data security and privacy concerns in data sharing, which forms the core of digital auditing, would also be a valuable avenue for future research. Despite the study's limitations, the findings offer valuable information on the current status of digital audit implementation in various countries, which could be vital to other countries planning to embark on digital audit transformation.

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*are papers that are included in the bibliometric study and therefore not necessarily all are cited in the text.

Initiatives Towards Constructing a Definition of a Commercial Public Sector Entity in Malaysia

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Abstract

Purpose: This study explores the possibility of applying the definition of “government business entity” (GBE) to construct the definition of “commercial public sector entity” (CPSE) based on the characteristics of GBE. Comparison was made between the characteristics of GBE in nine countries, namely the United Kingdom, the United States, Canada, Australia, South Africa, New Zealand, Indonesia, Thailand, and Malaysia. This is followed by identification of the issues related to the definitions and characteristics of GBE and the challenges faced by the Accountant General's Department of Malaysia (AGD) in developing the definition of CPSE.

Design/ Methodology/ Approach: This study utilised the content analysis of the documents, such as accounting standards and articles related to commercial public entities. A qualitative approach was employed by conducting interviews with public sector accountants who are directly involved with the accounting standard's implementation in AGD.

Findings: The results recorded similar and different characteristics constituting the definitions of GBE adopted in nine countries. In the application of the GBE definition to construct the definition of CPSE, four main issues were identified: diversity of definition, spectrum of entities, government funding, and rules and regulations of financial reporting. This was

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followed by several other challenges, including the non-reliance solely on the GBE definition, substance over form, purpose of establishment, and jurisdiction of the federal government and existing acts.

Research Limitations/ Implications: It was implied in this study that GBE's definition should be revisited to resolve specific issues before constructing the definition of CPSE.

Practical Implications: It was indicated from the results of CPSE in a Malaysian context that may be developed after considering the issues that may arise due to accounting and financial reporting practises.

Originality/ Value: This study is the first attempt towards constructing a definition for CPSE.

Keywords: GBE, CPSE, definition, spectrum of entity, government funding, rules and regulation of financial reporting, Malaysia.

1.0 Introduction

Malaysia has witnessed a number of public-sector changes. Despite the significant discrepancies between rhetoric and reality particularly in the areas of implementation, the effects of the changes have been insignificant (McCourt & Foon, 2007; Lim, 2009). The level of concern and dissatisfaction expressed regarding service quality and the inefficiency and waste within the government has indicated that these advancements do not fulfil the rising needs and expectations (Agus, Barker, & Kandampully, 2007; Siddique, 2013; Siddique, Xavier, & Mohamed, 2017) of the Malaysian citizens. As a result, numerous appeals were made to meet these needs. To overcome these issues, adapting to new modes of service delivery with better adaptability to the technology, norms, and requirements of the present is crucial (Economic Planning Unit, 2021). These new delivery and service criteria equip the government with an opportunity for transformation, allowing it to be more cost-effective and able to meet the needs and aspirations of the people.

One of the Government Transformation Programme's (GTP) transformations is the development of government agencies into a "more commercial" version (Jabatan Perdana Menteri, 2010), which is in line with the status of governments around the world. This condition has led to the establishment of CPSE as one of the primary agents of change (Xavier, Siddique, & Mohamed, 2016). Considering the numerous possibilities for the production of superior results, a CPSE is recommended. However, the term "commercial" used by public-sector organisations is patently equivocal. In the public sector, this term was defined by Creswell (2020) as a service or product, analysing competition to determine if there is a market, and establishing the operating environment that provides the greatest value in terms of the outcome for the amount of money invested. This definition applies to developing nations such as Malaysia, which has become a more progressive nation as a result of the government's active involvement in business activities (Azhar, 2014), contributing to the emergence of the concept of GBE.

The International Public Sector Accounting Standards Board (IPSASB) has provided the definition of a GBE (IFAC, 2014). However, the IPSASB's definitions were excessively broad, leading to the challenges in determining whether a government department or agency is qualified as a GBE or whether a subsidiary falls under the definition of a GBE. As a consequence, confusion took place in the setting of accounting standards for the entire government agency due to the use of inconsistent accounting standards. This confusion became more critical when GBE and its definition were withdrawn from IPSAS by the IPSASB and replaced GBE with CPSE (IPSASB, 2016). However, the IPSASB placed the responsibility of developing the definition of CPSE on the respective countries without making a definition of CPSE. In this case, each country was granted the authority to determine the application of accounting standards by CPSEs. This condition prompted each country to develop a new definition for CPSE and make an effort to provide more comprehensive definitions for the new term. In Malaysia, this action serves as the foundation of AGD's efforts to develop a CPSE definition in Malaysia.

In line with Malaysian Public Sector Accounting Standards (MPSAS), what is currently accessible and known as CPSE is most likely equivalent to the definition of a GBE. However, the issues surrounding GBE may impact the application of the GBE definition to CPSE. Therefore, these issues were addressed in this study by investigating the definitions of GBE in selected countries. Furthermore, identifying the issues surrounding the definitions of a CPSE is most likely equivalent to the definition of a GBE. Subsequently, the challenges in developing the definition of CPSE were identified. The results of this study would be able to assist AGD in the development of an acceptable definition for CPSEs in Malaysia and the development of a framework that can provide a clear classification of a public sector and a CPSE. The remaining sections of this article present a literature review relevant to this study, followed by research methodology, results of this study, and this study conclusion.

2.0 Literature Review

The New Public Management (NPM), which proposes substantial changes to the structural and operational characteristics of public bureaucracies, is believed to have initiated the concept of commercialisation in the public sector (Siddique, 2014). The NPM seeks to align public sector organisations with corporate management concepts and practises and to transform inefficient and cash-strapped businesses. This outcome is achieved by granting the private sector a more important role in the delivery of government operations and services (Savoie, 2008). Having theoretical roots in public choice theory and managerialism, the NPM is predicated on the fundamental premise that public sector bureaucracy is inherently flawed and can only be addressed through solutions proposed by the private sector (Hughes, 2012). The application of private sector ideals and management methods in the public sector, which includes the delivery of public services through market mechanisms and competitive procedures, is essentially a response to the inadequacy of public bureaucracy (Hughes, 2012). It aims to provide public organisations and their employees with a remarkably business- or consumer-oriented perspective of the market (Diefenbach, 2009).

Since the 1980s, the NPM has been connected with public sector reform and modernisation initiatives in the Organisation for Economic Cooperation and Development (OECD) and developing countries (Mongkol, 2011; Siddique, 2014). After gaining acceptance from Western liberal democracies, the NPM has been a driving force behind the various changes and

beneficial developments in the public sector and global public sector, respectively (Islam, 2015). It also seeks to transform inefficient and increasingly cash-strapped public-sector institutions by building a closer alignment with business ideas and practises and providing the private sector with a more important role in the delivery of governmental tasks and services (Hope, 2001). This outcome can be accomplished through a better association of the public-sector groups with corporate management concepts and practices. Overall, Malaysia commonly leads the efforts of developing countries to enhance public services.

While reform has been an integral part of the Malaysian public sector, it acquired a new prominence through the ratification of the GTP in 2008. One of the reformation initiatives includes commercialising the public sector. Developed into a signature initiative of the Malaysian government (Siddique, 2014), this initiative is considered a model for public sector reform, considering that it is more efficiently credited with the integration of public service delivery and government accountability (Mahbob et al., 2013). GTP is a proposition to reorganise government operations for the improvement in the efficacy and effectiveness of the delivery of public services (Siddique, 2014). Furthermore, GTP is presented as a method for fostering a government structure that is more performance-oriented, accountable, and responsive. It comprises a number of initiatives aiming to make significant and swift changes to the delivery of certain services. Notably, the GTP is a diagnostic and problem-solving approach to the reform of the public sector (Siddique, 2013). Subsequently, the GTP was introduced in 2009 by the former Prime Minister, Najib Tun Razak, which drew significant attention as a paradigm shift for public sector reform.

Commercialism in the public sector, which includes the GBEs, falls under the entities established by the government to conduct commercial activities on its behalf. These entities are also hybrid, possessing the features of a private company and a public organisation. Currently, IPSAS and MPSAS define GBEs as government organisations with separate entities and core activities involving the sale of items to non-government organisations and individuals. Meanwhile, government-owned businesses are entities established by the government to conduct commercial activities on its behalf. GBEs are self-governing organisations that possess the financial and operational capacity to sell commodities to non-governmental groups and individuals. Overall, these sales allow the government to earn revenue and maintain operations. Additionally, several sectors including the main rail operator, national flag carrier, heart surgery centre, public transport operator, and federal land organisation are examples of GBEs, given that the services they offer are essential in this country.

Based on the literature review, diverse definitions of GBE are present across countries based on characteristics of the GBE. To illustrate, the Australian Government's Department of Finance made a comparison between the government's relationship with its GBE and its relationship with a holding company and its subsidiaries (Australian Government Department of Finance, 2013). The characteristics are as follows:

- i. Strong interest in the performance and financial returns of the GBE.
- ii. Reporting and accountability arrangements that facilitate active oversight by the shareholders.

- iii. Action by the shareholder in relation to the strategic direction of its GBEs, which prefers a direction different from the proposed direction.
- iv. Management autonomy that is balanced with regular reporting of performance to shareholders.
- v. Boards that are accountable to shareholders for GBE performance and shareholders accountable to Parliament and the public.

The GBEs are defined by the IPSASB as an entity that possesses the following qualities (IFAC, 2014, p. 7):

- i. An entity with the power to contract in its name.
- ii. Assigns the financial and operational authority to carry on a business.
- iii. Sells goods and services to other entities at a profit or full cost recovery in the normal course of its business.
- iv. Is not reliant on continuing government funding as an ongoing concern (besides the purchases of outputs at arm's length).
- v. Is controlled by a public sector entity.

The IPSASB has explored two major approaches in its policy on public-sector enterprises. In this case, the accounting rules for GBEs were developed. This modification for MPSAS was aligned with IPSAS, which revised IPSAS 1 in April 2016. It was also aligned with IPSASB that proposed the replacement of GBE with CPSE (IPSASB, 2016; IPSASB, 2022). The first approach in developing the accounting rules for a GBE, which defines the characteristics of the public sector institutions for which IPSASs are designed, would not be possible through this technique. Two options are present in this approach: (1a) the use of IPSASB's existing and emerging terminology and; (1b) the use of Government Finance Statistics (GFS) reporting requirements and explanatory advice. Specifically, the former describes the characteristics of public sector enterprises solely through the existing and emerging IPSASB material, while option 1b involves the incorporation of specific words and explanations from the GFS reporting rules into the IPSASB literature.

The second approach in developing the accounting rules for a GBE, involves the modification of the current definition of a GBE in IPSAS 1 to alleviate application concerns. This outcome can be accomplished in two methods: (2a) clarification of the current definition of a GBE, and/ or; (2b) limitations imposed on the current definition of a GBE. Options 2a and 2b are not required to be mutually exclusive. Option 2a may be used in combination with Option 2b to clarify and limit the current definition of a GBE (IFAC, 2014). However, several challenges are raised by both methods, prompting the IPSASB to cease the discussion on GBE and allow the countries across the globe to hold debate, establish the meaning of GBE based on their respective views, and subsequently define their respective term, CPSE.

The aforementioned characteristics were based on the old definition of GBE, although it was subsequently replaced by IPSAS. Thus, IPSAS solely used the term “public sector entities.” Under IPSAS, a public sector entity is described as an entity that meets the following criteria:

- i. Responsible for the delivery of services to benefit the public and/ or redistribute income and wealth.
- ii. Directly or indirectly finances its activities primarily through taxes and/ or transfers from other levels of government, social contributions, debt, or fees.
- iii. Does not have the primary objective of making profits.

In conclusion, a review of the literature demonstrates several definitions of GBE describing its characteristics across countries. These characteristics may be used to define CPSE, considering that GBE is a government entity that delivers commercial services. Nevertheless, further research should be conducted on whether all of these characteristics can be used or reused in a CPSE or if further enhancements are required.

3.0 Research Methodology

3.1 Sample and Participants

This study compared between the definitions of a GBE used by standard-setters in nine different countries, namely the United Kingdom (UK) (IFAC, 2014), the United States (US) (Kenton, 2020), Canada (CPA British Columbia, 2016), Australia (Australian Government, Department of Finance, 2013), South Africa (Accountancy South Africa, 2014), New Zealand (Parliamentary Counsel Office New Zealand, 2018), Indonesia (Situmorang & Putri, 2023), Thailand (Office of the Public Development Commission, 1994), and Malaysia (Accounting Sense, 2021). The selection of these countries was attributed to their direct relevance to this study. These countries were also frequently used as references in earlier studies on GBE. Specifically, Malaysia was selected due to the improvement of GBE into CPSE in line with the improvements in MPSASs 2023 (AGD, 2023).

This study also interviewed three accountants from AGD to gain an understanding of the issues surrounding GBE and the challenges in defining CPSE. To be specific, three accountants from the Accrual Accounting Implementation Team (PPPA) and Accounting Development and Management Division (BPPP) were selected due to their direct involvement in the setting of accounting policies. Thus, they possessed vast knowledge and experience in this area. Following that, three accountants were labelled as Accountant A, Accountant B, and Accountant C.

3.2 Research Instrument and Data Collection

Two methods were employed to accomplish its objectives. This study started with a content analysis of articles and working papers examining commercial public entities in various nations. It was determined whether the articles presented a definition of commercial public entities. This was followed by semi-structured interviews with three representatives from AGD to gain an understanding of the scenario of GBE and the importance of CPSE. This study also examined the standards pertaining to a GBE in nine nations to compile a protocol for defining the

common definition of a CPSE. Moreover, through the use of various database search programmes such as Google Scholar, EBSCOHOST, and the websites of institutions related to this study, a list of all available articles on GBE from various research literature and countries' references are illustrated in Table 1.

Table 1: Document for Content Analysis

No.	Document
1.	Accountant General's Department of Malaysia (2023). Improvements to MPSASs 2023.
2.	Accountant General's Department of Malaysia (2013). MPSAS 1: Presentation of Financial Statements.
3.	Accountant General's Department of Malaysia (2013). MPSAS 24: Presentation of Budget Information in Financial Statements.
4.	United States Government Accountability Office (1995). Government Corporations: Profiles of Existing Government Corporations.
5.	International Federation of Accountants (IFAC). (2014). The Applicability of IPSASs to Government Business Enterprises and Other Public Sector Entities, Consultation Paper.
6.	International Public Sector Accounting Standards Board (IPSASB). (2016). Applicability of IPSASs.
7.	Accounting Sense (2021), Accounting 101: Financial Reporting Frameworks in Malaysia.
8.	Accountancy South Africa (2014), Public sector: Government Business Enterprises.
9.	CPA British Columbia (2016), Government Business Enterprises.
10.	Parliamentary Counsel Office New Zealand (2018), State Owned Enterprises Act 1986.
11.	Australian Government, Department of Finance (2013), Government Business Enterprises.
12.	Accountancy South Africa (2014), Public Sector: Government Business Enterprises.
13.	Situmorang and Putri (2023), Entities in Indonesia: A General Overview of Business Entities in Indonesia: Vol. 1: Legal Business Entities.

A qualitative approach involving semi-structured interviews was employed in this study to gain understanding of the issues surrounding GBE and CPSE. Accordingly, this study collected participants' subjective views and information on the research topic. After the data collection was completed, the data was recorded and transcribed. Following that, the transcription results were organised and categorised based on the main themes and coded according to Miles, Huberman, and Saldana (2014). The category system gained from the classification process was used to structure and direct the information data evaluation procedure.

The application of ATLAS.ti and Excel used for data analysis in the code manager is presented in Figure 1. Each opinion statement from the respondents was prepared in Microsoft Word and transmitted to ATLAS.ti for analysis based on codes. The coding procedure was based on the identified characteristics of a GBE. Subsequently, four major themes were derived from the coding trend.

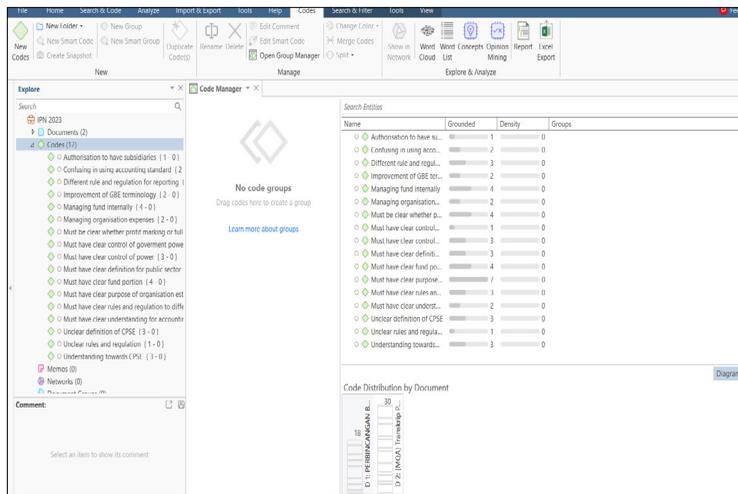


Figure 1: Example of ATLAS.ti coding process

4.0 Discussion of Findings

4.1 Comparative Content Analysis for GBE

This study aims to evaluate the definitions of GBE to determine the characteristics suitable to the definition of CPSE. In this case, the results could be applied to develop a standardised definition of CPSE in Malaysia. The evaluation was conducted on the articles and working papers pertaining to GBEs, including the working papers related to GBE to determine their applicability to this study. The study on the publications indicated the importance of recognising that most of the articles and working papers used the term GBE as a representation of a commercial organisation in the public sector. In some countries, the GBE is known as a state-owned enterprise (SOE).

A checklist was prepared to identify all characteristics presented by the standard setters in nine countries, namely, the UK, US, Canada, Australia, New Zealand, South Africa, Indonesia, Thailand, and Malaysia. Based on Table 2 that illustrates the definitions of GBE based on the content analysis, it was found that Malaysia adopted the definition of GBE provided by IPSAS. This adoption was attributed to the agreement between the Government of Malaysia and IFAC on February 12, 2013. Furthermore, a comparative analysis was conducted to ascertain the characteristics shared by the nine nations. The results of the investigation are presented in Table 2. One of the defining characteristics of a GBE in the UK, Australia, Indonesia, Thailand, and Malaysia was that it should be a government-controlled entity. Although New Zealand, South Africa, Canada, and the US did not explicitly state that a GBE must be under government control, Table 3 indicates that the entity must be associated with the government. Therefore, it was suggested that a CPSE should also be an entity associated with the government.

As seen in Table 3, all countries except Thailand highlighted that a GBE has the authority to run its business and contract or generate profit related to selling goods and services to external parties besides the government. Thus, it is indicated that GBE often sells goods and

services to individuals and organisations outside of the government that report the entity as its principal activity. In this case, the GBE is able to sustain its performance and address all its liabilities. Furthermore, the companies primarily aim to partake in commercial activities within the private sector. As a result, GBEs act as public entities involved in private sector activities to promote the public's continuous provision of essential services. For instance, the government may take control of essential services to prevent negative consequences that may arise if the control is not applied.

Table 2: Summary of Characteristics of a GBE

Country	Characteristics	Reference
United Kingdom	<ul style="list-style-type: none"> • An entity with the power to contract in its own name • Has been assigned the financial and operational authority to continue a business • Sells goods and services to other entities at a profit or full cost recovery in the normal course of business • Is not reliant on continuing government funding to be a going concern (other than purchases of outputs at arm's length) • Controlled by a public sector entity 	IFAC (2014)
United States	<ul style="list-style-type: none"> • Predominantly of a business nature • Produces revenue and is potentially self-sustaining • Involves many business-type transactions with the public • Requires higher flexibility than the customary type of appropriations budget ordinarily permits • There is no uniform definition nor standardised criteria for establishing Government Owned Corporations 	Kenton (2020)
Canada	<ul style="list-style-type: none"> • A separate entity with the power to contract in its own name and can sue and be sued • A separate entity that controls the financial and operational authority to run a business • Sells goods and services to individuals and organisations outside of the government reporting entity as its principal activity • In the normal course of its operations, it is able to maintain its operations and meet its liabilities from revenues received from sources outside of the government reporting entity 	CPA British Columbia (2016)
Australia	<ul style="list-style-type: none"> • Its primary purpose is in commercial activities in the private sector, e.g., charging of goods and services (not necessarily to the final customers) • Is controlled by the government • Has a separate legal existence from the government • Must be an actual or potential competitor either in the private or public sector • Managers of the activity have a degree of independence in relation to the production or supply of the good or service and the price designated for it • The business is significant 	Australian Government, Department of Finance (2013)
New Zealand	<ul style="list-style-type: none"> • An entity set up to perform commercial functions • An entity that generates profit and efficient as comparable businesses • Subject to State Owned Enterprises Act 1986 and Companies Act 1993 	Parliamentary Counsel Office New Zealand (2018)

Country	Characteristics	Reference
South Africa	<ul style="list-style-type: none"> • Is an entity that generates profit and is not dependent on government funding for its operations • Customers are not limited to other public sector entities • Users of GBE financial statements are not similar to those of other public sector entities • No complexities arise in the consolidation of GBEs at national and provincial levels, including the skill and capacity required to deal with different reporting frameworks 	Accountancy South Africa (2014)
Indonesia	<ul style="list-style-type: none"> • A business entity where the Indonesian government is partly or wholly involved in conducting commercial activities • Controlled by government 	Controlled by government
Thailand	<ul style="list-style-type: none"> • Exists as a purpose-established organisation • Controlled by government • Limited companies 	Office of the Public Development Commission (2008)
Malaysia	<ul style="list-style-type: none"> • Is an entity with the power to contract in its own name has been assigned the financial and operational authority to run a business • Sells goods and services to other entities at a profit or full cost recovery in the normal course of business • Is not reliant on continuing government funding as a going concern (other than purchases of outputs at arm's length) • Is controlled by a public sector entity 	Accounting Sense (2021) AGD (2023)

Table 3: Comparative Analysis of Characteristics of a GBE

Characteristics	UK	US	Canada	Australia	New Zealand	South Africa	Indonesia	Thailand	Malaysia
Government-controlled	√			√			√	√	√
Having the authority to carry on own business/ contract/generate profit	√	√	√	√	√	√	√		√
Has been assigned the financial and operational authority	√		√						√
Self-funded and not dependent on government fund	√	√	√			√			√
Subject to specific laws					√				
A separate legal entity from government/ limited companies				√				√	
Sell goods and services not only to the government	√		√	√		√			√

Another common attribute among most of the countries is that the GBEs are self-funded, indicating their less dependency on government funding. In fact, it is known that the GBE in the US should have a separate legal existence from the government. On the other hand, the UK, Canada, and Malaysia demonstrate GBE as the GBE that has been assigned financial and operating authority. In this case, the GBE is also controlled by the government despite having the authority to manage its financial and operating activities independently.

4.2 Issues in Constructing a Definition of CPSE

To develop a further understanding in construction the definition of CPSE, interviews were conducted with three accountants in AGD. As a result, it was found that the issues to be considered could be classified into four main categories: diversity of definition, spectrum of entities, government funding, and rules and regulations of financial reporting.

4.2.1 Diversity of Definition

Based on a content analysis, the IPSASB's feedback exhibited diversity in the application of the GBE's definition in several jurisdictions. This study finds a wide variety of entities are currently referred to as GBEs (or equivalents), some of which do not meet all of the criteria in the IPSASB's definitions. Furthermore, the relevant issues were highlighted based on their definition in IPSAS 1 e.g., the definition of a GBE requires the entity to have the authority to enter into contracts in its respective name. While this requirement aims to demonstrate an entity's autonomy, meeting this criterion is challenging in some jurisdictions where a government minister is legally required to sign all contracts with public sector entities.

The definition of GBEs requires that the entity has been assigned the financial and operational authority to run a business. While all GBEs have some financial and operating authority, variations are present in autonomy and governance based on the arrangements in each jurisdiction. Others may have more autonomy while continuously operating under strict financial and performance restrictions that are imposed upon and regularly reviewed by the government. In situations where a government takes over a business during a financial difficulty, it is possible for the government to set objectives for the entity and establish reporting lines. Other GBEs, such as utilities, may be subject to the decisions of regulators appointed by the government to independently consider issues, such as service standards and pricing. Therefore, the public sector often determines its targeted outcomes for each entity through legislation or regulations with a set of governance arrangements distinguished from those in the private sector. Provided the IPSASB maintains the definition of GBEs, it may be worthwhile to develop guidance on the financial and operational authority imposed upon to run a business.

Addressing numerous issues associated with GBE, the IPSASB made the decision to end any future debate on this topic and remove the definition of GBE. As a result, the IPSASB provided the countries with the authority to determine the factors constituting a GBE and its definition. Subsequently, countries presented a new terminology for GBE and attempted to offer more detailed descriptions of the newly introduced word. However, this action caused an issue specifically after the withdrawal of the use of the GBE definition by IPSAS, the question defining a CPSE, and the methods of defining CPSE remained unfilled and unresolved. This condition could result in a lack of uniformity in the application of accounting standards across agencies in the Malaysian government. Accordingly, Accountant A elaborated:

“We want to develop a definition of CPSE, replacing the definition of GBE, which was withdrawn. This is because many government agencies claim that they are not 100 per cent public sector and that the application of MPSAS to them is not appropriate due to their establishment under the Companies Act. Yes. We agreed and did not challenge the establishment under the Act and *Suruhanjaya Syarikat Malaysia* (SSM). However, we also need to consider other things to classify a government, whether it is under the CPSE or the public sector. We want to make it clear through the definition of CPSE. With that, it is easy for us to explain and decide the appropriate accounting standards for a government agency, whether it is necessary to use MPSAS or not.” [translated]

Nevertheless, an understanding of the history behind the importance of constructing the CPSE definition is crucial. In this case, Accountant B presented the following statement:

“Initially, the IPSASB defined GBE in IPSAS 1 and excluded the application of IPSAS accounting standards to those entities. There are five characteristics of GBE. If the entities meet the definition of GBE, then they do not need to use IPSAS, even though they are actually public sector entities or subsidiaries of public sector entities. Instead, the entity will use standards other than IPSAS, which is IFRS in the global context or, in the context of Malaysia, MFRS or MPERS. We follow this approach for Malaysian GBE. Then, the issue arose when we updated MPSAS in December last year. It was updated based on the updated IPSAS standards, where IPSASB has improved the applicability of IPSAS standards. IPSAS has changed the approach where the definition of GBE was withdrawn and provided a new definition for the public sector. It means that if the entities meet the definition of “public sector, then they need to use IPSAS, or in our case, MPSAS. It changes from a negative approach (to exclude the applicability of IPSAS) to a positive approach. Instead of identifying entities that do not need to apply IPSAS (GBE), identify entities that do need to apply IPSAS (public sector entities). However, this approach has caused a new issue to arise: what about entities that are not included or do not meet the definition of the public sector? What accounting standards are suitable for them? To overcome this issue, IPSASB proposed a new terminology for entities, which is CPSE, and left it to the respective countries to define CPSE. This CPSE should replace GBE and does not need to use IPSAS or MPSAS. However, as mentioned, IPSASB empowers respective jurisdictions to define what CPSE is, and here we are, needing to define CPSE for the Malaysian context.” [translated]

Considering the diversity of GBE definitions, this study finds that the definitions of a GBE is also expected to influence the development of the definition of CPSE. Therefore, it is believed that this study may be able to assist AGD in identifying and evaluating a suitable definition for CPSE, which subsequently allows AGD to impose the adoption of MPSAS. As indicated in the following statement by Accountant A, the definition of CPSE is crucial:

“We really want a clear definition of a CPSE for future use because many government agencies are asking for an exemption from using MPSAS.

Without the definition, it is quite difficult for us to grant an exemption because, as a statutory body, they need to follow various accounting rules and systems. For example, a statutory body needs to use SAGA¹ in recording financial data, and one of SAGA's requirements is to use MPSAS.” [translated]

Offering his thoughts and perspectives, Accountant B stated that the new MPSAS will apply to the definition of the factors constituting a public sector firm. On the other hand, the Malaysian Accounting Standard Board (MASB) and the Malaysian Institute of Accountants (MIA) have proven that there is no established definition of the private sector. Accordingly, a recent study demonstrated that besides the governmental and private sectors, a “third sector” is also present (Perai, 2021). This sector is commonly known as civil society, the social economy, or the voluntary, non-profit, and philanthropic sectors (Salamon, Sokolowski, & Haddock, 2017). It consists of organisations that do not necessarily fall under the public or private sectors. Accountant B added the following statements:

“I remember reading an article by a university researcher who identified a third sector of business entities in addition to the public and private sectors. So, according to the article, we should have three sectors, namely the public sector, the private sector, and the third sector. At the same time, we need a uniform definition for these three sectors in all accounting standards: MPSAS, MFRS, and MPERS, and it needs to be agreed upon with MASB and MIA. With a clear definition in the respective accounting standard, confusion can be avoided, and the application of accounting standards for each sector will be easier and clearer.” [translated].

It was found that in adopting some of the characteristics of a GBE into CPSE, it is important for AGD to improve the GBE terminology to ease the application of the accounting standards to the agencies. Accountant B stated his opinion:

“Actually, this issue arose when we update the MPSAS. We update the MPSAS, or we publish this one document, an improvement to MPSAS 2023. We published it in December of last year. In this document, we update based on IPSAS. IPSAS has improved and has the applicability of IPSAS. If an entity excludes the application of IPSAS to GBE, as defined in IPSAS 1 or MPSAS 1, then the entity is correct since the entity has five characteristics of GBE. So, if an entity meets the definition of GBE, then the entity does not need to use MPSAS, even if it is in the public sector. Okay, but instead the entity uses a standard other than IPSAS, which can be IFRS in the global context or, in the context of Malaysia, MFRS or MPERS. When we update this preface, IPSAS has changed the approach instead of excluding the use of MPSAS to GBE; the entity changes the approach in positive ways; the entity defines instead what

¹SAGA refers to the Standard Accounting System for Government Agencies. SAGA is either a customised accounting and financial application system or commercial off-the-shelf (COTS), as well as a support system related to financial data integrated with it. The application system needs to comply with the accounting and financial systems design approved by the AGD and SAGA Compliance Criteria (<https://www.anm.gov.my/en/faqs/faq-saga>).

the public sector is. So, if the entity meets the definition of public sector, then it uses IPSAS or MPSAS. Instead of using a negative excluding approach, the entity uses a positive including approach, including the public sector.”

Accountant A also presented her opinion, which is as follows:

“IPSAS withdraws the definition of GBE, introduces the concept of CPSE without a detailed explanation, and leaves the discretion of the jurisdiction. This creates a problem. IPSAS only defines public-sector entities.” [translated]

Provided the definition of CPSE also considers the existing legislation, determining the standards that need to be used would be an easier process, as indicated by Accountant B’s statement as follows:

“Actually, we encourage the public sector to utilise MPSAS as they have a specific reporting framework, such as SAGA, for the preparation of financial statements. And, we anticipate that the new definition of CPSE will incorporate the existing reporting framework so that we can clearly distinguish the legal and reporting framework relevance of each government agency.” [translated]

It can be concluded that in terms of the numerous issues associated with GBE, the IPSASB indicates that further discussion on this topic should be avoided, while the concept of GBE should be overlooked. Therefore, the IPSASB grants countries the authority to determine the factors constituting a GBE and how it should be defined. Following that, the term “CPSE” was coined, making it necessary for additional research to arrive at a more precise definition of CPSE. Moreover, the AGD should have a more precise definition of CPSE in line with the findings in this study. The CPSE definition aims to serve as a definitive guide for the selection and establishment of accounting standards to be employed by an organisation. A reasonable definition of CPSE would assist in determining the applicable accounting standards. This case would apply to MPSAS if it is a public sector entity and MFRS if it is a CPSE.

4.2.2 Spectrum of Entity

Based on the content analysis, it was found that IPSASB was classified into three types of government business entities, offering a certain extent of understanding of the types of government business entities and the concept of commercial in public entities. The understanding of these three types of government business could be perceived on a spectrum. At one end of the spectrum, the entities that are clearly profit-oriented trading enterprises are present, such as the utilities that aim to make a commercial return and pay regular dividends to shareholders. These entities would fit the current definition of a GBE and possess characteristics similar to those of profit-oriented entities for which the IASB develops and maintains IFRS. Meanwhile, controlled entities that provide public services are present at the other end of the spectrum to achieve outcomes that enhance or maintain the well-being of citizens. These entities are completely dependent on government funding. These entities are not profit-oriented nor seeking to make a commercial return or pay dividends. Moreover, they would not meet the current definition of a GBE due to their reliance on continuing government funding as a going concern. Given that it is not possible for them to meet the criterion of a full cost recovery objective, these entities could not be classified as GBE. However, they are

present in the middle of the spectrum, which may lead to difficulty in categorising them as either profit-driven or service-driven. Additionally, these entities may fall under any part of the spectrum. Many types of controlled entities are more challenging to classify as either profit-oriented or service-oriented.

The definition of GBEs requires the entity to sell goods and services to other entities at a profit or full cost recovery in the normal course of business. Having a full cost recovery objective is for reflecting a commercial focus. In other jurisdictions, public sector entities may not have the authority to enter contracts, considering that they do not represent the definition of a GBE despite their overtly commercial aims and consistent record of meeting profit targets. A question has been raised on whether an entity that meets the definition of a GBE to be excluded from classification as a GBE due to a legal requirement for all contracts to be signed by a government minister. While other organisations contribute a sizeable income by selling their services at competitive rates (e.g., conducting research), they are unable to fully recoup their investment expenditures annually or in several years. Besides, although several organisations may aim to recover all of their costs, they may also receive financial aid from the government to compensate for any gaps. For example, there are businesses that offer products and services without depending on government financing; nevertheless, they have a financial goal of complete cost recovery rather than profit generation.

Other companies make significant income by delivering market-priced services such as research; however, they lack the fully recovering expenditures annually or in certain years. While some organisations may have a complete cost recovery goal, they may acquire governmental funds to offset any deficit. Furthermore, several organisations earn profit that may be granted as a dividend or maintained for reinvestment, while some other companies obtain government support from time to time upon experiencing annual loss or requiring more funds for investment. In general, despite being profit-oriented, the entities only have other public sector entities as their customers, which indicates that the scope of generating revenue is confined to public entities. In line with this, Accountant B presented an opinion:

“In developing a definition of CPSE, we must also consider two distinct categories of companies. The first is the company established under the Government Investment Companies Division (GIC). This form of company, such as Syarikat Prasarana, was incorporated under the Companies Act but did not make a profit. Due to the government's obligation to provide public transport, the company continues to operate even though it does not make a profit. Secondly, a company limited by guarantee (CLBG) is also incorporated under the Companies Act, some of which are regulated by the Securities Commission. Their businesses are both for-profit and not-for-profit. Legally, GIC and CLBG companies are required to use the MASB standard as they are incorporated under the Companies Act, but in substance, they are not-for-profit organisations or must continue to operate even though they do not make a profit. So, this perspective is also an essential element to consider in the process of developing the definition of CPSE.” [translated]

Accountant C also expressed her opinion, which is as follows:

“The public sector definition has now taken the place of the previous definition for GBE. Government entities that do not meet the public sector definition can be classified as CPSEs. The problem now is that we do not have a definition for CPSE, which makes the application of accounting standards more open and subjective. As mentioned earlier, there are entities incorporated under the SSM and Bank Negara legislation (which must apply MASB accounting standards), but the nature and purpose of their incorporation are more geared towards the public sector (which must apply MPSAS).” [translated]

4.2.3 Government Funding

Based on the review of the literature, it is generally known that all entities in the public sector are dependent on government funding to operate their businesses. For this reason, there is no necessity in separating the agencies in the public sector. This condition has led to numerous arguments that GBEs should apply the same reporting framework as other public sector entities. However, IPSASB emphasises that entities that are clearly profit-oriented trading enterprises, such as enterprises that aim to make a commercial return and pay out regular dividends to shareholders, should be considered commercial public entities. Several questions have been raised during the interviews: is it possible for the entity to generate profit and pay dividends while still receiving government funding? To what extent do we allow the amount of government spending to determine whether the entity can be regarded as a commercial public entity?

It is required in the definition of GBEs that the entity is not reliant on “continuing government funding” as an ongoing concern that excludes the purchases of outputs at arm’s length. The IPSASB has identified a considerable variation in the interpretation of “continuing government funding”, which indicates an inconsistent application of this criterion across jurisdictions. In several jurisdictions, governments provide concessionary loans to entities and/ or guarantees to resource providers, allowing a controlled entity to borrow funds for investment or obtain working capital. Other forms of government funding include loans or equity injections for initial funding and periodic loans for the purchase of assets and/ or to increase the entity’s scale of activity. Entities may be reliant on continuous funding of this nature without receiving direct operational subsidies. However, based on the content analysis, many of the agencies in the federal government that generate revenue rely on government funding to operate their businesses. As a result, there are challenges in identifying whether these agencies can be classified as GBE. This situation necessitates the development of a threshold between revenue generation and government funding.

Notably, one criterion that may require consideration is substance over form, leading to the necessity of highlighting the substance of the establishment rather than its legal form. For example, while a company is established under the Companies Act 2016, it is not targeted for profit (substance). Therefore, it is necessary to identify the specific accounting standards to be used, as per Accountant B’s statement:

“I think we must also consider the substance of the establishment of an entity. If it is a social obligation, I do not think the MASB standards are the right ones, even if it is a private company.” [translated]

4.2.4 Rules and Regulations for Financial Reporting

One of the main issues in the importance of properly defining GBEs is the importance of identifying the appropriate reporting frameworks for GBEs. The term “GBE” has been defined in IPSAS 1, Presentation of Financial Statements. The scope section of each IPSAS specifically excludes GBEs while including a reference to the Preface to International Public Sector Accounting Standards (Preface), which states that GBEs apply the International Financial Reporting Standards (IFRSs) that have been issued by the International Accounting Standards Board (IASB). Currently, all IPSASs include the statement that “this standard applies to all public sector entities other than GBEs”. Each IPSAS also highlights that “The Preface to International Public Sector Accounting Standards issued by the IPSASB explains that GBEs apply IFRSs issued by the IASB”. The studies demonstrated a wide range of entities described as GBEs. It is clear that some of these entities do not fulfil the IPSASB definition of a GBE. In other cases, different interpretations are expressed regarding the components of the GBE definition. In South Africa, concerns are shown regarding the complexities that arise in the consolidation of GBEs at the national and provincial levels, which include the skill and capacity required to deal with different reporting frameworks. In line with IPSAS, all controlled entities are consolidated on a line-by-line basis with accounting policies conforming to IPSAS. Notably, GBEs may have a significant impact on financial performance and financial position at the whole-of-government level. Provided the accounting policies of GBEs differ significantly from IPSASs, the complexity of the consolidation process would increase.

The removal of the definition of GBE indicates the concept of CPSE albeit without a more specific explanation. This aspect depends on the jurisdiction, which results in a disparate and uneven application of accounting rules despite their similar nature. For example, two government-related organisations, namely MARA and FELDA, possess the same characteristics and respective subsidiaries that are in line with MFRS. While MARA adopts MPSAS, FELDA adopts MFRS. Accordingly, Accountant A presented their opinion:

“IPSASB has withdrawn the definition of GBE and replaced it with the definition of the public sector. IPSASB also introduced the concept of CPSE but did not include a definition and left it to the respective jurisdictions to provide the definition of CPSE and determine the application of appropriate accounting standards. This has given us problems. So, that's why we need a comprehensive study that takes into account all the factors and perspectives that have been discussed in order to provide a solid definition of CPSE.” [translated]

Concerns have also been raised regarding the importance of a GBE definition considering the similarity between the users of GBE financial statements and those of other public sector entities. AGD requires a government agency that aims to be established as a government through MPSAS (substance). However, the definition of CPSE should also consider the existing legislation, as reflected in the following statement by Accountant C:

“The problem is how we decide who needs to use MPSAS. If possible, we want to ensure that government agencies and related entities use MPSAS. With the GBE, as before, setting accounting standards is easier. But now, GBE has been removed. As a result, in our situation, it can be challenging to determine the accounting standards that government agencies should adhere to. For example, if the entity is a half-statutory body, by nature, it looks like it falls under the federal government and should apply to MPSAS. But if we go back to the legal framework in which it was established (e.g., under Bank Negara or the SSM), the entity should apply the standards issued by MASB. So, it is not clear.” [translated]

In AGD, efforts have been made to identify the source of the authority for the application of accounting standards, such as the Companies Act 2016. The source of the application of accounting standards is found through the observation of relevant acts including the Act 240 Statutory Bodies (Accounts and Annual Reports) Act 1980. However, several agencies do not enact specific acts, such as local authorities. In line with this, Accountant B presented the following statement:

“If we look at the MASB's position, they propose to look at the matter from a legal point of view. If a company is incorporated under the Companies Act, then that company has no option but to apply the MASB's accounting standards. However, our argument is that we must also consider the purpose and objective of the incorporation. It could have been incorporated to play by the rules of the public sector, such as providing services to the public. This is where the confusion arises.” [translated]

Accountant B continued with the following explanations:

“In addition, there are several laws with which Federal statutory bodies must comply. First, Act 240² (Statutory Bodies (Accounts and Annual Reports) Act 1980). The Act sets out the reporting requirements for federal statutory bodies. Second, Treasury Circular (PA 3.2), issued by the Ministry of Finance (MOF). The circular (PA 3.2) describes the accounting principles and standards to be used by federal statutory bodies. However, not all federal statutory bodies are subject to this law, as some statutory bodies are established under certain laws or by certain jurisdictions, such as *Pihak Berkuasa Tempatan* (PBT). Act 240 does not apply to the state PBTs, which are all under the control of their respective state governments. This issue also needs to be considered in forming the definition of CPSE.” [translated]

²Under Act 240:

1. Every statutory body shall keep or cause to be kept proper accounts and other records in respect of its operations in accordance with generally accepted accounting principles (GAAP).
2. The minister may prescribe guidelines in respect of generally accepted accounting principles, accounting policies, and other matters of an accounting or financial nature related to the accounts of a statutory body.

The source of authority for the federal government and the state government is the Financial Procedure Act, which has not been amended. Besides, the PBT source of authority remains ambiguous under the Statutory Body Act 240. Accordingly, Accountant B stated his opinion:

“We also have other laws that need to be considered, such as the Financial Procedure Act. The Financial Procedures Act 1957 (revised 1972) governs the control and management of Malaysia's public finances and describes financial and accounting procedures. However, it has not yet been amended to include accrual accounting. In addition, as mentioned earlier, we have Act 240, which does not apply to the state PBT. Thus, the application of accounting standards for state PBT is still unclear.” [translated]

Another explanation was expressed by Accountant B, which is as follows:

“The application of accounting standards for some government entities is also inconsistent, as the federal government does not have clear legislation on this matter. For example, Majlis Agama Islam (under Majlis Raja-Raja). It has been agreed with the Majlis Agama Islam that it may use Islamic accounting standards and not MPSAS. Another example is the FELDA. FELDA has subsidiaries that prepare their financial statements in accordance with MASB accounting standards as they are incorporated under the Companies Act. For this reason, FELDA has applied to use MASB accounting standards to facilitate the preparation of its consolidated financial statements. We understand that FELDA is a government agency that has to apply the MPSAS. Look at MARA, whose corporate structure is similar to that of FELDA, with subsidiaries of MARA preparing their financial statements using MFRS. And MARA prepares its financial statements using MPSAS. For the purpose of the consolidated financial statements, the financial statements of the subsidiaries (prepared using MFRS) are restated in accordance with the requirements of MPSAS. So we have diversity in the use of accounting standards by government agencies and hope that things can be clarified with the definition of CPSE.” [translated]

Overall, based on the interviews with the accountants in this study, four main issues were identified in the effort to construct the definition of a CPSE and the framework. These issues included the diversity of definitions, spectrum of entities, government funding, and rules and regulations for financial reporting. Specifically, the following points should be taken into consideration in the construction of the CPSE definition:

- i. The construction of the definition of a CPSE should not solely rely on the definition of GBE.
- ii. The objective substance of the establishment should be considered besides the legal status of an entity.
- iii. The entity should still be receiving funds from the government.
- iv. An entity established under MOF (Inc.) companies (MKD) is still required to continue operations despite the losses, such as infrastructure.

- v. An entity established as a company is limited by the guarantee established as a not-for-profit.
- vi. An entity is partly for the purpose of profit and the purpose of public service provision.
- vii. An entity prepares financial statements using SAGA.
- viii. An entity has subsidiaries that use MFRS or MPERS, such as MARA and FELDA.
- ix. Stakeholders such as MIA and MASB should be considered.
- x. The jurisdiction of the federal government and existing acts (such as Act 240, Treasury Circular, and the Financial Procedures Act 1957) are limited, outdated, and do not include some government bodies such as PBT.

5.0 Conclusion

The study determined whether it is possible to build the concept of CPSE using the definition of GBE. Analysis and comparison were made between the definitions of GBE found in nine different countries. This was followed by interviews conducted with three AGD accountants to identify the issues related to GBE and CPSE. Notably, this study is important due to the objectives of financial reporting and the primary users of financial reports, which are distinguished from the entities that primarily have a service delivery objective and the entities that are primarily profit-oriented. The inappropriate classification of a public sector entity may lead to the application of financial reporting standards that may include unsuitable requirements. This condition could impair the quality of the financial information for users, which subsequently undermines the ability of the information to meet the objectives of financial reporting.

Based on the findings of the content analysis, this study highlights the importance of appropriate classification of a commercial public sector entity considering the proper use of the standards of either MPSAS or MFRS. This aspect is in line with the IFRS framework, which states that the financial statements provide financial information about the reporting entity that is useful to the existing and potential investors, lenders, and other creditors in their decision-making about providing resources to the entity. Furthermore, it was also indicated that the nine various countries' official definitions of GBE include elements that are both similar and distinct from one another. This study also demonstrated four primary issues arising in the attempt to apply the definition of GBE to the construction of the definition of a CPSE. These issues emerge from the diversity of definitions, the spectrum of entities, government funding, and the rules and regulations of financial reporting. Arguably, the classification of a GBE elaborates the concept of commercial in the entities that can be iterated and considered for establishing an appropriate definition for a CPSE in Malaysia. Notably, this definition is important to understand the potential of CPSEs under both financial and non-financial performance conditions. The findings in this study have also contributed several insights into the possibility of adopting the characteristics of GBE into CPSE. This is followed by a certain degree of understanding of the issues relating to GBE and the importance of resolving them before constructing the CPSE definition in Malaysia. Solving the issues highlighted in this study would facilitate the construction of a more definitive definition of CPSE in Malaysia.

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A Review on Risk-Based Audit Approach: Malaysian Public Sector's Perspective

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Abstract

Purpose: This study aims to understand the Risk-Based Audit (RBA) approach, the advantages of RBA, RBA in the Malaysian public sector, and the issues and challenges in implementing RBA in the Malaysian public sector.

Design/ Methodology/ Approach: A library search and evaluation of earlier literature reviews were conducted on the topic of RBA and internal auditing that covers online and print sources, journal articles, newspaper articles, and official legal documents.

Findings: RBA is a methodology that provides an independent and objective opinion to an organisation's management, determining whether the management of its risks is on acceptable levels. The strength of RBA lies in the distinct nature of this audit approach, which focuses on the business risk and factors triggering the risk and resulting in a more effective and efficient audit. Several issues and challenges were identified in the implementation of RBA, especially in Malaysia: (1) legislation requirements; (2) lack of resources; (3) limited access to data; and (4) duplication of work.

Research Limitations/ Implications: The data pertaining to public sector internal audit reports are considered confidential and sensitive. This aspect placed limitations on the depth of the collected insights. This study also focused on the data obtained mainly from secondary sources, leading to results that cannot be generalised to other countries.

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Practical Implications: Findings from the document review and identification of current problems may offer indications to the Accountant General's Department of Malaysia (AGD) on the current usage of RBA. Therefore, subsequent actions are required to improve internal audit work.

Originality/ Value: This study discussed the current state of RBA applied by the internal auditors in the Malaysian public sector. This finding may encourage future researchers to highlight the methods of integrating a comprehensive RBA that would fulfil the 3Es (effective, efficient, and economy) for the benefit of internal auditors, particularly in the Malaysian public sector.

Keywords: Risk, internal audit, public sector, Accountant General's Department of Malaysia (AGD).

1.0 Introduction

In today's environment, effective internal auditing requires thorough planning including a swift response to the rapidly changing risks. To add value and improve an organisation's effectiveness, internal audit priorities should be in line with the organisation's objectives and address the risks with the highest potential to affect the organisation's ability to achieve its goals. Therefore, the RBA approach is a useful technique to be employed by auditors to perform their audits. In this case, the auditors are focused on analysing and managing different types of risks that may lead to material misstatements. Moreover, a study by Le et al. (2022) examined the factors affecting audit performance through a RBA approach and the relationship between RBA and the quality of independent audit firms. It was indicated from the results that RBA positively and significantly affect the quality of independent audit firms in Vietnam.

Through the use of RBA, auditors direct their attention towards the key risk areas that may contain misstatements. One crucial aspect of the RBA approach is the assessment of the design and implementation of controls against the identified risks. In this case, the challenge is present in determining whether the correct controls are being identified and scrutinised to produce an effective audit. Furthermore, auditors are required to perform a risk assessment of material misstatements based on their understanding of the client's business and control environment. A "top-down" approach to identifying risks involves the clients' day-to-day operations and their financial statements. Upon the identification and assessment of the risks of material misstatement in the financial statements, auditors are able to arrange the audit procedures to respond to the assessed risk, allowing the reduction of the audit risk to an acceptably low level. In a recent study by Wang et al. (2023), it was found that in enabling internal audit activities to add more value to the organisation, integrated risk-based internal audit planning is proposed to assist the audit department in achieving multiple objectives besides risk management. The new framework integrates the risk assessment of auditable units with the selection of audit activities and resource allocation through a combined analytic hierarchy process (AHP), fuzzy comprehensive evaluation (FCE), and weighted multi-choice goal programming (WMCGP) approach. Based on the above discussions, this article aims to discuss the importance of using RBAs for internal auditors to carry out their audit jobs, identify the advantages of the RBA method and practices in the Malaysian public sector,

and examine the issues and challenges in the implementation of RBA in Malaysian public sector. The motivations of this study include the examination of the level of RBA being applied at the AGD's Office and how RBA helps the internal auditors carry out their responsibilities. Notably, the contribution of this study is present through the suggestion for a comprehensive RBA model that may enhance the internal auditors' work to be effective, efficient, and economical based on the gap identified in the current RBA applied in the Malaysian public sector.

The remaining sections of this study begin with Section 2, which reviews prior studies pertaining to RBA topics. Section 3 discusses the research method, followed by Section 4 that presents the results and discussions as well Section 5 provides implications, limitations and future research. The conclusion of this study is presented in Section 6.

2.0 Literature Review

2.1 Evolution of RBA

Messier (2014) found that RBA originated in the late 1990s for most public accounting firms (Bell, Peecher, & Solomon, 2005; Knechel, 2007). International standard setters including the Auditing Standards Board (ASB) and the International Auditing and Assurance Standards Board (IAASB) have issued their standards from 2005 to 2006 (American Institute of Certified Public Accountants (AICPA), 2013; IAASB, 2013), while the Public Company Accounting Oversight Board (PCAOB) issued risk assessment standards in 2010 (PCAOB, 2013). Furthermore, the standard setters believe that the introduction of a risk-based auditing process would enhance the quality of audits. To illustrate, the Accounting Standard Board stated that its risk assessment standards would enhance audit quality by obtaining (1) a more in-depth understanding of the entity and its environment to identify the risks of material misstatement in the financial statements and the entity's actions to mitigate them; (2) a more rigorous assessment of the risks of material misstatement of the financial statements based on understanding of the identified risks, and; (3) an improved linkage between the assessed risks and the nature, timing, and extent of audit procedures performed in response to those risks (AICPA, 2013).

To ensure that organisations adopt risk-based audits, it is vital for internal auditors to play their role in monitoring the company's risk profile and identifying areas to improve risk management (Goodwin-Stewart & Kent, 2006). The objective of an internal audit is to increase the efficiency and effectiveness of the organisation through constructive criticism. While organisations are required to follow rules and regulations, the rules do not necessarily ensure that organisations continue to operate efficiently (DiMaggio & Powell, 1983; Meyer & Scott, 1983). Considering the institutional pressures and uncertainty, organisations will adopt characteristics similar to other organisations with the same environment. This condition is known as isomorphism (DiMaggio & Powell, 1983). Additionally, Fogarty (1996) found that the key attribute of the institutional theory lies in its ability to highlight the distinction between organisations' accomplishments and what is suggested in their structures to the external environment that they should accomplish.

2.2 Risk-Based Audit (RBA)

RBA is a methodology that provides an independent and objective opinion to an organisation's management to determine whether the management of risks is conducted on acceptable levels. Furthermore, auditing through a risk-based approach would reduce the potential of an erroneous audit opinion and assist in achieving audit objectives for the majority of large companies (Gerasimova, Parasotskaya, & Dvoretzkava, 2019). The RBA is one of many opinions presented to the board and audit committee on corporate governance. These opinions are more conventionally known as 'assurance' that includes the opportunity to justify why the assurance should not be provided partially or completely.

RBA begins with all the objectives of the organisation and determines whether the risks harming these objectives are reduced to an acceptable level by the internal control to ensure the achievement of these objectives. In the RBA approach, the methodology consists of five core internal audit roles highlighting the risk management framework of the organisation, which are as follows:

- i. Providing the assurance that the processes used by management to identify all significant risks are effective.
- ii. Providing the assurance that risks are correctly assessed (scored) by management to prioritise them.
- iii. Evaluating risk management processes to ensure that the response to any risk is appropriate and conforms to the organisation's policies.
- iv. Evaluating the report of key risks by managers to directors.
- v. Reviewing the management of key risks to ensure that controls have taken place on the operation and have been monitored.

An important risk management process is a system of internal control that reduces risks to a level acceptable by the board, which is the 'risk appetite' of the organisation. Figure 1 presents the relationship between the risk appetite (dotted line), risks before they are controlled (inherent risks), and risks after they are controlled (residual risks).

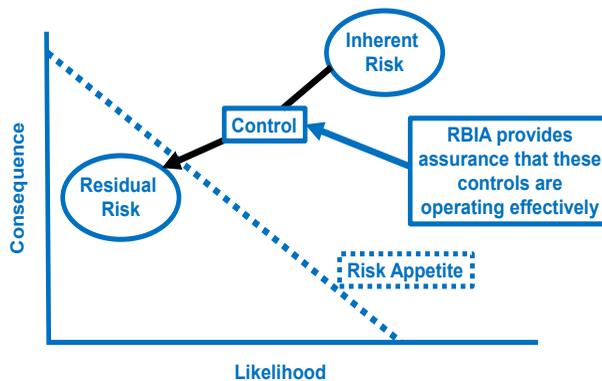


Figure 1: The Interaction Between the Risks

Source: www.internalaudit.biz

It is important for the auditor to plan and implement the audit process using a risk-based audit as it enables the auditor to avoid implicit audit risks and the risks of control and discovery (Sahaib, 2023). In most large organisations, a suitable risk management framework should take place as they are affected by regulations that require the identification, assessment, management, and monitoring of risks. Additional work may be required to identify, record, and score all significant risks to prioritise them.

2.3 RBA Stages

Under RBA stages, the following four opinions are required to be reported to the board:

- i. The risks to the organisation's objectives are managed on acceptable levels.
- ii. Management has established a proper internal control framework focusing on specific objectives, identified the risks threatening the objectives, and established controls that should reduce the risks to acceptable levels.
- iii. The controls are sufficient and operated to reduce the risks below the risk appetite and ensure the achievement of the related objective.
- iv. Action is taken to reduce the risks below the risk appetite and ensure the achievement of the objective.

In presenting the opinions, two audit stages are involved: (1) examination of the internal control framework set up by management; and (2) test of the controls within the framework. The examination and testing stages should be separated into individual audits targeted at the risks with the highest inherent scores, which requires an audit plan. Figure 2 presents the main activities in the planning process carried out by internal audit management.

RBIA - The Risk-Based Internal Audit

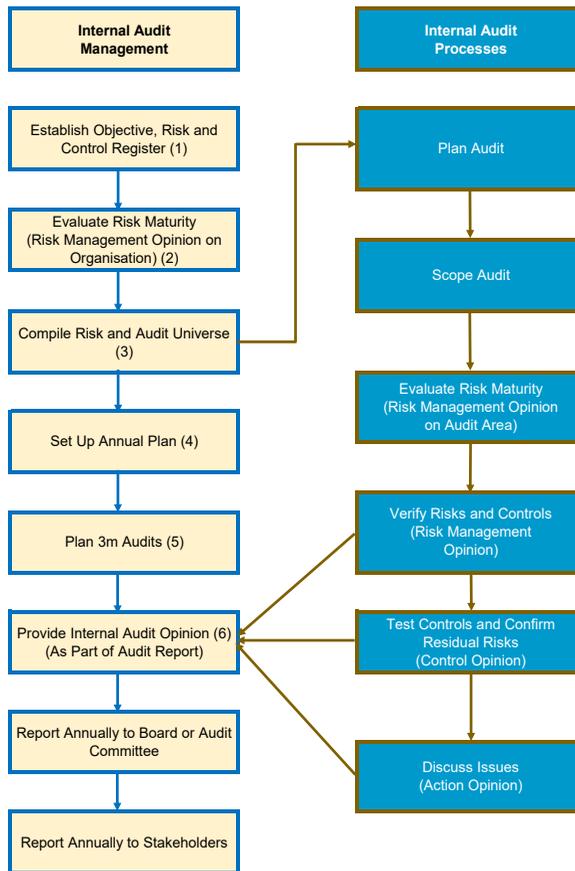


Figure 2: Main Activities in the Planning Process

Source: www.internalaudit.biz

2.4 Levels of Risk Maturity

In conducting RBA activities, the risks in an organisation can be categorised into different levels of risk. The categories of risk defined under the Chartered Institute of Internal Auditors (IIA-UK and Ireland) and The Orange Book (2023) on Management of Risk-Principles and Concepts are presented in the subsequent sections.

2.4.1 Chartered Institute of Internal Auditors (IIA-UK and Ireland)

The Chartered Institute of Internal Auditors (IIA-UK and Ireland) publication on ‘Risk-Based Internal Auditing’ defined five levels of risk maturity. Considering that the effectiveness of RBA revolves around a reliable risk register, understanding the characteristics of each type of risk and determining the suitability of each characteristic with the organisation are important.

- i. Risk enabled: (Risk management and internal control are fully embedded into the operations) An understanding of the management of risk and the monitoring of controls would be highly sophisticated for an organisation. The emphasis of the audit work would be placed on ensuring that the risk management processes are working properly, key risks are reported to the board, and the controls by managers are conducted. When deficiencies are identified, a recommendation from the internal activity may not be necessary as the management would be aware of the action to be taken.
- ii. Risk managed: (Enterprise-wide approach to the developed and communicated risk management) In this case, facilitating the management's proposed action where deficiencies are found is necessary.
- iii. Risk defined: (Strategies and policies are in place and communicated. Risk appetite is defined) While most managers may have compiled lists of risks, it is possible that these lists would not be assembled into a complete Objectives, Risks, and Controls Register (ORCR). The internal audit activity would act as a consultant to facilitate the compilation of a complete ORCR from the lists of risks that have been compiled by managers. The quality of risk management may vary across the types of organisations. Therefore, any individual audit would need to emphasise understanding the level of risk maturity in the areas under audit. With poor risk management, it is necessary to facilitate the identification of risks using workshops and interviews. It is also possible that a certain degree of consultation work will be necessary to advise managers on what action to take when deficiencies are found.
- iv. Risk aware: (Scattered silo approach to risk management) No ORCR will be available; only a few managers would be required to determine their risks. Furthermore, internal auditors would act as consultants to undertake a risk assessment in line with management to determine the work required to implement a risk framework that fulfils the conditions of the board. With the use of the key risks agreed upon by the management, an audit/ consulting plan will be generated with the aim of providing assurance that risks are managed or recommending suitable methods of responding to the risks.
- v. Risk naïve: (No formal approach developed for risk management) It would be necessary for risk-aware organisations to promote or provide consultation on the establishment of a risk management framework.

2.4.2 The Orange Book (2023) on Management of Risk-Principles and Concepts

The Orange Book (2023) aims to build uncertainty regarding the organisation's benefit by constraining threats and taking advantage of opportunities. Five key aspects to addressing risk are present, which are as follows:

- i. Tolerate: The exposure may be tolerable without any further action being taken. Even if it is not tolerable, the ability to perform any actions on the risks may be limited or the cost involved in the actions may be disproportionate to the potential benefit. This option may be supplemented by contingency planning for managing the impacts that will arise if the risk is realised.
- ii. Treat: The organisation's continuous business activity enables the possibility of the risk, therefore action (control) is taken to constrain the risk to an acceptable level.
- iii. Transfer: The transfer of risks may be considered to reduce the exposure of the organisation. It may also be attributed to another organisation (possibly another government organisation) that is more capable of effectively managing the risk. It is important to note that some risks are not fully transferable; it is generally not possible to transfer reputational risk even if the delivery of a service is contracted out. The relationship with the third party to which the risk is transferred should be carefully managed to ensure a successful transfer of risk.
- iv. Terminate: Some risks will be treatable or obtainable on acceptable levels solely by terminating the activity. It is noteworthy that the option of terminating activities may be highly limited in the government sector compared to the private sector. To illustrate, several activities are conducted in the government sector due to the high associated risks that offer no alternative methods for achieving the output or outcome required for the public benefit.
- v. Take the opportunity: (Option that should be considered when risk is being tolerated, transferred, or treated) Two aspects are present: 1) whether an opportunity arises at the same time threats are mitigated to utilise the positive impact; 2) whether the emerged circumstances offer positive opportunities despite not imposing threats.

2.5 RBA Documentation

In conducting the RBA, a link is established between the objectives, risks and controls, and audits, creating a list known as Risk and Audit Universe (RAU). Provided that risks and audits are mapped, the audit plan would be generated. The audit plan reports could be produced through the following methods:

- i. Audits in the current audit plan.
- ii. Risks in order of the objectives being threaten.
- iii. Risks through the inherent risk score in order of their significance.
- iv. Risks associated with a particular process or function.
- v. Many other reports including the reports on resources based on the stored data.

Figure 3 summarises the important data and the 'audit trail' provided by RBA. This figure demonstrates the method through which any individual test is related to the overall

opinion shown to the audit committee, which facilitates the justification of opinion based on the individual tests.

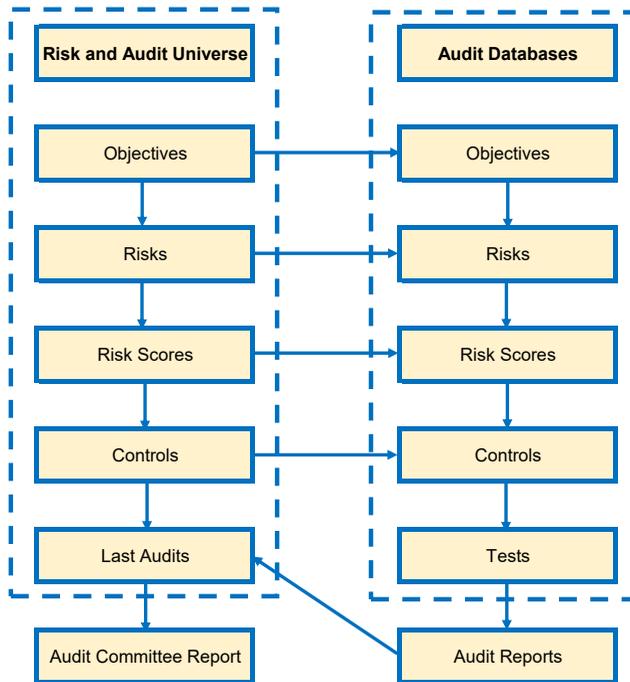


Figure 3: Audit Documentation

Source: www.internalaudit.biz

2.6 RBA versus Traditional Internal Audit

The RBA is an approach separated from other internal audits; provided that it requires extensive knowledge of the business and its risks, it is frequently regarded as being considerably complex. Based on the International Institute of Internal Auditors (IIA), a traditional internal audit is an independent evaluation function that examines the processes of serving the business and reporting the inspection results. This audit is also known as a control-oriented audit, given that internal auditors constantly monitor and report on the internal control structure that is present in the organisation on behalf of the management. Under RBA, a traditional internal audit is required to focus on the application and effectiveness of risk management procedures, risk assessment methodologies, and a critical evaluation of the adequacy and effectiveness of the internal control system. While the responsibility for identifying and managing risks falls under management, one of the key roles of internal audit is to provide assurance that the risks have been properly managed (Chartered Institute of Internal Auditors, 2023). Accordingly, the following Table 1 presents a comparison between RBA and the traditional approach of internal audits (IA).

Table 1: Traditional Internal Audit (IA) versus RBA

Traditional IA Approach	RBA Approach
The audit plan is based on the audit cycle.	The audit plan is based on the results of the business risk evaluation. Risky areas are mainly and frequently addressed.
Important risks might not be covered during the audit plan.	Provides assurance that important risks are being managed properly.
Focuses on deficiencies in controls and cases of non-compliance with policies and procedures.	Focuses on risks that are not properly controlled and excessively controlled.
IA resources are spread over all business activities.	More efficient use of IA resources by concentrating on risk areas.
Business risks are not being mapped.	The importance of risks is established during the risk assessment phase in line with the agreement between IA.
Disagreement with the business management over the action plans, leading to delays in implementation.	Facilitates the consensus with line management on the required action plans, leading to timely improvement in the implementation of corrective measures.

Source: Chaudhari (2017)

2.7 Advantages of RBA Approach

As previously mentioned, RBA may be defined as an audit approach based on the determined risk profiles of the businesses, the audit progress based on the risk profile of the business, and the allocation of the audit resources based on the risk profile for improvement in the efficiency of the audit. This type of audit approach is regarded as superior compared to the traditional internal audit approach due to its advantages. Accordingly, Chaudhari (2017) highlighted the immediate advantages of the use of RBA, as presented in Table 2.

Table 2: Benefits of RBA

Strategic Benefits	<ul style="list-style-type: none"> Easier adaptability to the changing conditions by developing a consistent and comprehensive approach to risk management Offers a better understanding and management of the risks
Performance-Related Benefits	<ul style="list-style-type: none"> Increases the risk of opportunity by reducing negative risks Provides the risks to be identified correctly and the existing management and internal control to ensure the best performance
Management of Unexpected Events	<ul style="list-style-type: none"> Creates the ability to give the correct answer to unexpected demands and challenges in the face of deviations from targets Easier to understand the risks waiting for the business and their actual effects

Source: Chaudhari (2017)

The implementation of RBA allows the identification of the following advantages:

a) Increases the Efficiency of Auditing

The RBA is an approach that enables the internal audit review to increase its efficiency and focus on business needs. It virtually covers all aspects of public financial management and enhances transparency, accountability, and responsiveness to public expenditure policy

priorities (Lutta, 2012). As a result, the management is able to effectively identify, assess, and respond to the risks above and below the risk appetite (e.g., the amount of risk to which the organisation is prepared to accept, tolerate, or be exposed at any point in time), which ensures that the key concerns and significant risks are taken into account within the scope of the audit.

b) More Risk-Focused, Oriented

The RBA is designed to be used throughout the audit to efficiently and effectively focus on the nature, timing, and extent of audit procedures in the areas with the highest potential for causing material misstatements in the financial report (Institute of Chartered Accountants of Australia, 2011). Therefore, the responses to risk are effective albeit not excessive in managing the inherent risks within the risk appetite. Generally, risks that have been mitigated to within the management's risk appetite would be tolerated. Furthermore, the additional management action to treat, transfer, or terminate the risk would be carried out if the residual risk exceeds the risk appetite. In other words, the RBA directs the audit at high-risk areas as opposed to financial areas, which may not represent the high risk. Essentially, a higher-risk area would require more audit time and client controls.

Considering that the audit plan is driven by the proportion of risks where the audit committee requires assurance, the number of resources required would be determined. This condition also ensures that the resources are directed towards the examination of the management of the most significant risks. The risks based on RBA can be scored by attributing a level such as a high, medium, or low risk to the consequence and likelihood of the risk. This aspect differs from the traditional audit approach, whereby the available resources determine the audits that could be carried out. Traditionally, internal audit has accepted a control-based approach inspecting and verifying the operation of compliance and financial controls in line with an established set of criteria.

c) Value-Added to the Organisation

Besides focusing on the level of risk, the RBA helps evaluate and build value into the financial reporting process and the client's business and activities. To illustrate, the RBA that focuses on both recorded and unrecorded risk improves financial statements and the financial statement reporting process. This improvement is achieved by shifting the focus from inspecting the quality of the financial information recorded in the financial statements to establishing quality in the financial reporting process and adding value to the client's operations (Gibson, 2003).

At every stage, the RBA aims to reinforce the responsibilities of management and the board for the management of risk (Chartered Institute of Internal Auditors, 2023). Notably, the use of data is critical for improved insights. A correct assessment of risk could only be undertaken if adequate and reliable data is available on time and at regular intervals. The RBA prioritises the auditor's understanding of the entity and its environment to identify risks that may result in material misstatements of the financial report. This understanding is gained through the clients' operation of their business, management, and internal and external environments. The acquired knowledge can assist in designing an audit programme that features the most effective combination of tests in response to each client's unique circumstances. In other words,

an effective audit department is able to develop a variety of approaches, enabling the selection of the optimal approach on a case-by-case basis.

d) More Transparent Audit Trail

RBA also provides an 'audit trail' from an individual audit report through tests, controls, and risks to objectives, which is then forwarded to the audit committee report that determines whether those objectives are threatened or vice versa. In circumstances where residual risks are not in line with the risk appetite, action can be taken to mitigate the situation. Moreover, the RBA ranks the recommendations for mitigating the risks by offering the highest value added and followed to the lowest value. These recommendations can be identified through controls, risks, and processes to the organisation's objectives. Auditors are also able to conveniently specify the proportion of significant risks that have been audited and the respective results to provide assurance to the board regarding the effectiveness of the company's system of internal control.

e) Encourages Strong Risk Management Processes

Risk management is a challenging landscape that requires the adaptation skills of auditors, considering that every organisation presents different attitudes towards risk and different structures, processes, and languages. Risk management processes, including the effectiveness of responses and completion of actions, are monitored by management to ensure the continuation of their effective operation. For this reason, RBA aims to reinforce all the responsibilities of risk management and establish a strong and well-designed risk management framework. A study by Lois et al. (2021) found a statistically significant positive relationship between the implementation of RBIA and the provision of risk management training and between the active audit committee role and the establishment of a formalised risk management system.

f) Proper Classification and Reporting of Risks

Risks, responses, and actions are properly classified and reported, considering that RBA links all the aspects of internal auditing, namely the objectives, processes, risks, controls, tests, and reports. The extent of transaction testing would depend on the risk profile of the organisation and its operations. Furthermore, the relevance of any test is present in terms of its relation to the opinion on the entire risk management framework, which is attributed to the relationships set up in the risk and audit universes. However, this condition is necessarily feasible in cases where conventional audit programs are used due to the vagueness of why the test is conducted, the significance of a control that is found to be defective, the risk treated by the control, and the objective threatened by the risk.

3.0 Research Methodology

A library search and evaluation of earlier literature reviews on the topic of RBA and the internal auditing profession were conducted to achieve the study's objectives. The library search covered a wide range of materials, including online and print sources, journal articles, newspaper articles, and official legal documents. The references were compiled using online resources including Web of Science, Scopus, Science Direct, and Google Scholar. It is

important to note that the references were taken solely from manuscripts/ papers issued between 1988 and the most recent year of 2023.

4.0 Results and Discussions

Based on the literature review in Section 2, this section highlights the development of internal audit in the Malaysian public sector, followed by the relevant rules and regulations in Malaysian public sector internal audit, the importance of RBA in the Malaysian public sector, and the issues and challenges in the implementation of RBA in Malaysian public sector.

4.1 Development of Internal Audit in the Malaysian Public Sector

The audit institution was established in Malaya during the British administration in the early 1800s to strengthen the government's financial administration system. This institution was separated by state for the Federated Malay States and the Straits Settlements. The first Auditor General for the Federated Malay States was appointed in 1906, while the audit institution for the Straits Settlements was present in Singapore and solely involved two states in Peninsular Malaya: Penang and Melaka. In 1932, the two audit institutions were merged and placed under the control of the Director of Colonial Audit based in London. This institution was also introduced in the Unfederated Malay States. The auditing process focused on verifying financial statements and record maintenance, which also involved impromptu inspections. Prior to the Federal Constitution and the Audit Act 1957, the auditing process was based on laws and regulations such as the General Orders of the Federated Malay States Government, current directives from the Secretary to the Government, Malayan Union Circulars, and Colonial Regulations (Jabatan Audit Negara, 2014).

Notably, the internal audit function has been an integral part of the Malaysian public sector since the early 1970s. The Malaysian government recognised the importance of an independent internal audit function in ensuring an effective management of public resources and promoting good governance and accountability. The development of the internal audit function in the Malaysian public sector could be traced back to the establishment of the National Audit Department (NAD) in 1957. The NAD was responsible for conducting external audits of government agencies and departments. However, until the early 1970s, the Malaysian government had not recognised the importance of the functions of an internal audit within government agencies and departments. Moreover, the growth of internal auditing in the Malaysian public sector has undergone significant changes over the years. Following the Malaysian government's recognition of the importance of internal audits in ensuring effective and efficient governance, various initiatives have been implemented to strengthen the internal audit function.

In the early days, the internal audit function in the Malaysian public sector was mainly compliance-based, with focus being placed on ensuring adherence to financial regulations and procedures. However, following the changes in the landscape of governance and the increasing complexity of public sector organisations, the evolution of the internal audit into a more strategic and risk-based function has gained importance.

4.2 Rules and Regulations in Malaysian Public Sector Internal Audit

Legislation and regulations hold a high significance in the financial management of the public sector. Every action of the management should be in line with the provisions of the law. Furthermore, the audit team is responsible for ensuring the organisation's compliance with laws and regulations. In Malaysia, the public sector internal audit is governed by several regulations and guidelines that are framed within the context of the Federal Constitution, the Financial Procedures Acts of 1957, Treasury Instructions, and Treasury Circulars. These regulations also outline the legal and procedural framework for the internal audit function in the public sector.

4.2.1 Federal Constitution

The Federal Constitution of Malaysia has established the constitutional framework for governance and financial management in Malaysia, followed by the establishment of the principles of accountability, transparency, and integrity in the management of public funds. The constitution assigns responsibility to the government to ensure that public funds are utilised efficiently and effectively. Under Articles 96 to 112, the Federal Constitution presents clauses related to government financial management and control. The provisions in relation to the audits are present in Article 106(2), highlighting the crucial task and authority of the Auditor General in terms of examining the finances of the government (Federal and States). The Auditor General also holds the authority to examine the accounts of other public organisations and specific bodies specified by the king through his order.

4.2.2 Financial Procedures Acts 1957

The purpose of the Financial Procedures Acts (FPA) 1957 is to manage and control Malaysia's public finances, financial accounting, and reporting procedures. The element of control in the Act is outlined under Section 15A (3), where the person in charge (e.g., controlling officer) of public money should confirm whether the details in a financial statement (Section 16) are accurate and appropriate. They may also include comments or explanations if necessary, while the Minister or State financial authority may request this confirmation.

The FPA 1957 outlines the legal framework for financial management and control in the public sector. It also governs the processes related to budgeting, accounting, procurement, and internal audit. The FPA 1957 establishes the role of the AGD as the central authority responsible for financial management and control, which includes the establishment and operation of internal audit units. Under the FPA 1957, public sector entities are required to establish internal audit units to conduct independent and objective assessments of financial transactions, systems, and controls. This act specifies the powers and functions of the internal audit units, including the authority to access records, request information, and report on any irregularities or weaknesses in financial management.

4.2.3 Treasury Instructions and Treasury Circulars

The Treasury has issued administrative guidelines known as the Treasury Instructions and Treasury Circulars to provide specific instructions and procedures for financial management and control in the public sector. These guidelines cover various aspects of internal audit,

including the establishment of internal audit units, the qualifications and appointment of internal auditors, audit planning and procedures, reporting requirements, and follow-up actions on audit findings. Furthermore, the Treasury Instructions and Treasury Circulars also highlight the roles and responsibilities of internal auditors, internal audit committees, and management in relation to internal audit activities. This is followed by guidance on the conduct of audits, which features the scope, methodology, and reporting requirements.

According to Treasury Instruction 138, the Accountant General under the direction of the Secretary General of Treasury is responsible for ensuring that an appropriate accounting system is established and an appropriate supervision is carried out to prevent losses that are caused by fraud or negligence. In Treasury Instruction 303, an officer shall immediately report to the Secretary General of Treasury or the State Financial Officer on any matter through which he knows or believes that misconduct or inefficiency by any officers under his control has caused or may cause financial loss to the government. Thus, failure to make this report may hold the supervisory officer accountable.

Treasury Circular, PS 1.2 is about the implementation of Federal Government accrual accounting practices which is based on the regulations and guidelines issued by the Accountant General's Department of Malaysia. Another Treasury Circular on the establishment of Internal Audit in the Public Sector is PS 3.1, which elaborates on the implementation of internal audit in Federal and State Ministries or Departments. It aims to provide an explanation of the roles and responsibilities of the Internal Audit Unit, Secretary General of the Ministry or Federal Department or State Government Secretary and Malaysia Treasury, including guidance on the implementation of Internal Audit. Based on this circular, the Internal Audit Unit plays a role in conducting financial management audits, which include the examinations of financial systems, internal controls, and financial records to ensure that expenses, revenue, assets, and stores are managed in accordance with relevant laws, regulations, and directives.

Following Treasury Circular PS 3.1, a new Treasury Circular PS 3.2 was introduced in the establishment of Audit Committees at the Ministry and State Government levels. These circular aims to discuss issues raised by either the Internal Audit Unit or the NAD. The Audit Committees also play a role in ensuring that preventive and corrective actions are taken by the auditing party to rectify related weaknesses and prevent their recurrence. Besides the laws and regulations issued by the Malaysian government, Internal Audit adopts rules and guidelines issued by professional bodies, such as the Institute of Internal Audit and SIRIM Malaysia. In terms of the standards, the AGD uses the Committee of Sponsoring Organisations of the Treadway Commission (COSO) and MS ISO 31000 as the main references.

The COSO, which develops the COSO framework, is a widely accepted framework for internal control and risk management. It consists of five interrelated components: control environment, risk assessment, control activities, information and communication, and monitoring. The framework emphasises the importance of a strong control environment, which includes factors such as integrity and ethical values, management philosophy and operating style, organisational structure, and human resource policies and practices. This is followed by MS ISO 31000, which is a standard that outlines the principles and guidelines for risk management. It also highlights the need for organisations to adopt a systematic approach to managing risk, which comprises the identification, assessment, and treatment of risks.

Additionally, the standard also emphasises the importance of integrating risk management into an organisation's overall management system.

The Federal Constitution, FPA 1957, Treasury Instructions, Treasury Circulars, and Professional Bodies Guideline establish the regulatory frameworks governing the establishment and operation. These frameworks also conduct internal audits in the public sector in Malaysia. These regulations aim to ensure accountability, transparency, and effective financial management in the utilisation of public funds.

4.3 RBA in the Malaysian Public Sector

In Malaysia, risk-based auditing is an approach used by the public sector to evaluate the effectiveness of internal controls and ensure compliance with laws, regulations, and policies. This approach involves the assessment of risks in line with the organisation's objectives, followed by designing audit procedures to address those risks. Furthermore, the Malaysian government introduced several initiatives to address various risks in government management, including the Government Transformation Program (GTP) and the Economic Transformation Program (ETP). These initiatives were implemented based on feedback from various levels of society. The government's efforts in executing the GTP and ETP reflected their commitment to address the needs of the people rather than their personal interests. As a result, GTP and ETP exhibited positive progress and outcomes.

The GTP highlighted the importance of engaging and comprehending the requirements of the people to deliver suitable programmes for all Malaysians. The GTP presents three horizons, namely GTP 1.0 (2010-2012), GTP 2.0 (2013-2015), and GTP 3.0 (2016 onwards), which will determine Malaysia's status as a developed nation. Furthermore, GTP includes seven National Key Result Areas (NKRA) with an aim to address various issues such as the reduction of cost of living, reinforced rural development, upgrade on urban public transportation, improvement in the standard of living of low-income households, assurance of quality education, reduction of crime rate, and eradication of corruption. Some of the aforementioned risks in GTP are the risks of crime and corruption.

Risk-based auditing is an approach to auditing that focuses on identifying and assessing risks to determine the areas that require more thorough examination. In the context of Malaysia, risk-based auditing is used by the Internal Audit Department in various government agencies and regulatory bodies to ensure accountability, transparency, and efficiency in the implementation of the GTP, NKRA, and ETP initiatives. Using RBA methodologies, government agencies and auditors are able to prioritise their resources and efforts in areas with higher risks or stronger impact on the achievement of the desired outcomes for the GTP, NKRA, and ETP. This feature assists in identifying potential issues, vulnerabilities, or inefficiencies in the implementation of these programmes, allowing for corrective actions to be taken to address the issues. Moreover, this auditing is also an integral part of the governance and performance management framework in Malaysia, which ensures an effective implementation and monitoring of the GTP, NKRA, and ETP initiatives and promotes accountability and transparency in public service delivery and economic transformation.

4.4 Issues and Challenges in Implementing RBA in Malaysian Public Sector

RBA is highly beneficial to the public sector. However, several issues and challenges are present in the RBA in the public sector in Malaysia, which will be discussed in this section.

4.4.1 Legislation, National Leadership, and Culture

Malaysia is a country that has gained independence from the British. For this reason, British or Commonwealth nations have a significant influence on the structure of public administration and the legal framework of the public sector. Malaysia is a federal country that comprises 13 states and three federal territories. Each state is under its respective government, while the federal government is responsible for all affairs related to the administration of the state, such as defence and internal security. Thus, each state is differentiated by various laws. The existence of various forms of legislation increases the level of bureaucracy and the vagueness of administration. The efforts to standardise administrative practices, such as accounting and auditing, have led to several challenges. Moreover, the existence of various forms and types of legislation may impact the efforts of effectively identifying and managing risks (Saad, & Alias, 2020). There is also a question regarding to what extent can the existence of many rules and regulations affect the effectiveness of internal audit practices in Malaysia's public sector (Mohd Noor & Mansor, 2018).

National leadership factors also influence public management practices. To a certain extent, the leadership of the country would determine the leadership and direction of a ministry. Furthermore, leadership changes, such as the changes taking place after the 14th and 15th Malaysian general election results, may impact public management policies and decision-making. Leadership changes and political pressure could also affect the freedom of public service personnel (e.g., personnel under the accounting and auditing sectors) in making objective decisions (Alias & Saad, 2020). In fact, Malaysia is a plural country consisting of various cultures, races, and religions. However, racial dominance takes place in certain sectors, such as the dominance of Malays in the public sector, Chinese in the business sector, and Indians in the plantation sector. This difference affects effective risk communication and reporting to relevant stakeholders (Johari & Zainuddin, 2018). Besides, cultural differences, which also include ways of thinking, customs, and attitudes, play a role in building an efficient risk management environment.

4.4.2 Lack of Resources and Talent

It could be seen that the existence of a new unit in the organisation will increase the operating cost, which would impact the organisation's expenses. Resource constraints, such as financial funds, may inhibit risk-based internal audit operations, which explains the organisations' reluctance to spend on RBA activities (Noor & Zakaria, 2016). Ahmad, Othman, Othman, and Jusoff (2009) highlighted that the inadequacy of audit personnel is a significant hindrance to the efficacy of the internal audit function in the public domain. To develop an effective RBA, any tasks in organisation should be carried out by competent staff. They are not only required to be objective, but they also need to be equipped with experience in the fields of accounting, auditing, and risk management. The lack of skilled members in the field of internal audit leads to challenges in solving the issues and employing and maintaining internal audit staff in a department (Noor, Zakaria, & Hossain, 2019).

4.4.3 Data Access, Staff Understanding, and Environmental Change

To implement RBA, easy accessibility to information and data related to accounting is crucial. The data should also be complete and relevant to facilitate the process of identifying risks and follow-up actions. However, if the data is unobtainable, it would be challenging to monitor the effectiveness of risk management activities (Cheong, Azam, & Ahmad, 2020). It is also important to note that the process of conducting RBA involves multiple units within an organisation, which may extend beyond departmental boundaries. Thus, thorough comprehension and collaboration among the personnel within a department are crucial. The degree of collaboration and absence of participation among the personnel will affect the identification of primary risks within the organisation. The complexity of this situation increases when the comprehension of RBA and understanding of the internal auditor's function are limited, which may also restrict the auditor's ability to contribute value to the organisation.

Delivery activities in the public sector have changed over time. Currently, service delivery activities, especially those involving relational affairs employ various forms of technology. The widespread use of technology requires a more modern auditing method. In this case, auditing standard setters particularly those in the public sectors such as AGD requires proactive actions in managing environmental change issues and constantly providing clear guidance to auditing practitioners in the public sector.

4.4.4 Duplication of Works

Cooperation and good relations between the NAD and the Internal Audit Unit are crucial for achieving the organisational objectives. Therefore, the preparation process of the Annual Internal Audit Plan requires a discussion between the Internal Audit Unit and the NAD regarding audits that have been, are being, and will be conducted. This discussion would ensure that there is no overlapping task and allow the identification of areas or issues that require audit.

5.0 Implications, Limitations, and Future Research

Apart from the aforementioned issues and challenges, another challenge is present in combatting corruption in the public sector. The prevention of corrupt practices should begin at an earlier stage, considering the critical repercussions of this unethical activity to the country. However, the effectiveness of the current internal audit practices to minimise corruption cases remains a matter of debate. Therefore, the Malaysian Institute of Integrity has developed the Anti-Bribery Management System (ABMS) ISO 30071:2016, which can also be used by the internal auditor of the public sector to prevent and identify corruption-related risks (Wan Mohd Radzi, 2023). Furthermore, the presence of internal auditors and the implementation of internal audit activities gain a negative perception by some parties. Besides affecting the effectiveness of internal audits, this perception is also not considered a value-adding agent in the organisation. In this case, Wan Mohd Radzi (2023) suggested that the integrity of internal auditing should be streamlined, while the aspect of risk identification especially the risk of corruption should be emphasised.

This study, which focuses on risk-based audits in the Malaysian public sector, is not exempted from limitations. Some of the limitations may impact the comprehensive analysis of

the subject matter. One notable constraint was present in data collection, which was attributed to confidentiality concerns. Furthermore, the restricted access to sensitive information within internal audit reports in the public sector may limit the depth of insights being obtained. Provided this study also focused on the data collected mainly from secondary sources, the generalisation of the results of this work to other countries could not be carried out. Thus, it is suggested for future researchers to further explore the methods of integrating a comprehensive RBA with 3Es (effective, efficient, and economy) for the benefit of internal auditors, particularly in the Malaysian public sector.

Several factors have contributed to the necessity of expanding the implementation of RBA within public sector agencies. Upon the observation of the Auditor General's Report, it could be seen from the internal audit reports that recurring audit issues take place annually. Similarly, a newspaper report cited the statement by the Prime Minister, Datuk Seri Anwar Ibrahim, that ministers must carefully examine each audit query in the 2021 Auditor General's Report, particularly the queries involving recurring matters that remain unaddressed. The Prime Minister also stated that lessons should be learnt from each audit query in the report, while the ministers are urged to identify issues and seek solutions. He emphasised during a Cabinet meeting dated 18 January 2023 that an extended period was dedicated to scrutinising the 2021 Auditor General's Report, and the ministers have been urged to ensure that no repetition of any query would occur (Rafidah, 2023). Overall, this situation was supported by findings recorded from Transparency International, which assesses the extent of corruption perception in this country.

Table 3: Transparency International (Corruption Perceptions Index) - Malaysia

Year	Ranking
2022	61
2021	62
2020	57
2019	51
2018	61

Source: <https://www.transparency.org/en/countries/malaysia>

The Corruption Perceptions Index (CPI) ranks countries based on perceived levels of corruption within the public sectors, which indicates expert opinions and citizens' perceptions. Malaysia's fluctuating CPI rankings over the years (Table 3) demonstrated the changing perceptions of corruption within its governance, where audit, particularly risk-based internal audit, plays a significant role. Effective audit practices contribute to transparency and accountability by identifying, assessing, and mitigating risks, including the risks related to corruption. Moreover, an audit enhances the integrity of governance mechanisms by addressing the weaknesses in internal controls and suggesting improvements. The role of audit is extended to the evaluation of the efficacy of anti-corruption measures, which ensures compliance with laws and ethical standards and validates the accuracy of financial data. Often associated with corruption, the audit also aids in detecting fraud and assessing whistleblower protection mechanisms. While audit fosters a culture of transparency, the complexity of corruption requires a comprehensive approach that involves legal reforms,

enforcement mechanisms, public awareness initiatives, and continuous governance improvement to effectively address the perceptions reflected in CPI rankings.

The latest development of Malaysian scenario is associated with the voters' response towards the government in the general and state elections, which specifically focus on the governance of government agencies. The pressure from the voice of the people in the general elections in 2018 and 2022, including the state elections in 2023 serves as an indicator of the government's rejection to enhance governance administration and subsequently reduce cases of corruption, abuse of power, breach of trust, and fraud. High-profile cases including 1MDB, the National Feedlot Corporation (NFC), and the Port Klang Free Trade Zone (PKFZ) ought to serve as the catalysts for change in government administration. Moreover, the recent election outcomes indicate the urgency for reform in government administration, particularly in strengthening the governance of each government agency through changes in the implementation of internal audits. Notably, RBA emerges as the most suitable alternative to reinforce the execution of internal audits.

6.0 Conclusion

Risks are the inevitable elements faced by any organisation. To illustrate, the occurrence of an incident such as organisational fraud may cause adverse effects on an organisation. In mitigating these potential risks, it is recommended that the organisation conducts inspections or audits of its processes and activities. Conducting audits is a crucial process, particularly for organisations involved in service delivery and the use of public funds, such as government agencies. In line with the increasingly intricate and technologically advanced landscape of the modern world, it is imperative that the auditing methods employed in the public sector would also evolve accordingly. Moreover, the re-evaluation of the auditing methods that prioritise the compliance aspects is also important. The auditing methodology should prioritise the risk factor, specifically in terms of its impacts on the overall function of an organisation and the effective methods of managing it.

Overall, auditors involved in the RBA approach ought to identify the key risks in day-to-day business operations, assess the impacts of those risks on financial statements, and arrange audit procedures based on the assessed risks. RBA approach does not only assist auditors in managing and minimising the audit risk, but it also assists in reducing audit work to a certain degree while maintaining the audit quality. In this case, auditors should focus on the risky areas that may lead to material misstatement. Their audit objectives can be fulfilled without being required to spend significant time on the low-risk areas. Despite the unavailability of a perfect audit approach that provides the auditors with a full guarantee that the audit objectives are fulfilled, the RBA approach can help auditors reduce the possibility of the audit objectives not being fulfilled in the audit engagement regardless of the size, location, and complexity of the client. For this reason, the RBA approach is the most frequently used audit approach among auditors in auditing financial statements.

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Current Practices and Issues in the Accounting for Government Infrastructure Assets

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Abstract

Purpose: This paper aims to explore the current accounting practices and issues in accounting for infrastructure assets in Malaysian public sector organisations. Comparatively, this paper also provides an overview of current practices in other countries.

Design/ Methodology/ Approach: Data collection was through reviews of extant literature, accounting standards and guidelines by the Accountant General's Department of Malaysia (AGD), including guidelines and government publications in other countries.

Findings: Accounting practice for infrastructure assets varies across countries. There is no specific accounting standard for infrastructure assets. Instead, most countries including Australia, Austria, Canada, France, New Zealand and Malaysia follow the accounting standards for property, plant and equipment to account for infrastructure assets. However, given the unique nature of infrastructure assets, there are issues in identifying what constitute infrastructure assets and determining which government organisations have control over their assets. In addition, challenges in recognition and valuation of infrastructure assets, which include initial and subsequent measurement, depreciation and disclosure also exist.

Practical Implications: The government's spending for infrastructure assets represents a significant proportion of its budget. Therefore, accurate accounting treatments and reporting of the assets is pivotal. This paper aims

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to present an update to policy makers and practitioners on current pertinent accounting standards, issues and accounting practices at the international level as well as at the Malaysian federal government.

Originality/ Value: Research on accounting for infrastructure assets is still limited. Findings from this research will add to the body of knowledge by highlighting the main issues and providing basis for further investigation.

Keywords: Infrastructure assets, definition, recognition, IPSAS17, MPSAS17.

1.0 Introduction

The Malaysian Government has decided to follow the International Public Sector Accounting Standards (IPSAS) accrual-based accounting issued by the International Public Sector Accounting Standards Board (IPSASB) since 2011. The responsibility to convert IPSAS to Malaysian Public Sector Accounting Standards (MPSAS) is held by the AGD. By middle of 2022, Malaysia has adopted and introduced 36 MPSAS out of 44 IPSAS issued by the IPSAS Board.

Although the official mandate to report financial statements using accrual-based accounting method has not been observed, most government agencies, especially at federal and state levels, have started to record and report internally using the financial statements input via a computerised accounting system. Several studies have reported on problems faced by the accounting personnel in complying with MPSAS, especially in accounting for assets (Abu Hasan, Saleh and Isa, 2022; Rosli, Kasim and Kamaluddin, 2020; Rosli, Hasbolah and Yahya, 2019; Ismail, Abdullah and Zainuddin, 2013). Even though the AGD had conducted many trainings and workshops, the issues persist. One of the difficulties in applying the accounting standards for property, plant and equipment (PPE) is accounting for infrastructure assets. Studies and publications that examined and offered solutions to problems faced in the Malaysian public sector accounting treatment of assets, particularly on infrastructure assets, are limited.

Therefore, this paper aims to explore current accounting practices and issues in accounting for infrastructure assets in public sector organisations. Additionally, the paper will provide an overview of current practices in other countries. In the next section, background of accounting for government infrastructure assets are elaborated, followed by the methodology adopted, discussion on global issues which surrounded accounting for infrastructure assets by governments and the current practice in Malaysia. Then, this paper ends with a conclusion.

2.0 Background of Accounting for Government Infrastructure Assets

In serving the public, governments control and maintain a significant amount of infrastructure assets (Dollery, Kortt and Grant, 2013). Usually, infrastructure assets include roads, bridges, water and sewerage networks, stormwater drainage, buildings and structures related to utilities, energy, environment, social and defence. Infrastructure assets also take up a major proportion of the total assets, especially for local governments and several ministries of the federal government (Ivannikov and Dollery, 2020). Pilcher (2005) reported that the

carrying value of infrastructure assets in the New South Wales local government constituted an average of 60% of the total depreciable assets. Ivannikov and Dollery (2020) also wrote about the problems with depreciation and valuation of infrastructure assets in Australia that occurred since the public sector adopted accrual accounting in 1991. The Australian Government also struggles to apply the well-established private sector accounting principles as the accounting principles are mainly not relevant to government infrastructure assets (Ivannikov and Dollery, 2020). Government infrastructure assets are unique since they are significantly costly, have very long and sometimes uncertain lives. The assets are not meant to be sold and are operated to service the public and not for profits.

Ouda (2016) wrote that recognition for public infrastructure can be complex because it has been acquired in different ways. Consequently, governments cannot afford to ignore the infrastructure assets since they are significant and important in government operations (Farias, 2020; Pallot, 1997). Pallot (1997) highlighted the importance of capturing these assets to avoid underestimating resources which the government controls, while IPSAS also advised infrastructure assets to be accounted for adequately because of their service potential. There is also growing interest amongst researchers and academics on the topic of how government identifies and accounts for infrastructure assets (Pallot, 1997; Vermeer, Patton and Styles, 2011).

Infrastructure asset is defined by the Organization for Economic Cooperation and Development (OECD) as “the system of public works in a country, state or region, including roads, utility lines and public building - in essence the tangible backbone of essential goods and services underpinning an economy” (OECD, 2021, p. 15). Infrastructure assets are the physical structures and systems owned and operated by government entities and are usually developed to provide essential services to the public and support economic activities. Some common examples of government infrastructure assets include:

- i. Transportation Infrastructure - which facilitates the movement of people, goods, and services within and between regions, including roads, highways, bridges, tunnels, railways, airports, seaports, and public transit systems.
- ii. Utilities Infrastructure - which ensures the provision of essential services like clean water, electricity, gas, and communication services, comprises water supply systems, wastewater treatment plants, electric power grids, natural gas distribution networks, and telecommunications networks.
- iii. iPublic Buildings - which serve various public functions and provide essential services to the community, including courthouses, government offices, schools, libraries, hospitals, prisons, and recreational facilities.
- iv. Water Infrastructure - which supports water storage, supply, and distribution for domestic, industrial, and agricultural purposes involving infrastructure for water management, including dams, reservoirs, canals, pipelines, and water treatment plants.
- v. Water Infrastructure - which supports water storage, supply, and distribution for domestic, industrial, and agricultural purposes involving infrastructure for water management, including dams, reservoirs, canals, pipelines, and water treatment plants.

- vi. Environmental Infrastructure which is designed to manage waste disposal, recycling, and environmental protection, encompassing landfills, recycling facilities, wastewater treatment plants, and pollution control systems.
- vii. Social Infrastructure which provides essential services and supports social well-being within communities, comprising facilities such as schools, hospitals, childcare centres, parks, and community centres.
- viii. Defence and Security Infrastructure - which contributes to national defence, public safety and disaster management, encompassing military bases, defence installations, police stations, fire stations, and emergency response facilities.

As infrastructure assets are quite robust, accounting standards for these assets are somewhat flexible, providing extent for countries to interpret and adapt towards their country's needs. IPSASB has decided that infrastructure assets require no separate definition because the assets are part of property plant and equipment. Nevertheless, IPSASB agreed on the importance of specifying the features of infrastructure assets so that the assets can be distinguished from general property, plant and equipment. Specifying the features of infrastructure assets also helps to avoid complexities in the application and implementation of existing principles.

The most notable accounting standards for infrastructure assets is the IPSAS, which is a set of accounting standards developed by the IPSASB for the public sector, including governments. IPSAS provides guidelines for recognising, measuring, presenting and disclosing infrastructure assets in government financial statements, which cover various aspects of infrastructure accounting, including valuation, depreciation, and impairment. Many countries have adopted IPSAS, including Malaysia.

Several countries which are exemplary in their governments' accrual accounting adoption are also considered excellent in their accounting practices related to government infrastructure assets. Amongst those countries are Australia, New Zealand, United Kingdom, Canada and Singapore. These countries are recognised for their transparent, consistent and comprehensive accounting practices for government infrastructure assets. They prioritise accurate valuation, depreciation estimation, disclosure, and effective asset management systems to ensure proper stewardship of public infrastructure.

In the United States, Governmental Accounting Standards Board (GASB) is the responsible body to create accounting and financial reporting standards for state and local governments. GASB Statements, for example, GASB Statement No. 34 and GASB Statement No. 42, provide guidance on accounting and reporting for infrastructure assets. These standards require governments to report infrastructure assets in their financial statements, including valuation, depreciation and disclosure of condition assessment information. In the United Kingdom, central government departments use the Financial Reporting Manual (FReM) for financial reporting. The FReM provides guidance on the accounting treatment of infrastructure assets, which covers recognition, measurement, depreciation and disclosure requirements.

In Australia, the Australian Accounting Standards (AAS) issued by the Australian Accounting Standards Board (AASB), provide accounting guidance for both private and public sectors in Australia. AASB 116 - Property, Plant and Equipment, and AASB 13 - Fair Value Measurement

are relevant accounting standards for government infrastructure assets. Therefore, Australia has a comprehensive accounting framework for infrastructure assets. The AAS provides guidance on recognition, measurement, and disclosure of infrastructure assets. The country has well-defined asset management plans, detailed asset registers and regular condition assessments. The use of advanced asset management systems and extensive reporting enhances transparency and accountability.

New Zealand follows the IPSAS for its government accounting, including infrastructure assets. The government has a robust infrastructure asset management system which includes regular condition assessments, comprehensive asset registers and long-term planning. New Zealand's accounting practices focus on accurate valuation, depreciation estimation and disclosure of infrastructure assets. The United Kingdom has a strong accounting framework for government infrastructure assets. The FReM provides guidance on recognition, measurement and disclosure of infrastructure assets. The United Kingdom Government has implemented comprehensive asset management systems, including condition assessments and performance indicators to ensure effective management of infrastructure assets.

Canada follows the Canadian Public Sector Accounting Standards (PSAS) for accounting in the public sector, including infrastructure assets. The country has established rigorous asset management practices, including regular condition assessments, performance evaluations, and long-term planning. Canada's accounting practices emphasise accurate valuation, depreciation estimation and disclosure of infrastructure assets. Singapore has well-developed accounting practices for government infrastructure assets. The country follows the IPSAS and has established a robust asset management system. Singapore emphasises accurate measurement and valuation of infrastructure assets, regular condition assessments and effective long-term planning to ensure sustainability and proper maintenance of infrastructure assets.

Specific reporting practices for government's infrastructure assets vary across countries, depending on the adoption of specific reporting framework such as the IPSAS, GASB standards or country-specific regulations. Nevertheless, the reporting is usually done through various financial statements and reports, such as:

- i. Statement of Financial Position (Balance Sheet): Infrastructure assets are typically reported on the balance sheet as a component of PPE. Information on the carrying amount of infrastructure assets, including their historical cost, accumulated depreciation and net book value is provided in the balance sheet.
- ii. Notes to the Financial Statements: Detail disclosure is also made in the notes to the financial statements regarding infrastructure assets. Disclosures include the valuation methods used, depreciation policies, useful lives, major categories of infrastructure assets, significant accounting judgements, and any impairment assessments conducted.

- iii. Management Discussion and Analysis (MD&A): Some governments provide an MD&A section within their financial reports. This section will include discussions on infrastructure assets, such as changes in the condition or performance of assets, major projects completed or underway, funding arrangements and long-term infrastructure plans.
- iv. Infrastructure Asset Registers: Many governments maintain comprehensive infrastructure asset registers, which provide detailed information on each asset, including its location, characteristics, condition, maintenance history, and estimated useful life. Although these registers may not be part of the financial statements, they are considered a supporting documentation for accurate reporting.
- v. Performance Reports: Governments may issue separate performance reports or infrastructure asset management reports to provide more specific information on the condition, performance and future plans for infrastructure assets. These reports may include infrastructure investment strategies, asset maintenance plans, performance indicators and assessments of service delivery provided by the infrastructure assets.
- vi. Specialised Reports or Audits: In some cases, governments may commission specialised reports or audits, specifically focusing on infrastructure assets. These reports may assess the condition and performance of assets, evaluate their financial sustainability or provide recommendations for improvement in asset management practices.

3.0 Methodology

To achieve the aim of this paper, data were gathered through reviews of extant literature, accounting standards and guidelines by the AGD. These included Interpretation of Accounting Policies, *Garis Panduan Pelaksanaan Perakaunan Akruan Bil. 1 Tahun 2013 - Aset Kerajaan Asas Akruan*, *Surat Pekeliling Akauntan Negara Malaysia (SPANM) Bil. 3 Tahun 2022 - Tatacara Perakaunan Aset Bukan Kewangan Kerajaan* and *Manual Perakaunan Akruan*. In addition, public sector accounting standards and guidelines in other countries were also examined.

4.0 Issues in Accounting for Governments' Infrastructure Assets

Concerns over governments' accounting for infrastructure assets is substantial because of a large proportion of government's budget and spending goes to the assets (IFAC, 2023). Accurate accounting treatments and reporting of infrastructure assets is extremely important due to the political, social and economic importance of public infrastructure assets, even more so with the implementation of accrual accounting in the public sector (Ivannikov and Dollery, 2020; Pilcher, 2005). Heightened public concerns on the deterioration and maintenance of these public assets have further exacerbated the need for accurate reporting of these assets (IFAC, 2023). Even after more than 30 years of debate, the challenges in determining the best accounting treatments for the assets are still unresolved and no consensus is reached (Lombardi, Schimperna, Smarra and Sorrentino, 2021; Simpkins and Jensen, 1995; Micallef, Sutcliffe and Doughty, 1994; Pallot, 1994; Rowles, 1992).

Furthermore, the absence of separate global public sector accounting standards for infrastructure assets has compounded the challenges in accounting for infrastructure assets. Currently, IPSAS 17 - Property, Plant and Equipment serves as the relevant accounting standards for infrastructure assets. However, various parties had challenged the suitability of IPSAS 17. For example, the European Commission commented that the standard is “problematic for the accounting and measurement of public infrastructure” (European Commission, 2013, p. 113). Consequently, in 2015 IPSASB decided to initiate a project brief to revise IPSAS 17 to provide additional guidance as well as clarity to accounting treatments for infrastructure assets (IPSASB, 2015). However, due to many technical difficulties in recognition, depreciation and measurement, the project was put on hold in December 2017. The project was reactivated in June 2019, with a new task force. The aim of the task force is to identify challenges and difficulties in applying the principles of IPSAS 17 to infrastructure assets and to develop an exposure draft and recommendation for revising IPSAS 17. Amongst the issues highlighted by the task force were definition, control of infrastructure assets, recognition of capital vs maintenance expenditure; measurement of initial value, depreciation, componentisation and disclosures (IPSASB, 2019a). In May 2023, IPSASB announced that IPSAS 17 was to be replaced by a new standard IPSAS 45 by 2025.

Issues involving recognition, measurement and disclosure of assets and liabilities are found to be one of the most difficult issues to resolve (Caruana, 2021). Difficulties in reporting assets and liabilities, including infrastructure assets, were found to be one of the stumbling blocks to full implementation of accrual accounting in many countries (Dollery et al., 2013; Ivannikov and Dollery, 2020; Pilcher, 2005). The common problems in accounting for infrastructure assets vary from identifying the assets, locating the assets, determining control/ ownerships, estimating initial values and subsequent maintenance costs, and many more. Upon reviewing previous published research on the challenges in accounting for infrastructure assets in the public sector, it can be summarised that the main obstacles are related to definition; control; valuation; componentisation; depreciation and useful life; deferred maintenance; capitalisation policies; intangible assets; and reporting and disclosures.

4.1 Definition and Control

4.1.1 Definition

The first challenge in accounting for infrastructure assets is to determine what constitutes infrastructure assets. This problem is further compounded by the absence of specific accounting standards for infrastructure assets. Internationally, the accounting standard for PPE, IPSAS 17, is used as guidance for accounting for infrastructure assets. Generally, infrastructure assets have been defined as assets “(a) held for use in the production or supply of good services, for rental to others, or administrative purposes; and (b) expected to be used during more than one reporting period” (IPSASB, 2020a, para 13). In Para 21, IPSASB (2020a) stated the features of infrastructure assets as immovable, highly specialised part of a system or network, and have no alternative or restricted uses.

The definition of infrastructure assets has been further refined by certain bodies. For example, the Canadian Institute of Chartered Accountants (CICA) defined infrastructure assets as “systems used for utility operations including water and sewer systems, hydro-electric systems and telecommunications; roads including highways, other roadways, bridges and traffic control;

transportation including transit systems, airports, seaports, tunnels and seaways; and flood control including dams, canals, locks and drainage” (CICA, 2002, p. 2). Fourie (2006) opined that infrastructure assets might be viewed from a social point and could include schools, libraries, universities, clinics, hospitals, courts, museums, theatres, playgrounds, parks, fountains and statues. On the other hand, the assets have been defined as “all non-current assets comprising the public facilities that provide essential services and enhance the productivity capacity of the economy” (Tasmania Treasury and Finance, 1995, para A2). The identified assets include roads, bridges, railroads, water supply and sewerage systems, power generation and distribution networks.

Most countries, except for the United States, do not have a specific definition for infrastructure assets but provide some examples of the assets. In essence, it could be concluded that there is a need for a universally accepted definition of infrastructure assets for the public sector to facilitate more accurate accounting treatments and reporting towards better accountability, governance and improved decision making.

4.1.2 Control

To establish control of infrastructure assets is another important issue in identifying parties responsible for recording the assets in their annual financial reporting (Farias, 2020). IPSASB (2019b, pp. 6-7) noted that the complexity in establishing control for infrastructure assets could be due to their unique features as follows:

- i. Infrastructure assets that are legally owned by other entities may be managed or operated by another entity.
- ii. Infrastructure assets may be jointly controlled by two or more entities. Land and infrastructure assets acquired together may be controlled or operated by different parties.
- iii. Access rights; right of ways; or easements are granted over the land for transportation purposes, electrical transmission lines and oil and gas pipelines, which may or may not revert to its original owners.
- iv. Infrastructure assets belonging to the central government are usually transferred to other public or private sector entities, which control the use of the infrastructure assets and can derive economic benefit or service potential from them.
- v. Infrastructure assets may cross more than one jurisdiction.

In the case of concession infrastructure assets, the issue of control is further deliberated by IPSASB as the current standard does not provide sufficient guidance. Control could not be clearly established, especially in cases when the grantor and operator are difficult to identify in the concession arrangement (IPSASB, 2019b, pp. 6-7). This identification is important because the assets are owned by grantor, and thus will be recognised in the grantor’s financial statements while operator operates and maintains the assets. Complications may also arise because the grantor does not have the capital expenditure and maintenance information as the assets are operated and maintained by a third party.

In determining control of infrastructure assets, Farias (2020) proposes the following practical approach as possible solution (Figure 1):

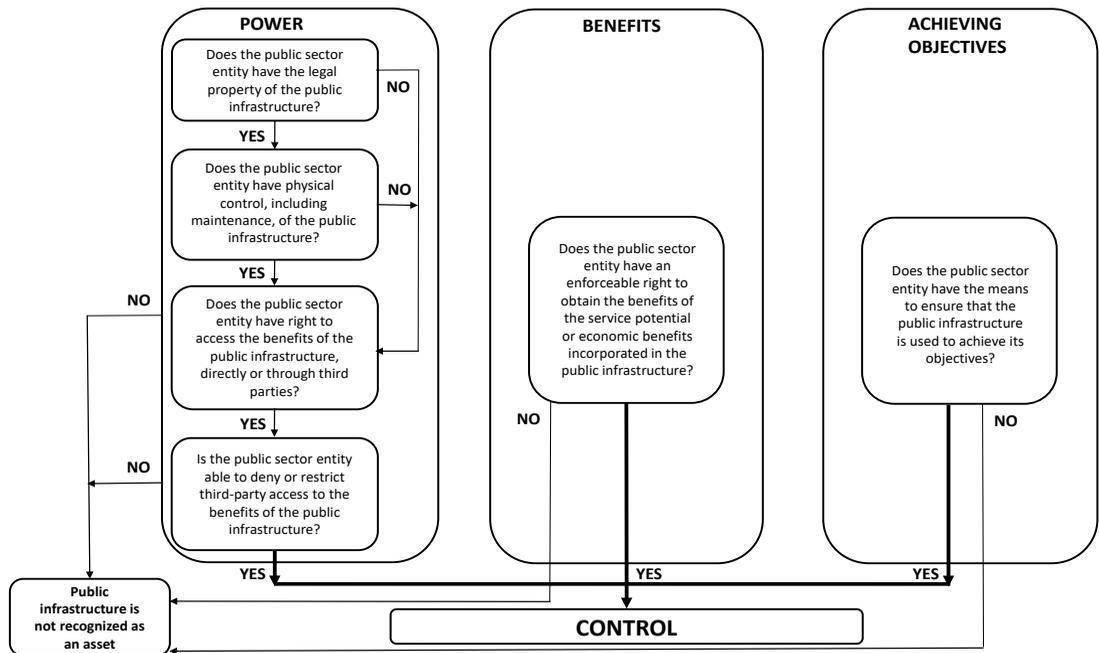


Figure 1: Practical approach for the evaluation of control. (Farias, 2020, p. 538)

4.2 Recognition and Measurement

Governments around the world allocate a huge portion of their budgets for infrastructure assets to spur economic growth and serve their citizens. Félio (2006) noted that developed countries tend to face more challenges with maintenance costs of existing infrastructure assets, while developing countries are more involved in new constructions. As infrastructure assets have longer service life, distinguishing capital and maintenance is critical in determining capital costs against expenditure. IPSASB recognised the lack of clear guidance on accounting for infrastructure assets in IPSAS 17 and embarked on a project with the objective “to develop enhanced guidance clarifying the recognition and measurement of infrastructure and heritage assets that are property, plant, and equipment” (IPSASB, 2022, p.1). Lombardi et al. (2021) asserted that it has been widely recognized that clear policies regarding what costs should be capitalised and what should be expensed during the construction or acquisition of infrastructure assets are critical in the recognition of infrastructure assets. Clearer guidance on which costs can be recognised as direct construction costs, overheads or financing costs can be subjective and require consistent application across different projects to ensure consistent capitalisation policies. This is relevant to the call for greater transparency in reporting, government faithful representation of spending on infrastructure assets as well as to ascertain the need for maintenance of those assets (IFAC, 2023). In addition, specific policies or guidance on how to account for additional costs to maintain and/ or upgrade the infrastructure assets are important. The practices observed in different countries are varied. The following subsections cover detailed discussions related to recognition and measurement.

4.2.1 Determination of Initial Value

IPSAS 17 states that the initial value infrastructure assets can be recorded either at historical cost or current value. Determining the accurate value of government infrastructure assets is a complex exercise since infrastructure assets, such as roads, canals, bridges, and utilities, have very long useful lives and often involve huge initial costs. Determination of the value of these assets requires consideration of factors, such as construction costs, depreciation and estimated future maintenance expenses. Moreover, the process can be challenging because to acquire reliable valuation figures can be challenging and could potentially lead to inaccuracies in financial reporting (Ivannikov and Dollery, 2020).

4.2.2 Subsequent Measurement and Depreciation

Subsequent measurement of infrastructure assets represents another challenge in accounting for infrastructure assets. Specifically, IPSASB (2019b) highlighted the challenges in subsequent measurement, such as difficulties in deciding subsequent measurement bases, complexity in determining the threshold of subsequent costs, lack of guidance to distinguish subsequent costs and inadequate guidance for deferred maintenance costs.

Another challenging issue is to estimate the depreciation and useful life of government infrastructure assets. The unique nature of infrastructure assets, including very long service life which can extend to several decades, as well as uncertainty and subjectivity in predicting the future condition and lifespan of the assets can further complicate the issue. Therefore, appropriate depreciation method and useful life are pivotal for accurate cost allocation.

Furthermore, the issue of deferred maintenance, where infrastructure assets require repairs or upgrades beyond their typical maintenance schedules due to inadequate funding or budget constraints, can be perplexing. This is especially so in the case of concession infrastructure assets where maintenance expenditures are incurred by the operator of the assets not the grantor/ owner. Questions arise on determining proper treatments for these deferred maintenance costs and identifying the impact on asset values and depreciation calculations. The assets are recognised by the grantor who are not privy to the information related to the deferred maintenance costs incurred by the operator. In such cases, the grantor would not be able to account for deferred maintenance costs, which can lead to understated asset values and inaccurate financial statements.

4.3 Componentisation

Componentisation refers to “disaggregation of asset into different parts, with several useful lives and replacement costs” (IPSASB, 2019a, para 4.15). Componentisation enables the distinction between infrastructure assets and other long-term assets, which would have significant effects on their depreciation methods. IPSAS 17 states that only the component approach is to be applied. However, the practices worldwide vary (refer to Table 1). Certain countries, including New Zealand, adopt only the component method, while Canada permits both the component approach and whole asset approach. On the other hand, other countries, such as Australia, Austria, France and the US do not adopt the component approach (Lombardi et al., 2021).

However, in view of the complex nature of infrastructure assets, IPSASB in its subsequent review, stated that componentisation approach may not be suitable for infrastructure assets. The following statement was issued to support the view: “There can be the diversity of practice in what constitutes a component... Unnecessary detailed disaggregation of a network can lead to increased costs, as each component has to be valued and has a separate useful life” (IPSASB, 2019a, para 4.15).

On the other hand, CICA (2002) opined that componentisation is necessary for infrastructure assets as it would bring several benefits in managing the assets. Detailed information on each component would provide relevant information for better management and control of the assets.

4.4 Reporting and Disclosure

IPSAS 17 requires governments to disclose relevant information about their infrastructure assets in financial statements and other reports. Despite that, the accounting practices across countries vary, as shown in Table 1. The table summarises the accounting treatments (definition, recognition, measurement, measurement-component approach, disclosure) for infrastructure assets as required by IPSAS 17 and as practised in several countries worldwide, namely Australia, Austria, Canada, France, the United States, and New Zealand. The unique nature of infrastructure assets has resulted in complexities in recognition, valuation and disclosures. This is further exacerbated by lack of specific accounting standards for infrastructure assets, resulting in difficulties in establishing transparent and comparable information, which caused inconsistencies in reporting and disclosures across different countries.

Table 1: Accounting for Infrastructure Assets by the Main Standard Setters Worldwide

	Definition	Recognition	Measurement	Measurement-Component Approach	Disclosure
IPSAS 17	No specific definition, only characteristics usually displayed by infrastructure assets are listed. Some examples of infrastructure assets are provided.	General property, plant and equipment recognition criteria are to be applied: (i) probable economic benefits; (ii) reliably measured.	Infrastructure assets are initially measured at cost (in exchange transactions) or fair value (in non-exchange transactions). Either the cost or the revaluation model can be applied for subsequent measurement purposes.	Only the component approach is to be applied.	General property, plant and equipment recognition criteria are to be complied with.

	Definition	Recognition	Measurement	Measurement-Component Approach	Disclosure
CGAS 6 (France)	No specific definition. Three specific categories of infrastructure assets are identified.	General property, plant and equipment recognition criteria are to be applied: (i) controlled; (ii) reliably measured. Additional guidance is provided for determining economic ownership of the infrastructure assets and for the recognition of successive expenditures.	Infrastructure assets are initially measured at cost (in exchange transactions) or fair value (in non-exchange transactions). Only the cost model is used for subsequent measurement purposes.	The component approach is not applied.	General property, plant and equipment recognition criteria are to be complied with. Disaggregation of the infrastructure assets in the notes.
National rule (Austria)	No specific definition. Two specific categories of infrastructure assets are identified.	General property, plant and equipment recognition criteria are to be applied: (i) probable economic benefits; (ii) reliably measured. Additional guidance is provided for the recognition of successive expenditures.	Infrastructure assets are initially measured at cost. Only the cost model is used for subsequent measurement purposes.	The component approach is not applied.	General property, plant and equipment recognition criteria are to be complied with. Disaggregation of the infrastructure assets in the notes.
GASB 34 (United States)	A more specific definition is provided. Some examples of infrastructure assets are provided.	General property, plant and equipment recognition criteria are to be applied.	Infrastructure assets are initially measured at cost. 'Modified approach' can be used for subsequent measurement purposes.	The component approach is not applied.	General property, plant and equipment recognition criteria are to be complied with. Description of 'modified approach', if any, in the notes.
PSAB section 3150 (Canada)	No specific definition. No examples of infrastructure assets are provided.	General property, plant and equipment recognition criteria are to be applied.	Infrastructure assets are initially measured at cost. Only the cost model is used for subsequent measurement purposes.	Either component approach or whole asset approach can be applied.	General property, plant and equipment recognition criteria are to be complied with.

	Definition	Recognition	Measurement	Measurement-Component Approach	Disclosure
AASB 116 (Australia)	No specific definition. No examples of infrastructure assets are provided.	General property, plant and equipment recognition criteria are to be applied: (i) probable economic benefits; (ii) reliably measured.	Infrastructure assets are initially measured at cost (in exchange transactions) or fair value (in non-exchange transactions). Either the cost or the revaluation model can be applied for subsequent measurement purposes.	The component approach is not applied.	General property, plant and equipment recognition criteria are to be complied with.
PBE IPSAS 17 (New Zealand)	No specific definition, only characteristics usually displayed by infrastructure assets are listed. Some examples of infrastructure assets are provided.	General property, plant and equipment recognition criteria are to be applied: (i) probable economic benefits; (ii) reliably measured.	Infrastructure assets are initially measured at cost (in exchange transactions) or fair value (in non-exchange transactions). Either the cost or the revaluation model can be applied for subsequent measurement purposes.	Only the component approach is to be applied.	General property, plant and equipment recognition criteria are to be complied with.

(Source: Lombardi et al., 2021, p. 209)

5.0 Current Practice of Accounting for Infrastructure Assets in Malaysia

This section provides an overview of current practice on accounting for government infrastructure assets in Malaysia. The discussion is based on information available from archival search which include documents available on the AGD's website. There are several studies in Malaysia which reported on issues faced in government's asset management and accounting, but close to none reported specifically on the infrastructure assets. Although the Malaysian federal government has implemented the accrual basis MPSAS since 2018, there are still issues related to accounting treatments and reporting (Abu Hasan et al., 2022). Syed Ali, Sheung and Mohd Razali (2019) who studied the asset management system (adoption of MPSAS 17, IPSAS 21, and IPSAS 26) at public universities reported that MPSAS 17 had not been strictly adhered and the recognition were still at initial stage, which was possibly due to the five-year transitional provision given. Abdullah and Muhammad (2020) reported the opening balance of assets were overstated because depreciation was not accounted for during data migration into the Integrated Government Financial Management Accounting System (iGFMAS) as of July 2019. Opening balance of the asset was imported directly from the previous asset information system known as Movable Asset Management Monitoring System (SPA) and Immovable Asset Management system (mySPATA). The asset management information system is commendable because it supports the asset management of

government agencies in terms of registering, monitoring the movement of assets, maintenance and disposal records (Mahadi and Hussin, 2007). However, according to Basnan et al. (2013), mySPATA has limited capacity, it records assets only by categories without the maintenance costs or depreciation which leads to difficulty in determining the actual value of assets.

Accounting for infrastructure assets follows the requirements of MPSAS 17. In addition, guidelines on infrastructure assets can also be found in various circulars, including *Garis Panduan Pelaksanaan Perakaunan Akruan Bil. 1 Tahun 2013 - Aset Kerajaan Asas Akruan* and *SPANM Bil. 3 Tahun 2022 - Tatacara Perakaunan Aset Bukan Kewangan Kerajaan*.

The management of infrastructure assets is placed under various departments. As stated in *SPANM Bil. 3 Tahun 2022*, infrastructure assets and buildings are under Public Works Department, sewerage is under Sewerage Services Department while water is under Irrigation and Drainage Department. When the government decided to implement accrual accounting, a taskforce was formed. The taskforce comprising representatives from the AGD, accountants and technical personnel from the relevant departments. The technical personnel were responsible for determining the value of government's assets.

One of the main issues in accounting for infrastructure assets is lack of clarity in the definition of the assets, which is what constitutes infrastructure assets (IPSASB, 2019a; European Commission, 2017). MPSAS 17 (para 21) on PPE stated that while there is no universally accepted definition of infrastructure assets, the assets category comprises some or all the following characteristics:

- i. They are part of a system or network.
- ii. They are specialised in nature and do not have alternative uses.
- iii. They are immovable.
- iv. They may be subject to constraints on disposal.

In Malaysia, infrastructure assets are grouped under immovable non-financial assets and defined as: "A basic facility construction that forms a network system to provide services to the community, which include roads, water, sewerage and other infrastructure such as airports, ports, jetties, electrical power supply systems, telecommunication systems and power station complexes" (AGD, 2022, p. 38).

AGD issued the Federal Government Accrual Accounting Manual to provide further guidelines for the implementation of accrual accounting. However, the Accounting Manual for Property, Plant and Equipment (MPA 5, 2021) does not provide any references to infrastructure assets. The *Garis Panduan Pelaksanaan Perakaunan Akruan Bil. 1 Tahun 2013* provides guidelines on useful life of assets for depreciation purposes for various infrastructure assets, but no definition is given. Infrastructure assets are also not specified in the Interpretation of Accounting Policies (Revised 2019) issued by the AGD.

Abu Hasan et al. (2022) studied the state governments adoption of MPSAS has reported several issues or challenges with regard to valuation of the assets, especially in specific cases whereby the assets are operated by a third party (concession assets), assets which are

taken over from private/ local authority/ state government - determination of initial value and the service life, lack of information on additional costs incurred by the third party for repairs and maintenance, asset impairment and asset disposal.

Currently, straight line method of depreciation is used by the government, except for federal road infrastructure assets which are measured using the condition-based method (CBM) based on the Federal Road Accounting Policy (FRAP). Specifically, according to FRAP:

Under this method, depreciable amount of federal roads assets shall be allocated on a systematic basis over their best estimates of useful life. CBM of FRAP are calculated based on actual condition of the road at the reporting date using road quality report issued by the Ministry of Work. The depreciation rate is measured by calculating the difference between the maximum quality and the actual quality reported based on road quality report. (Appendix A of the Interpretation of Accounting Policies Revised, 2019).

In determining depreciation, the government must decide on the useful life of infrastructure assets. The schedule provided in the *Garis Panduan Pelaksanaan Perakaunan Akruan Bil. 1 Tahun 2013* shows useful life ranges between 5 and 100 years. Facilities such as recreational and parks have a useful life of 5 years to 10 years, while facilities related to land, air and water transports, irrigation, flood control, sewerage can go up to 100 years.

Based on the above discussion, definitions of the infrastructure assets have been wide and open for inclusion of assets that are not significant in value or that should belong to other categories of property, plant and equipment. Furthermore, specific guidance to determine the useful life of infrastructure assets are unavailable which could lead to a variety of interpretation and mislead the measurement of the assets. Consequently, there could be inconsistency in the accounting and reporting of infrastructure assets across different government ministries and agencies.

6.0 Conclusion

Issues related to accounting for infrastructure assets are common in many public sectors, including Australia, Austria, Canada, France, New Zealand and the United States. Currently, there are no specific accounting standards for infrastructure assets, as they are considered to be part of property, plant and equipment. Most standards adopted by various countries do not provide a clear definition of infrastructure assets, but only characteristics and examples. Guidelines on recognition and measurement that are too general may result in inconsistent accounting treatments over time and incomparable information across governments.

This paper reports the findings from an archival search of published studies and official documents, which are only parts of a larger study on accounting issues related to infrastructure assets in Malaysia. The next phase of this study will include empirical findings from in-depth interviews with relevant stakeholders and benchmarking of best practices around the globe.

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Management Accounting in the Malaysian Public Sector: Analysing the Adoption of Financial and Risk Analysis

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Abstract

Purpose: This paper aimed to analyse the introduction of financial analysis and risk management for internal decision-making in the Malaysian public sector and determine the limitations/ gaps as well as areas for improvement.

Design/ Methodology/ Approach: The paper was based on the analysis of documents, government circulars and guidelines pertaining to financial statement analysis and risk management, including interviews with officers at two ministries.

Findings: Policy and guidelines were established for financial analysis and risk management in the Malaysian public sector. However, given the complexities and unique context of each ministry, there is a need for clearer and more context-specific guidelines regarding financial and risk analysis. It is also crucial that the conducted financial and risk analyses are relevant and meet the specific needs of public sector entities. The usefulness of information relies on a comprehensive understanding of the context and types of decision needed. Therefore, fostering collaboration and engagement between the management accountant unit and other key units within a ministry is crucial to conduct an effective financial and risk analysis.

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Originality/ Value: This study offered insights into the financial and risk analysis reporting framework and its implementation in the Malaysian public sector.

Keywords: Management accounting, public sector accounting, financial statement analysis, risk management, public sector accountants.

1.0 Introduction

Public sector organisations (PSOs) are currently operating in an era of broadening and blurring organisational boundaries, increased citizen demand for accountability and better governance, rapid technological advancement, and continual uncertainties - arising not only from the COVID-19 pandemic, but also from foreign wars, financial austerity and other natural disasters (Grossi & Agento, 2022). Therefore, given this period of uncertainty, financial austerity and resource constraints, appropriate management accounting information and analysis are necessary to enable more informed decisions for policy formulation and implementation (Morales et al., 2014; Grossi & Agento, 2022).

Management accounting (MA) is useful for decision-making support in PSOs through the provision of relevant information and insights that relate to resource allocation and execution of strategic objectives and policies (CGMA, 2014; 2017; Cohen, 2022). MA supports public officers in decision-making by extracting value from information, translating numbers into meaningful narrative analysis, turning information into insights by analysing the impact of outcomes and providing information related to sustainability factors, which are then integrated into business planning and reporting (CGMA, 2014; 2017).

Therefore, MA information reporting is needed for government organisations, specifically in Malaysia as the country is facing a myriad of challenges. Unfortunately, as compared to financial accounting, the role of MA is not well developed in the Malaysian public sector. The Malaysian public sector management accountants have no specific position, even though MA is utilised heavily in reforming the public sector. The most significant MA elements introduced in the Malaysian public sector relate to performance measurement and budgeting plan (Rozaidy & Siti-Nabiha, 2022). However, it is not within the ambit of public sector accountants to be responsible for introducing or overseeing these MA reforms.

Originally, the establishment of accounting is mainly aimed to facilitate parliamentary oversight rather than serving managerial requirements. Since then, the potential role of accounting, specifically management accountants, has become more significant. This is aligned with calls for greater result-based accountability, which were made in conjunction with the demand for efficiency, effectiveness and equity of public service delivery. Moreover, the impact and outcomes of government policies and programmes were increasingly questioned by citizens. Aligned with this, the introduction of a MA section in the accounts division of various ministries could be considered as one of the efforts to promote the role of MA in providing relevant information for decision makers.

The Accountant General's Department of Malaysia (AGD) subsequently issued MA implementation guidelines, specifically related to financial statements and risk assessment

(Jabatan Akauntan Negara Malaysia, 2021). The analysis of the organisation's financial position enables determination of financial strategies as well as gathering information for risk assessment. Given this effort, it is imperative to evaluate both current financial statement analysis and risk management, which have been introduced and adopted. Therefore, this paper has two aims. First is to explain the financial analysis and risk management introduced in the Malaysian public sector. Second is to investigate issues regarding their implementations. The paper is structured as follows. Section 2 provides a literature review related to financial and risk analysis. Section 3 outlines the research approach employed in this paper, while Section 4 discusses the financial and risk analysis practices in the Malaysian public sector. Section 5 addresses the gaps and issues concerning the information usefulness of financial analysis and risk assessment. Subsequently, a brief conclusion for this paper is presented in Section 6.

2.0 Literature Review

Management accountants create value from the provision of timely, relevant and accurate financial and non-financial information, which supports strategic decision-making and implementation (CGMA, 2014). By transforming their analysis into key insights, management accountants provide assessment of the impact of various policies on outcomes. Reporting and financial analysis and strategies and risk management are amongst the MA tools and practices to generate and preserve organisational values (CIPFA, CGMA 2017).

2.1 Analysis of the Financial Statement for Internal Decision-Making

Amongst the reasons for the propagation of the accrual accounting adoption by international bodies is the argument that accrual accounting will facilitate the timely provision of financial information for decision-making purposes (IPSASB: CF-ED 1, 2010; Nogueira et al., 2013). With the availability of accrual-based financial statements, the analysis of these reports can be conducted, providing the top management of PSOs with an overall view of their entities' financial position, and thus aiding them in decisions related to resource allocation as well as addressing political and social matters (Nogueira et al., 2013; 2016; Fuchs et al., 2017). Consequently, the implementation of accrual accounting plays a vital role in fostering more strategically oriented usage of financial data (Fuchs et al., 2017).

Various ways were proposed to conduct analysis of the PSOs financial situation. Such approaches included the use of financial indicators, from basic accounting ratios to the more advanced usage of statistical models (Iacuzzi, 2022). The Canadian Institute of Chartered Accountants model for the analysis of local governments' (LGs) financial conditions was based on three elements (CICA, 2009; Iacuzzi, 2022). First was sustainability, which referred to the LG's capacity to maintain its programmes while adhering to credit requirements, all without increasing its debt burden. Second, was flexibility, which assessed LG's capacity to increase its financial resources in order to manage its growing obligations. Third was vulnerability, which evaluated the extent to which LG relied on resources that were external to its own control.

Nevertheless, it should be noted that in evaluating financial performance there are issues presented by using only financial indicators. This is due to the specific nature of financial information, as it basically involves the examination of historical data. In addition, the

problematic issues of comparing these indicators in different socio-environmental and organisational contexts have also been raised by researchers (Iacuzzi, 2022). For these reasons, the usefulness of financial information, especially to internal users, has been questioned in various empirical research, whereby the financial information provided was unable to entirely fulfil the needs of users (Nogueira et al., 2013; 2016). However, there is some contrasting empirical evidence. For instance, studies which investigated the value of financial reports for senior officers within the Australian Government departments indicated that these officers perceived accrual-based financial reports to be more helpful in facilitating internal decision-making processes as compared to budgetary cash-based accounting (Kober et al., 2010; Adriani et al., 2010).

In view of the pressure on PSOs to achieve more with less resources, the formulation of financial strategies for PSOs is necessary. This partly hinges on their ability to conduct effective financial and risk analysis. Therefore, considering the myriad uncertainties that are confronting PSOs, it is vital for public sector management accountants to integrate financial analysis with risk management and analysis in order to support their decision-making processes. It should be noted that a PSO is different from a private-oriented organisation in terms of conducting an evaluation of its performance and financial situation. In contrast, with profit-oriented organisations - which emphasise financial analysis by using metrics such as profitability, growth and return on assets - PSOs have a broader approach to their analysis (Prowle, 2021). Factors such as the quality of services provided, resource utilisation, and societal impact should also be considered in the analysis of PSOs (Prowle, 2021).

2.2 Risk Management and Analysis

The challenges arising from various simultaneous internal and external crises, such as financial, health and political crises, have underscored the importance of having a long-term perspective for financial reporting as it is crucial for PSOs to consider issues related to financial sustainability over the medium and long-term (Jorge et al., 2023). Consequently, there have been growing demands for management accountants to provide information that assesses the impact of various types of risk - not only financial risk, but also environmental, social and political risks (Jorge et al., 2023; Cohen, 2022). Unlike risk management in business organisations which mainly focuses on managing risks to ensure profitability, the purpose of risk management in PSOs is to guarantee the continual provision of delivery and maintain accountability (Bracci et al., 2021).

Unfortunately, risk analysis and management have represented a neglected part of the management accountants' practice. Collier et al. (2007) highlighted the lack of management accountants' involvement in risk management, which was due to the perception that their accounting skills were seen as limited as compared to the broader insights required to manage risks at the wider organisational level.

Nonetheless, risk management constitutes an important component, and thus a concern for broader MA and control systems (Bhimani, 2009; Soin & Collier, 2013). As noted by Merchant and Otley (2006), risk management is part of management control, together with other elements such as risk management, internal control and performance management.

While traditional MA systems, such as budgetary control and performance management are deemed to be useful in facilitating decision-making and enhancing accountability, they are insufficient in addressing contemporary challenges and uncertainties faced by PSOs (Bracci et al., 2021). Consequently, as noted by Bracci et al. (2021), risk management and analysis have been promoted, so that PSOs can identify the myriad of risks faced, and thus have the flexibility to take action to mitigate their effects.

The importance of risk management and analysis is due to limitations of financial data. Empirical research has shown that new financial information has not been fully aligned with the needs of internal users (Nogueira et al., 2013). Therefore, it was suggested to use voluntary information and make certain modifications to the required budgetary and financial statements in order to further improve the usefulness of financial data for decision-making purposes (Nogueira et al., 2013; 2016). This includes the provision of financial analysis, and the effects of wider types of risk, whether financial, environmental, health, social or political, is of significant importance (Cohen, 2022). Previous research indicated that, in the context of Malaysia, MA played a significant role in risk management. For instance, Abdul Rasid and Abdul Rahman (2009) found that financial statement analysis, which is the ratio analysis, was the element of MA practices that enabled risk management. Other MA practices that were crucial to effectively address operational risks were budgetary control and planning (Abdul Rasid & Abdul Rahman, 2009).

However, regarding this matter there is still lack of awareness about risk management, together with lack of knowledge and skills amongst public managers (Wan Muhammad Ali & Beh, 2019). The study findings by Wan Muhammad Ali and Beh (2019) suggested that risk management must be integrated with the strategic management process in PSOs. Furthermore, the impact of risks could be mitigated with an established risk management plan. Said et al. (2020) surveyed risk management practices amongst department heads in Malaysia's federal ministries. The study findings indicated that the department heads agreed to implement risk management within their respective departments. Nonetheless, the prioritisation of implementation differed, reflecting variations in risk management factors according to their district service schemes (Said et al., 2020).

Previous empirical research had also highlighted the myriad of challenges faced in integrating risk management into PSOs. One of the challenges arose when the risk management team was not integrated or coordinated with other functions of the PSOs, resulting in lack of communication between those involved (Said et al., 2020). Besides the internal factors, the fast-changing external landscape further complicated the efforts of PSOs to mitigate risks in an efficient and effective manner (Bracci et al., 2021). Therefore, risk management and analysis should be supported by integrated management systems and control systems in PSOs. In this regard, MA plays a crucial role by providing the management of PSOs with relevant information to enable them to effectively manage their organisations, and thus facilitating better governance and accountability to society (Bracci et al., 2021).

3.0 Research Approach

A qualitative approach was undertaken in this research to address its objective. Data were collected through interviews and documentary review with accountants and non-accountants in two ministries. Meanwhile, non-accountants who were interviewed comprised

those holding senior positions at the ministries in various functional areas. The accountants interviewed were mainly those from the MA sections of the ministries' accounting divisions. The interviews were supplemented with analysis of government documents and regulations.

4.0 Financial and Risk Analysis Practice in the Malaysian Public Sector

In the Malaysian context, analysing the financial statements of the Malaysian Government involves examining the key financial documents issued by the government, such as the budget and financial statements, which include a statement of memorandum accounts and notes to the financial statement. These statements provide insights into the government's revenue, expenses, assets, liabilities and cash flows.

At the ministry level, requirement for the financial statements analysis arises from Treasury Circular PS 1.3, which outlines the implementation of Management Accounting in Malaysian Federal Government (*Pekeliling Perbendaharaan*, PS 1.3). This circular requires that accountants within the Ministries prepare the Strategic Management Accounting and Reporting (SMART) reports, encompassing four elements of management accounting, including financial analysis and risk assessment. This initiative represents part of the government's efforts under the purview of the AGD, which is aimed at strengthening the public sector MA. The AGD's Guidelines No. 2, 2021 subsequently offer a more detailed explanation of financial analysis and risk assessment tasks to be conducted by accountants and incorporated it in the reports submitted to the top management (Jabatan Akauntan Negara Malaysia, 2021). Therefore, the financial analysis and risk management discussed here relates to that undertaken at the ministry's level, which is to be used for internal decision-making by the top management.

4.1 AGD SMART Report: Financial Statement and Risk Analysis

As per the AGD's guidelines, four components form financial statement analysis in assessing and evaluating accrual accounting-based financial information with the objective to enhance the decision-making processes at the ministries (Jabatan Akauntan Negara Malaysia, 2021). Therefore, the use of financial analysis here is for internal users, and not for external users. The details of the analysis are as follows, based on the AGD's Guidelines No. 2, 2021 (Jabatan Akauntan Negara Malaysia, 2021; pp. 6-10).

a) Trend Analysis

Trend analysis involves the collection of data regarding the same item for several periods of time, such as three or five years, to identify the increasing or decreasing trend of a specific item analysed based on a specific purpose. Trend analysis, amongst its uses, provides basic information related to the performance history of a financial statement item and its changes, whether there is an increase or decrease in a certain period of time; useful information for projections, budget planning and reorganisation of resources (assets, humans, and financial) to implement future programmes or to change a policy and identify financial information that can be linked to effectiveness and efficiency in the ministry's financial management.

The analysis can be divided into two categories. The first is trend analysis for the statement of financial position and its key components, such as revenues, expenditures, assets, liabilities

and equity. The second is trend analysis for the cash flow statement, which involves analysing changes and patterns in the cash flows of an entity over a period of time. This helps in understanding the entity's ability to generate and manage cash, assessing its liquidity position, and identifying any underlying trends or changes that may impact the government's financial position.

b) Ratio Analysis

Ratio analysis is an evaluation of the quantitative relation between two items selected from the financial statements. The guidelines stress that the ratio obtained is not an answer in itself, but an indicator of certain aspects of the ministry's financial management. According to the AGD's guidelines, the objective of the ratio analysis is to evaluate the ministry's financial strengths and weaknesses from certain aspects, such as solvency, liquidity, and leverage; to identify the increase and decrease of indicators to anticipate the ministry's capabilities through appropriate comparisons and to assess the ministry's ability in managing the resources provided. There are five types of ratio outlined in the guidelines that can be used by the ministry to evaluate its financial abilities, namely the activity ratio, solvency ratio, debt ratio, efficiency ratio, and liquidity ratio.

c) Analysis of Variance

Variance analysis is a comparison of quantitative data for a financial statement item between the actual achievement and target set within a certain period. The guidelines indicate that variance analysis is used to identify significant differences between actual achievements and targets; to identify the causes of variances and improvement actions that must be implemented in line with the ministry's direction; and to provide basic information in making projections and future budget planning.

d) Qualitative Data Analysis of Financial Statements

The government will use the qualitative data analysis of financial statements to examine intangible information that cannot be measured numerically. Most data for qualitative analysis will be extracted from notes to the financial statements and other related government documents. The main purpose of this analysis is to help the government to make a more comprehensive interpretation and further improve the usefulness of information reported in the financial statements.

According to the AGD's guidelines, risk management information is to be developed based on the analysis of ministry's financial statements and other relevant information. Consequently, from this analysis, the uncertainties faced by the ministries can be determined, which is whether the risk sources are internal or external factors.

The guidelines explain four steps to evaluate risk and uncertainties:

- i. Identification of risk - identify risk (financial, operational, legal, reputation or image) affecting the financial position and attainment of strategic objectives.

- ii. Measurement of risk - this step involves measuring and assessing the impact of risks and classification of risk from a scale of 1 to 5, from a low to high probability of occurring.
- iii. Mapping of risk matrix - this step maps probabilities of occurrence to the impact of risk on performance, from low to high impact.
- iv. Classification of risk level - once the risk matrix has been mapped, the risk level can be classified into extreme, high, moderate or low risk. Once risk has been assessed and the risk level classified, risk mitigation strategies include action to transfer, avoid, minimise or absorb the risk at a minimal rate. The guidelines make the general statement that risk analysis can also be used as a basis in strategic decision-making, in which it provides a pathway to integrate risk with the strategic management process.

Financial data and non-financial data, including information derived from the ministry's risk management plan, need to be analysed to determine the main risk which could significantly impact the achievement of strategic objectives for the ministries. It is anticipated that the ministries have each developed their own risk management plan in accordance with the guidelines provided by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), specifically the Public Sector Organisational Risk Management Plan (PROSA). Additionally, risk management practice for PSOs can be traced back to the implementation of the Star Rating System by MAMPU. This rating system assesses various management practices, including risk management.

5.0 Gaps and Issues for the Information Usefulness of Financial Analysis and Risk Assessment

The second purpose of this paper is to determine and investigate issues regarding the implementation of financial analysis and risk assessment. Therefore, this section discusses the gaps and issues in regard to the two components. It should be noted that the SMART implementation is in its early stages. For instance, the guidelines were provided in 2021. Therefore, various challenges are expected to be addressed during this initial stage of implementation at the ministry level.

5.1 Issues Related to Financial Analysis

As mentioned, the financial analysis and risk management policies and practices rely significantly on the existence of complete financial statements for the public entities. However, despite all the government's efforts, especially AGD, accrual-based financial statements analysis is far from being complete, and this can be confirmed by referring to the AGD's guidelines. Moreover, enhancement of the guidelines is necessary. Of all financial statement analysis techniques, only two analyses were properly constructed, namely trend analysis and ratio analysis. This was because the two analyses were much easier to construct, with many examples (the private-based financial analysis framework) that can be referred to or followed. For the other two analyses which are required as evidence - especially qualitative data analysis, which has been vaguely constructed - the published AGD management accounting guidelines do not provide details of qualitative analysis measurements that can be used as a template to be followed by a ministry. This situation has become the main challenge for AGD in

terms of constructing and finetuning the variables suitable to be utilised as measurements for non-financial information. Furthermore, variance analysis is also far from clear, as the variance analysis illustrated in the guidelines does not provide a benchmarking reference or parameter that can be used as the main standard of comparison, such as year-to-year comparison variance analysis - involving comparison with other countries' standards which have the same nature in terms of economic and social structure, or International Monetary Fund (IMF) or World Bank standards.

Without a properly established standardised parameter of comparison, it is very difficult for the ministries to measure and compare their performance. In addition, the objective of the implementation of MA is to provide a strategic overview for decision makers. Yet there is no concrete evidence which shows the financial and risk assessments reports prepared by the accountants at the ministries are fully utilised by the top management for strategic decision-making, since the Malaysian Government on its current cash accounting basis uses budgeting as the main parameter for strategic decision-making, especially for fund distribution and development expenditure. Moreover, the intricacies inherent in the ministries require full understanding on the part of the prepares regarding the nature of the ministries and their operational environments. This understanding is crucial in order to ascertain the specific analyses that should be conducted.

It should be noted that PSOs are different from private-oriented organisations in conducting the evaluation of performance and financial situation. In contrast to profit-oriented organisations - which emphasise financial analysis with the use of metrics such as profitability, growth and return on assets - PSOs have a broader approach to their analysis (Prowle, 2021). Factors such as the quality of services provided, resource utilisation and societal impact should be considered in the analysis of PSOs (Prowle, 2021). As a result, for PSOs, both financial and economic analysis should also be considered.

5.2 Issues Relating to Risk Assessment and Management

Proper assessment of risk is necessary in regard to risk analysis and strategies, because the Malaysian public sector is currently undergoing significant challenges precipitated by technological advances, health and financial crises, as well as other forms of uncertainties. Therefore, risk management and analysis have become more crucial for public sector decision-making and resource allocation. As highlighted in several empirical research studies, organisational accountability and governance could be enhanced through risk management practices, which are driven by PMS use with the ultimate aim of achieving organisational objectives (Abu Bakar et al., 2016; 2019).

However, even though risk management guidelines were implemented, there is still a lack of awareness about risk management, which is further compounded by lack of knowledge and skills amongst public managers (Wan Muhammad Ali & Beh, 2019). Therefore, risk assessment seems to be heavily oriented towards financial risks in the SMART reporting framework. This is not surprising given that risk analysis and assessment, especially when not related to financial risk, is not within the traditional purview of public sector accountants. Moreover, there appear to be elements of fragmentation between various units and departments in regard to risk analysis assessment at ministries.

Even though the AGD's risk assessment guidelines follow a systematic approach in managing risk and provide a pathway to integrate risk into the strategic management process, the AGD's guidelines on the assessment of risk seem to be quite loose and too general, which consequently results in a simplistic assessment of risk. The guidelines for risk assessment are also seen to be quite superficial and very much less detailed. This might be because the guidelines for risk management for the public sector have been pioneered by MAMPU for quite some time. MAMPU released the PROSA in 2012. There is a possibility that AGD wishes to avoid the duplication of guidelines on risk. Nevertheless, little is known about this possibility, and more detailed guidelines and clearer directions on risk management and analysis, along with better coordination between various units on risk management and assessment, are needed.

Moreover, the guidelines state that potential risks are identified after the analysis of the financial position is completed. This could justify for incorporating risk assessment guidelines into the financial statement analysis. However, this raises the concern that risk identification and assessment will be heavily oriented towards financial risk. This in turn raises the issue regarding whether risk assessment is linked with an organisational strategy and the impact of risks on organisational goals and performance.

Public officers' understanding of objectives and importance of risk management has contributed to challenges in undertaking risk assessment. Enhanced understanding is required regarding the importance of financial and risk analysis and how this analysis is vital for service delivery to society as well as the achievement of PSOs. Therefore, the coordination of various units responsible for risk management and assessment, such as those responsible for strategic planning, resource allocation and MA, should be further improved for more effective risk assessment, mitigation and management to be employed. In addition to providing clearer and more contextual guidelines for ministries, it is vital to ensure that the financial and risk analysis conducted is useful for decision makers, whereby the information is relevant and tailored to the ministries' specific needs and context. Therefore, this is not only an issue of analysing the financial position of the ministry in question, but also about offering a comprehensive view of the organisational financial and non-financial performance. Furthermore, it involves the communication of prescriptive and predictive insights, which assist in the formulation of financial strategies for the ministry.

A good MA report and analysis would not be useful if the information provided were not utilised by policy makers and implementers. If a public officer deemed the MA reports to be of limited value, then the objective of reforming the public sector to achieve effectiveness, efficiency and equity in public services would be undermined. Usefulness of information would depend on the context and complexities of ministry involved, as well as the types of decisions made at the organisation. Therefore, it is vital for management accountants to comprehend the decisions that need to be made in organisations. Such an understanding would assist them in providing useful information to decision makers, and thus result in decision-driven data and analysis. In so doing, a comprehensive explanation of the observed financial situation and risk evaluation could be offered.

In order to offer insights regarding financial and risk situations, management accountants need to engage and collaborate with other key units in the ministries. The MA unit in the ministry in question should also be able to communicate insightful financial and risk analysis, which is

decision-relevant, timely and useful (CGMA/ AICPA, 2017). In so doing, the role and technical and non-technical competencies of management accountants in the public sector need to be enhanced in order to achieve full value from the public sector.

6.0 Conclusion

The Malaysian Government has implemented various reforms in the public sector and utilised MA as a tool to support and sustain these reforms. One of the MA practices used is financial and risk analysis, which is crucial in developing financial strategies for an organisation, as well as its strategic implementation and reorientation. In this context, this paper discusses the implementation of financial and risk analysis within the ministries. Consequently, it offers insights regarding the development of management accounting in the Malaysian public sector, specifically in the context of analysing and reporting information for internal decision-making processes. Therefore, it is noted that to conduct a successful analysis, management accountant's role and competencies must be strengthened so that decision-driven analysis can be conducted and the provided information is deemed useful by public sector decision makers.

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