



JABATAN AKAUNTAN NEGARA
MALAYSIA

IPN JOURNAL

OF RESEARCH AND PRACTICE IN PUBLIC SECTOR ACCOUNTING AND MANAGEMENT

VOLUME 11, NO. 1, 2021

Published by
Institut Perakaunan Negara
Jabatan Akauntan Negara Malaysia
ISSN 2180-4508

ISSN 2180-4508



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**IPN JOURNAL OF RESEARCH AND PRACTICE
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Issues and Challenges in Implementing International Public Sector Accounting Standards (IPSAS)

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<https://doi.org/10.58458/ipnj.v11.01.01.0067>

Received: 30 June 2021

Reviewed: 21 July 2021

Accepted: 24 September 2021

Abstract

Purpose: This paper aims to identify the prerequisites as well as the issues and challenges in implementing the accrual basis International Public Sector Accounting Standards (IPSAS).

Methodology/Approach: Using the archival approach, this paper presents a review of past studies and published information on the issues and challenges faced by various developing countries in adopting IPSAS.

Findings: The challenges faced by countries in adopting IPSAS can be classified into three categories: (1) Resources which include a lack of competent accounting and finance staff, and a lack of IT facilities and IT support; (2) Accounting and reporting issues related to difficulties in the recognition and measurement of assets, liabilities, revenue and expenses; and (3) Top management commitment in ensuring successful change management programmes.

Research Limitations/Implications: This paper outlines the results of the preliminary phase, i.e., a review of previous studies, before a study to examine the issues and challenges in the adoption of accrual accounting and the Malaysian Public Sector Accounting Standards (MPSAS) in state governments in Malaysia is undertaken. Thus, the discussion in this paper is limited to the issues and challenges in adopting IPSAS.

This article is part of a research on Implementation of Accrual Accounting in the Malaysian State Governments, supported by the Accountant General's Department of Malaysia through *Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Bil. 1 Tahun 2021* (JANM.IPNC PD.100-3/3/2 Jld. 2(4)).

Practical Implications: This study shall provide guidelines for Malaysian state governments in promoting successful implementation of MPSAS.

Originality/Value: This paper provides the basis for the next phase of the study on state governments which includes questionnaire surveys and interviews.

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

Introduction

In 2010, the Malaysian government introduced the New Economic Model (NEM) 2011-2020 with the objectives of producing “high skill human capital, efficient public services, reinvigorated private sector and equal opportunity for all Malaysian” (National Economic Advisory Council, 2010, p. iii). One of the strategic reform initiatives (SRIs) under the NEM aimed to strengthen the public sector (SRI 4) through several policy measures. Accrual accounting is one of the policy measures for the transformation with the focus on facilitating asset-liability management in the public sector. As many of the government’s assets and liabilities are long term in nature involving very significant amounts, good asset-liability management is important for public finance sustainability. A study conducted by Isa, Saleh and Abu Hasan (2013) on the move towards accrual accounting identified factors such as strong support from top management, availability of hardware, readiness of accounting systems, sufficient accounting skills as being among the key success factors. The study also documented the need for enhanced awareness among all the staff and for detailed action plans to be prepared for each organisation. Several initiatives have been undertaken to facilitate accrual accounting implementation in Malaysia since 2011. These included establishing a Government Accounting Standards Advisory Committee (GASAC) to look into existing policies, standards, laws and regulations; conducting a gap fit analysis to plan for effective process and technology; and training to build human resource capacity (IFAC, 2013).

Based on the outcome of the Strategic Reform Initiatives related to Public Finance, the government of Malaysia decided to adopt accrual accounting for the federal government in 2011, with full implementation targeted for the year 2015. State governments were expected to implement accrual accounting after the federal government had done so, with the initial target set for the year 2016. However, the full implementation including producing accrual based financial statements had been postponed several times, one of the reasons being the delay in tabling and getting Parliament approval on the amendments to the Federal Constitution and the Financial Procedure Act (1957). If the amendments to the relevant acts are passed by the Parliament in 2021, the federal government is expected to publish accrual based financial statements in 2022, with the state governments following suit in 2023.

Countries that move from cash to accrual accounting are expected to adopt accrual-based accounting standards such as IPSAS. There are three different ways in which IPSAS can

be used: IPSAS with no modifications; IPSAS modified for the local context; and national standards with reference to IPSAS (IFAC and CIPFA, 2021). According to a report published by the Association of Chartered Certified Accountants (ACCA), “adoption of IPSAS has started to provide significant and common advantages across the public sector, yet important challenges remain in the roadmap to full adoption” (ACCA, 2017, p. 5). A study by the International Federation of Accountants (IFAC) and the Chartered Institute of Public Finance & Accountancy (CIPFA) showed that out of 165 jurisdictions, only 30% (49 jurisdictions) had published accrual-based financial reports, while 40% (67 jurisdictions) were in the process of transitioning to accrual-based accounting. However, 30% (49 jurisdictions) still maintained cash basis accounting. In fact, not all countries that adopt accrual accounting adopt IPSAS in total. Of the 49 governments that reported on accrual, only slightly over half of them, i.e., 57%, use IPSAS (IFAC and CIPFA, 2021).

In the case of Malaysia, the government has taken the approach of developing a national public accounting standard, the Malaysian Public Sector Accounting Standards (MPSAS), based on IPSAS. However, only minor changes were made to adapt IPSAS to align them with the national circumstances (IFAC, 2013). Two committees were responsible for the development and implementation of MPSAS – the Government Accounting Standards Advisory Committee (GASAC) and the Accrual Accounting Steering Committee (ACSC). GASAC has the responsibility to develop the standards while ACSC approves the standards for application in preparing government financial reports. Although efforts to implement accrual accounting with accrual-based standards are already underway, there are still issues and problems that need to be addressed. As stated by Ramli (2018), “The decision to adopt an accrual-basis accounting system is one journey ... the path toward proper implementation, however, is another endeavour altogether”.

Given that there are several countries that have adopted IPSAS or adapted it, the Malaysian state governments can learn from their experience. Thus, this paper aims to provide an overview of the issues and challenges related to its adoption in other countries in order to provide the basis for the next phase in the study of accrual accounting and MPSAS implementation by the Malaysian state governments. The specific objectives of this paper are as follows:

1. To identify the prerequisites for IPSAS adoption, and
2. To identify the issues and challenges in implementing IPSAS.

As documented in many publications, the transition to accrual accounting entails a multitude of challenges, which have caused many countries to experience delays and failures. It is therefore very important for governments to carefully plan and strategise to ensure its successful implementation. Without strategic planning, it would precipitate a lot more investment in money and time, and it is likely to cause fatigue and risk being abandoned.

The next section provides an overview of prior studies on adoption of accrual accounting and accrual-based standards in Malaysia. This is followed by a description of the methodology and a section on discussion. This paper ends with a concluding remark and recommendation.

Throughout this paper, the term IPSAS refers to accrual basis IPSAS while cash basis IPSAS will be specifically mentioned as such.

Literature Review

This section focuses on prior studies on the adoption of accrual accounting and accrual-based standards by the Malaysian government. Previous studies in Malaysia tended to focus on the federal government's move towards accrual accounting. In general, it was found that the employees within the federal government were found to be ready for change. For example, Azmi and Mohamed (2014) conducted a case study in the Ministry of Education and concluded that the employees were ready to implement accrual accounting but pointed out that their qualifications and skills to implement the new system successfully were a major concern. Similarly, Atan and Yahya (2015) found a positive attitude towards change among the accounting personnel in the federal government. Ismail, Siraj and Baharim (2018) concluded that change valence or beliefs that the move would benefit the organisation, task knowledge and task availability significantly influence change commitment. This, of course, requires proper planning and effective communication.

There are several issues, challenges and factors influencing accrual accounting implementation. Mahadi, Noordin, Mail and Sariman (2014) suggested that Malaysia learn from New Zealand, Australia, and the United Kingdom in overcoming implementation barriers which include difficulties in the recognition and valuation of assets and liabilities, human competency, and high implementation costs. In addition to human resource competency, Yusuf and Jaafar (2018) and Ahmad (2016) included software and technology capability and suitability of accounting policies and standards and effective communication as prerequisites for successful implementation of accrual accounting.

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

There are not many documented studies on the development of accrual accounting at state government level and none on the adoption of MPSAS. A study by Sariman, Mahadi, Mail and Noordin (2017) found a lot of similarities in terms of the implementation strategies taken by the federal and state governments. Although the state governments were expected to implement accrual accounting a year after the federal government, the study found that in the three states under review, i.e., Selangor, Sabah, and Penang, progress had been made in

creating awareness, providing training for the accounting staff, and developing the necessary accounting software.

Method

This paper presents the outcome of archival research in which past studies and published information were reviewed. The objective is to identify the issues and challenges faced by countries that had decided to adopt IPSAS. This preliminary paper is part of a bigger project on IPSAS adoption by the state governments in Malaysia. Since Malaysia is a developing country, the review also focuses on developing countries with available published information on their journey towards IPSAS adoption. The countries included in the review are Tanzania, South Africa, Ghana, Nigeria, Zambia, Zimbabwe, Indonesia, Jordan, Nepal, Sri Lanka, Bangladesh, Pakistan and India. Using a simple thematic analysis, the prior studies were analysed to extract the issues and challenges on IPSAS adoption according to several themes.

Discussion

The discussion starts with an overview of the development of IPSAS, the benefits, and prerequisites for IPSAS adoption. This is followed by an overview of the experience of several developing countries in their efforts towards adopting IPSAS. Subsequently, this paper provides a discussion on the issues and challenges faced by several countries in implementing IPSAS based on three main themes: lack of resources, accounting and reporting issues, and top management commitment.

The International Public Sector Accounting Standards Board (IPSASB) had formulated and issued the cash basis and accrual basis IPSAS to ensure the quality of reporting and harmonisation of accounting practices across different governments. Most of the IPSAS were adaptations of the International Financial Reporting Standards (IFRS) used in the private sector applicable to the public sector. For financial reporting issues not dealt with, or not related to IFRS, a new set of standards were developed. The IPSASB has continued to encourage the adoption of IPSAS by governments across the globe by “developing and maintaining IPSAS and other high-quality financial reporting guidance for the public sector; and raising awareness of IPSAS and the benefits of accrual adoption” (IPSASB website).

The benefits of IPSAS adoption include greater accountability and transparency, improved efficiency and effectiveness in financial reporting and greater standardisation that will result in better decision making (ACCA, 2017). A publication by Deloitte (2015, p. 50) lists the following as expected benefits of implementing accrual basis IPSAS:

- i. Availability of more comprehensive information for decision making
- ii. Improved stewardship of assets and liabilities
- iii. Increased transparency and accountability of the public sector

- iv. Better management of government resources enabling efficiency and cost effectiveness
- v. Better consistency and comparability with other governments worldwide
- vi. Enhanced reporting of Government Finance Statistics (GFS) required by the International Monetary Fund (IMF).

The recent International Public Sector Financial Accountability Index developed by IFAC and CIPFA showed an increase (from 39% in 2018 to 49% in 2020) in jurisdictions that reported on an accrual accounting. The use of IPSAS by jurisdictions that reported on accrual accounting has also increased slightly from 51% in 2018 to 57% in 2020 (IFAC and CIPFA, 2021). Setting national standards is expensive, thus, it is not surprising that most developing countries prefer to adopt IPSAS either without any modifications or modify it for the local context. In addition, these countries would also choose to adopt IPSAS to gain international legitimisation and to attract foreign investment. Developed countries such as Canada, Denmark, France, and the US have developed their own national standards. Australia and the United Kingdom have developed national standards based on IFRS while Sweden, Switzerland and New Zealand have developed national standards based on IPSAS.

Prerequisites for IPSAS Adoption

In a study by ACCA that covered several countries in Asia, Africa, South America, the Caribbean and Latin America and Europe, it was observed that the rate of progress on IPSAS adoption had been slow. Full adoption and compliance with IPSAS were found to be difficult. Hence, the ACCA (2017) and IFAC (2020) have recommended that countries address the following factors to ensure successful adoption of IPSAS:

ACCA	IFAC
Stakeholder engagement	Strong political support at the highest level of elected officials. Commitment to implementation from senior appointed officials.
Structural and legal transformation	Legislation
Transformation and change management	Promoting a cultural and mind-set change. Recognising that reform is for enhanced financial management and not merely a book-keeping exercise. Overcoming resistance to change.
Skills capacity	Staff that is open to training and will accept an accrual accounting perspective
Cost	Initial budget and project budget
Technology and infrastructure	Integration of information technology systems
Implementation approach	Project planning and gap analysis
External support	External support

Source: ACCA (2017) and IFAC (2020)

Adoption of IPSAS in Developing Countries

African countries have been recognised as being at the forefront of IPSAS adoption. They embarked on IPSAS adoption as part of their financial management reform programmes and several countries have formally adopted IPSAS. Tanzania adopted IPSAS as early as 2013, while other countries such as South Africa, Ghana and Nigeria had partially adopted the standards. On the other hand, Zambia began adopting cash basis IPSAS in 2016 and had expressed its commitment to full adoption by 2020. Zimbabwe had declared its intention to adopt accrual basis IPSAS by 2021. Tanzania reported that it had published 222 audited financial statements in 2016, out of which 24 had qualified opinions, 3 had observed opinions, and 5 had disclaimers (ACCA, 2017).

South Africa had been facing many challenges in its journey towards full adoption of IPSAS. It had partially adopted IPSAS, and full implementation would only be realised once the Financial Management Information System that supports the Generally Recognised Accounting Practice (GRAP) had been completed. South Africa was found to use accrual accounting but not fully complied with the GRAP, resulting in significant problems with the quality of its public sector accounts (Auditor-General of South Africa, 2017). Ghana and Nigeria both adopted IPSAS in 2016 but the move towards full implementation had been hampered by the lack of accountancy capacity to cope with the demands of IPSAS full implementation. In the case of Zimbabwe, the government had targeted the year 2021 to fully implement accrual basis IPSAS to replace the cash accounting currently used by the central government and local authorities (ACCA, 2017).

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

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

2017, p.11). In 2015, the Jordan government issued its financial statement using both cash basis IPSAS and accrual basis IPSAS. In the context of Arab countries, Jordan claimed to be the first to adopt full IPSAS while other countries were still in the process of implementation (Abu Haija, AlQudah, Aryan and Azzam, 2021).

Nepal had partially adopted IPSAS type standards with the use of cash basis IPSAS for its 16 government ministries. It started with the development of the Nepal Public Sector Accounting Standards (NPSAS) by its Accounting Standards Board which stipulated the mandatory and non-mandatory parts for enhanced disclosures. All government entities were required to adopt NPSAS under the guidance of the Financial Comptroller General Office (FCGO). The implementation was first started by the central government, followed by other operational entities (Adhikari, 2015). Sri Lanka embarked on its IPSAS implementation on a phased approach basis. Sri Lanka had issued 10 accounting standards out of the 32 IPSAS international standards, referred to as the Sri Lanka Public Sector Accounting Standards (SLPSAS). However, adoption of SLPSAS was not mandatory resulting in the lack of full compliance in the financial reporting practices by its public sector agencies (ACCA, 2017).

Other countries including Bangladesh, Pakistan, and Vietnam were in the process of implementing IPSAS. Bangladesh had been using cash basis IPSAS in its reporting, but the implementation progress had been hindered by several factors. Pakistan had also made progress in its IPSAS adoption by implementing the cash basis IPSAS since 2006/07. It started with the development of the New Accounting Model (NAM) and the Financial Statements of the Accountants General of the state and federal governments were being prepared based on the cash basis IPSAS. On the other hand, India had been using a combination of cash and accrual-based accounting (Narsaiah, 2019). Initial steps were taken towards IPSAS implementation in 2013 but the implementation was delayed as the Indian government wanted to ensure the challenges were first addressed and a detailed roadmap outlined.

Malaysia's experience with IPSAS implementation started in 2011 with the government's announcement that the country would fully adopt IPSAS type standards by 2015. The AGD formed the Accrual Accounting Implementation Team (*Pasukan Pelaksanaan Perakaunan Akruan - PPPA*) to spur the accrual accounting adoption. The Malaysian Public Sector Accounting Standards (MPSAS) was then developed together with change management programmes to facilitate the adoption of accrual basis IPSAS. In addition, implementation of accrual accounting was also supported by a computerised accounting system, the Integrated Government Financial Management and Accounting System (iGFMAS). Malaysia faced many challenges in its journey towards IPSAS adoption which has delayed its target for full implementation by 2015. The reporting of accrual based financial reports has been postponed awaiting approval of amendments to the relevant acts.

Issues and Challenges in the Implementation of IPSAS

The review of the experiences in IPSAS adoption around the world reveal that the main challenges can be categorised into three themes: (1) Lack of resources; (2) Accounting and reporting issues; and (3) Top management commitment. Therefore, this section highlights the challenges faced by several developing countries as described above according to the three themes.

1. Lack of Resources

Having adequate resources are amongst the prerequisites in successfully implementing accrual accounting or IPSAS because it involves a change in accounting techniques from the simpler cash accounting practices to a more comprehensive accounting system. Both ACCA (2017) and IFAC (2020) have listed several key resources required, such as skills capacity, allocation of costs to cover the implementation as well as the upgrade in technology, infrastructure and the integration of accounting systems.

Several African countries were unable to migrate from the use of cash basis IPSAS to IPSAS due to weaknesses in their IT systems. As in many other countries, inadequate capacity building involved in the preparation of financial statements had further aggravated the situation. South Africa had recognised its resource challenge as the lack of manpower. Jordan, in contrast, had highlighted its key success factors in adopting the IPSAS as having the right infrastructure (sufficient hardware and software, adequate internal and external network facilities, continuous update of the systems and accounting records and forms to comply with IPSAS requirements), and manpower training (Abu Haija, AlQudah, Aryan and Azzam, 2021).

Wang and Miraj (2018) reported that Sri Lanka was having problems with the lack of experienced staff, while inadequate training of accounting staff was also identified as one of the challenges faced by Pakistan. In Bangladesh, the challenge was that separate accounting systems were being used by the ministries and other government entities and this in turn compromised the effective adoption of the IPSAS, thereby delaying the production of useful and timely financial reports (Wang and Miraj, 2018).

In the case of Indonesia, although it had claimed full implementation of the IPSAS, the government faced challenges in terms of the lack of usefulness of the IPSAS-based reports for decision making as well as incurring higher accounting costs without clear economic benefits. In addition, Indonesia had also encountered problems with inadequate competent staff (Harun, Eggleton and Locke, 2021).

Malaysia had also faced similar challenges. However, many of the challenges, such as cost allocation for capacity building, IT infrastructure, integrated accounting systems and training had been managed accordingly. The government had been actively recruiting qualified accountants, organising seminars and workshops to enhance awareness, and conducting training to improve the skills of existing employees. Nevertheless, skills capacity had remained

a challenge as it required time to develop as well as improve during the implementation stages (Isa et al, 2013).

2. Accounting and Reporting Issues

Using accrual accounting would require government entities to enhance and transform their financial accounting and reporting methods tremendously. Recognition of assets, liabilities, revenues, and expenses needs to be done in a more comprehensive manner, thus, creating a huge hurdle for many governments, especially those that do not have systematic and sufficient records of accounting information. The challenges faced by the African countries have included the need to identify and recognise intangible assets and to reconcile cash books and bank statements. This had been further complicated by the fact that budgets were generally prepared on a cash basis while the financial reporting framework was based on IPSAS accrual accounting which had led to a mixture of cash and accrual entries in the financial statements (ACCA, 2017).

South Africa identified inadequate or missing documentation for accounts disclosed in the financial statements as the main reason for its qualified, adverse and disclaimer opinion (Auditor-General of South Africa, 2017). As for Zambia, the main challenge in implementing IPSAS was difficulty in collecting and accounting for revenue as well as the lack of information on expenditures, assets, and liabilities. Among the challenges faced by Zimbabwe were a lack of invoices and receipts, delays in submitting accounts, reconciliation issues and a weak debt recovery system. This was further aggravated by weaknesses in governance (ACCA, 2017). In Nepal, the main problem faced in the implementation of the Nepal Public Sector Accounting Standards (NPSAS) was difficulty in collecting the required data for disclosure of third-party transactions (ACCA, 2017).

In Bangladesh, the problem was that the public sector entities and individual departments do not manage their own cash; it was managed centrally by the government with the accounting functions being categorised as a consolidated fund and a treasury fund (ACCA, 2017). Furthermore, the financial authority given to the public sector entities through the budget was limited. All self-accounting entities (SAEs) report their financial transactions to the Controller General of Accounts (CGA), who later incorporated them in the monthly central accounts and the annual finance accounts. Delays in document submission to the CGA by the SAEs had also contributed to the low quality and untimeliness of the reports. This in turn had adversely affected the ability of the government in monitoring the implementation of the budget.

Similarly, Wang and Miraj (2018) reported that Pakistan faced data reliability issues because the data were provided by various entities, and there were also inconsistencies in the recognition and recording of the financial transactions, thus impairing the completeness and timeliness of the information provided for the reports. In addition, the Pakistani government had not yet integrated its budgeting and accounting standards. This had led to difficulties in holding specific entities accountable for their public spending. Likewise, among the challenges faced by India were a lack of appropriate accounting policies and insufficient information on

assets and liabilities across various public entities (Wang and Miraj, 2018).

As in many other developing countries who had been using cash accounting and were new to accrual accounting, Malaysia had also faced the problem of information scarcity to determine beginning balances for assets. Ismail et al. (2013) concluded that a lack of staff competencies had caused difficulties in implementing IPSAS related to the recognition, measurement and disclosure of property, plant, and equipment. Basnan et al. (2015) also reported a lack of expertise in recognising and measuring heritage assets, while Md Yatim and Norhashim (2016) highlighted major obstacles in implementing IPSAS related to obtaining the correct opening balance particularly for assets.

3. Top Management Commitment

Top management commitment, commonly referred to as the 'tone from the top', had been identified as one of the critical factors in determining the success of change programmes (Isa et al., 2013). For example, it was claimed that Jordan's successful implementation of IPSAS was due to significant top management commitment through the introduction of local legislation (with a clear road map and procedures), and stakeholder support (from top management and related parties) as well as external support (from external experts and professional bodies) (Abu Haija et al., 2021). On the other hand, countries like Nepal had been facing problems in the implementation of NPSAS due to the lack of support from stakeholders, including top management. Senarath and Ukhwate (2015, as cited in Wang and Miraj, 2018) reported that Sri Lanka was still working on implementing its 10 SLPSASs because its adoption had not been made mandatory and this had resulted in different execution stages among the government entities. Similarly, the lack of delegation of authority had resulted in various accounting issues being faced by Bangladesh in its implementation of IPSAS (ACCA, 2017).

In the case of India, Wang and Miraj (2018) stated that the lack of top management support had resulted in the variance levels of readiness amongst the different entities within the Indian government. Furthermore, the implementation of IPSAS had been hindered by difficulties in organisational restructuring and identifying the pilot implementation sites as well as inadequate execution planning. Similarly, Isa et al. (2013) found that inconsistent top management commitment in the different ministries in Malaysia had slowed down progress in implementing accrual accounting. While several ministries had conducted awareness programmes, gap analysis, training and upskilling, improvement in the infrastructure and IT system, others had not made the progress envisaged by the AGD.

Conclusion

In general, the experiences in IPSAS implementation across developing countries have been very similar and can be categorised in three broad areas: first, resources which include a lack of competent accounting and finance staff, and a lack of IT facilities and IT support; second, accounting and reporting issues related to difficulties in assets, liabilities, revenue and expenses recognition and measurement; and third, top management commitment in

ensuring successful change management programmes. Strong support and commitment from the government to push the IPSAS agenda is considered to be one of the most critical factors in ensuring its successful implementation. Similar observations had been made in the report by Deloitte (2015, pp. 51-52) in which four challenges were identified: (1) the need for a realistic programme timeline and appropriate planning with a clear transition strategy and detailed adoption roadmap; (2) buy-in of operational government leadership; (3) capacity of finance department employees and technical accounting support that may require training and technical support; and (4) difficulty in identifying and recognising property, plant and equipment.

Learning from the challenges faced by developing countries, Malaysian state governments should ensure that they carefully observe the fundamentals for a successful implementation of MPSAS so the right strategies can be formulated. State governments should allocate adequate resources for human capital development, IT infrastructure and support, collection of accounting records and information on assets and liabilities. In addition, it is important to have the buy-in from accounting and finance staff as well as support from professional bodies and the federal government. Furthermore, state governments must ensure that they have the engagement and support of their elected officials and top management.

As mentioned before, this paper presents a review of the literature that is limited to the issues and challenges related to the adoption of the IPSAS in various countries. The next phase of the study aims to discover the stage of implementation, employee's awareness, and commitment, as well as issues and challenges faced by the Malaysian state governments in the adoption of accrual accounting and MPSAS.

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Management Control Systems and Employee Organisational Commitment in the Malaysian Public Sector

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<https://doi.org/10.58458/ipnj.v11.01.02.0068>

Received: 30 June 2021

Reviewed: 24 July 2021

Accepted: 27 September 2021

Abstract

Purpose: This study investigates the relationship between management control systems (input controls, behaviour controls and output controls) and the level of employee organisational commitment in the Malaysian public sector.

Methodology: The quantitative method was applied using convenience sampling techniques. A total of 102 usable questionnaires were collected from the prospective respondents of public sector departments/agencies in Putrajaya, Malaysia. The primary data analysis technique for this study is Partial Least Squares Structural Equation Modelling (PLS-SEM).

Findings: The research findings indicate no relationship between output controls and employee organisational commitment. Input controls and behaviour controls, on the other hand, were found to be positively related to the level of employee organisational commitment in the public sector.

Practical Implications: This study offers a number of practical guidelines for the public sector emphasising the utilisation of input controls and behaviour control to promote the level of employee organisational commitment.

Originality/Value: Given the lack of extant literature on this topic, this is probably one of the first studies that provides evidence of the relationship between management control systems (input controls, behaviour controls and output controls) and the level of employee organisational commitment in the Malaysian public sector context that is in line with the social exchange theory.

Keywords: Input control, behavioural control, output control, employee organisational commitment, public sector

1.0 Introduction

Numerous studies (Lee & Yang, 2011; Su et al., 2015) have highlighted the effect of management control systems on company performance, but very few studies have focused on investigating the effectiveness of management control systems on employee behavioural outcomes, and, in particular, on employee organisational commitment (Su et al., 2015). However, it should be noted that previous studies had determined that employee organisational commitment is significant to organisations because of its ability to enhance staff work performance (Sahoo & Das, 2011). Hence, this provides the rationale for implementing management controls systems to improve employee organisational commitment.

In the past, the Malaysian government had faced many concerns regarding its inefficiency and ineffectiveness because of the lack of human resources and human capital (Rashidah et al., 2013). Several past studies (Hashim, 2015; Mahdi et al., 2014) found that Malaysian employees have a lower level of employee organisational commitment. However, a recent private-sector literature review and the experience of other countries have led to the conclusion that the findings may not be completely applicable to the Malaysian public sector context.

Numerous crucial discussions on employee organisational commitment have been backed by the social exchange theory (Cropanzano et al., 2017; Haque et al., 2019; Viswanathan et al., 2019). However, there is a lack of literature discussing the social exchange theory in management control systems in general and in the Malaysian public sector context in particular.

Thus, this study has a theoretical contribution to make by addressing the gap by investigating those relationships in the Malaysian public sector. It will contribute to the extant literature using social exchange theory to support and develop the theoretical framework. The research findings can also make a practical contribution by helping heads of departments/agencies and employees to formulate and implement appropriate plans and strategies to improve employee organisational commitment, thereby enhancing the overall performance of the Malaysian public sector.

The remainder of the paper is divided into five sections. Section two presents the literature reviews and hypotheses development. The methodology is outlined in section three. The results are reported in section four. Finally, the discussion and conclusion are presented in section five.

2.0 Literature Review and Hypotheses Development

2.1 Management Control Systems

Management accounting controls systems can be defined as the mechanism that forms an informational network that gathers information and creates relationships that control and affect behaviours (Roque et al, 2018). According to Anthony and Young (2003) and Merchant and Van der Stede (2003), management control systems concentrate on the efficient application of strategies to meet achievable targets set by the company. Snell (1992) conceptualised the management control system as a three-component model consisting of input controls, behaviour controls and output controls. While input controls are defined as control systems that manage the organisations' acquired resources, including employees' knowledge and skills. Behaviour controls are defined as the characteristics of the staff themselves who take responsibility and control their own behaviours (Snell,1922). Output controls, on the other hand, are defined as control systems that focus on achieving the desired outcome, with employees required to take responsibility for the results, which are related to their actions and behaviours to achieve the desired outcomes (Snell, 1922).

There are several reasons for choosing Snell's 1992 three-component model for this study. First and foremost, many management and accounting studies have used Snell's 1992 three-component model successfully (Cardinal et al., 2004; Johnson, 2011), as its construct is apparently most suitable for examining individual behaviour outcomes. It had been used in the past for the integration of human resources management (HRM) practices (Gupta & Govindarajan, 1991; Liao, 2006), and it is also consistent with the behavioural aspects in many ways, such as attempting to shape and develop employees' behaviour (Snell, 1992; Liao, 2006). The idea that management control systems influence individual behaviour outcomes is supported by studies such as those of Langevin and Mendoza (2012) and Klein et al. (2019).

This study's main objective is focused on the individual level, with an examination of the effects of implementing management control systems on individual behaviour outcomes. Thus, this study does not include factors related to organisation levels, such as size, culture, etc.

2.2 Employee Organisational Commitment in the Public Sector

Allen and Meyer (1996) defined employee organisational commitment as a psychological connection between the workers and the organisation, regardless of whether the workers had a low possibility of leaving the organisation for any avoidable reasons. In other words, it is viewed as how a worker builds up the sentiment of belonging to their company (Wadhwa & Verghese, 2015). Numerous studies have found that employee organisational commitment improves company performance (Karim & Rehman, 2012; Azeem & Akhtar, 2014; Hanaysha, 2016). Previous studies had examined several factors that have an influence on employee organisational commitment, such as empowerment, teamwork, culture, etc.

(Krajcsák & Gyökér, 2013; Wadhwa & Verghese, 2015; Hanaysha, 2016). The study by Hanaysha (2016) showed that workers' involvement, the environment of the workplace and organisation learning had a significantly positive relationship on employee organisational commitment at public universities in Northern Malaysia.

In the past, public sector organisations were more focused on behaviour controls, especially policies and processes to manage companies (Frey et al., 2013). Today, the use of indicators based on output performance is becoming common in New Public Management and performance management in many public sector organisations (Frey et al., 2013; Siverbo et al., 2019). A study by Verbeeten (2008) showed significant results when performance measurement and reward systems interacted with other methods of control systems in public sector entities.

2.3 Management Control Systems and Employee Organisational Commitment Linkage in the Public Sector

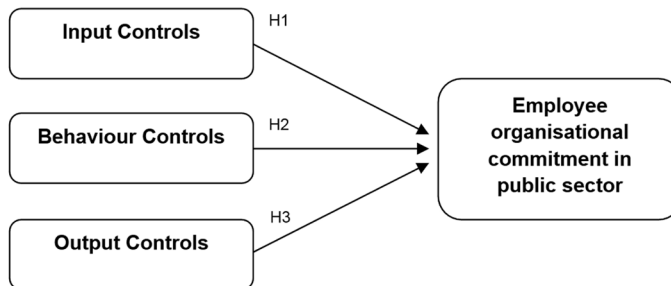
Aziah and Scapens (2007) found that the implementation of accounting control systems affects the relationship between low-level management and accountancy executives in the Malaysian public sector, based on trust between the two parties. Bracci and Tallaki (2021) suggested that management control systems can assist in the decision-making process and support adaptive behaviour by providing information to cope with external barriers in the public sector. Moreover, Siddiquee (2010) revealed that public services in Malaysia had followed the global trends to implement result control but mentioned that while the current approach tended to suffer from serious inadequacies and limitations, many of the shortcomings of the traditional method could be resolved through result control and budgeting. Van der Kolk et al. (2018) highlighted the fact that personnel and cultural controls were also crucial to enhance intrinsic motivation and performance, implying that focusing primarily on the results of controls was too narrow and could cause a suboptimal level of employee motivation and performance in the public sector. Nuhu et al. (2019), on the other hand, concluded that the implementation of interactive controls and diagnostic controls did not influence changes in the performance of organisations in the public sector of Australia.

2.4 Theoretical Framework and its' Underpinning Theory

The social exchange theory perspective provides the theoretical framework for the effects of management control systems on employee organisational commitment in the public sector. The theory argues that the staff is committed to contributing 'more than expected' if the staff is satisfied and experiences support from the organisation (Haque et al., 2019). According to previous studies (Cropanzano et al., 2017; Haque et al., 2019; Viswanathan et al., 2019), employee organisational commitment can be achieved by fundamentally following the social exchange theory. The social exchange theory is related to the behavioural aspects in company practices, such as recruitment and selection, training, performance evaluation, rewards and compensation emphasising the personal level (Boselie, 2010; Jackson et al., 2014).

However, there is a lack of literature discussing the social exchange theory in management control systems and especially in the Malaysian public sector context. Based on the logic of social exchange theory, this research indicates that management control systems in terms of input controls, behaviour controls and output controls influence employee organisational commitment through the organisation practices and investment such as recruitment, training, procedures, rewards and compensation. It is used in this study as a fundamental theory in developing the conceptual framework of the effects of management control systems on employee organisational commitment in the public sector. Figure 1 shows the theoretical framework for this study.

Figure 1: Theoretical Framework



2.5 The Relationship between Input Controls and Employee Organisational Commitment

Employee selection based on person-organisation fit, regular educational opportunities, and accelerated job significantly correlates with employee organisational commitment (Sivapragasam and Raya, 2017). A study by Hanaysha (2016) found that employee organisational commitment is affected by staff training. Moreover, employees consider different kinds of input control consisting of training and skills development activities as a positive sign that their respective employing organisations are concerned about their job development and welfare (Su et al., 2015). Studies have shown that development programmes enhance the staff's abilities (Dymock et al., 2012) and boost workers' emotional attachment to the employing organisation (Newman et al., 2011). Consequently, a positive relationship between the input controls and the degree of employee organisational commitment is anticipated as postulated in the following hypothesis:

H1: The extent to which input controls are used is positively related to the level of employee organisational commitment in the public sector

2.6 The Relationship between Behaviour Controls and Employee Organisational Commitment

A study by Aziah and Scapens (2007) on the Malaysian public sector showed that behaviour controls caused distrust among employees and misinterpretation of the organisation's

intention. Siverbo et al. (2019) also concluded that behavioural controls might influence performance management dynamics and cause dysfunctional effects, while Akroyd and Kober (2019) contended that implementing bureaucratic controls would negatively influence the organisational culture. Blom (2019) indicated that when the public sector implemented the required rules and regulations, employees considered those rules and regulations burdensome and unproductive. Su et al. (2015) also agreed that close supervision and monitoring resulted in employees with lesser organisational commitment. A negative relationship between the implementation of behaviour controls and the degree of employee organisational commitment is anticipated as suggested in the following hypothesis:

H2: The extent to which behaviour controls are used is negatively related to the level of employee organisational commitment in the public sector

2.7 The Relationship between Output Controls and Employee Organisational Commitment

Human resources practices such as giving incentives and benefits correlate significantly and positively with employee organisational commitment (Sivapragasam & Raya, 2017). In addition, employees who are treated well by the organisation feel a moral obligation to reciprocate for the organisation's well-being (Haque et al., 2019). Verbeeten and Speklé (2015) found that a results-oriented culture in New Public Management was positively related to performance. Van der Kolk et al. (2018) examined the relationship between the various types of management controls, intrinsic and extrinsic motivation, and performance in the public sector and found that the use of results controls was positively related to the employees' extrinsic motivation. The following hypothesis predicts a positive relationship between the implementation of output controls and the degree of employee organisational commitment.

H3: The extent to which output controls are used is positively related to the level of employee organisational commitment in the public sector

3.0 Methodology

3.1 Research Methodology

The majority of participants of this study were the staff working in the public sector in Putrajaya, Malaysia. Putrajaya was selected because it is the proposed administrative capital designed to handle the increasing number of ministries in the federal government (Morris et al., 2016). The quantitative method was applied in this study. The quantitative approach is the most effective approach to understand the direct and indirect relationship between numerous variables and to explore how they can influence each other (Kumar et al., 2013).

According to the Department of Statistics Malaysia (2021), the total population of Putrajaya in 2019 was 0.10 million, while the employed labour force was 38,100. However, it should

be noted that the exact number of the public sector employees was unavailable. Therefore, convenience sampling was used in this study. Convenience sampling is a non-probability sampling technique that considers respondents who are selected according to the researchers' ease instead of any specific sample design based on probability (Link, 2018). In this study, the respondents were randomly selected through a Google search on the directories of staff in the various public sector departments/agencies in Putrajaya. The prospective respondents were contacted via their e-mail address displayed in their respective directory. They were guaranteed anonymity and those who consented to participate in the study completed the online questionnaire via Google Form.

The questionnaire was designed using a 5-point Likert rating scale as the tool for data collection. It comprised three sections: Section 1 focused on the respondents' demographic information such as gender and age. Section 2 sought information on the level of employee organisational commitment using Cook and Wall's (1980) 9-item scale instrument while Section 3 included the indicators for the three types of control using Snell's (1992) instrument (See Appendix A).

Numerous studies by Jaramillo et al. (2005), Karsh et al. (2005), and Su et al. (2015), had highlighted Cook and Wall's 9-item scale as an effective tool for measuring employee organisational commitment. The nine items focused on three main elements: organisational identification, organisational involvement and organisational loyalty with items number three, four and seven stated negatively, as an opposite scoring was expected.

Snell's (1992) instrument is generally used as the source and reference for independent variables for the three types of control, viz., input controls, behaviour controls and output controls. In Section 3, a 5-point Likert scale was used for every item, ranging from "extremely disagree" to "totally agree".

Validity depends on the significance of the data collected and whether a correct version of the studied phenomenon is created. If the test has high validity, then more items are closely related to the test's proposed objective (Bloor & Wood, 2006). In this study, pre-test and pilot study are not run to avoid experimental manipulation, this can be supported by Pасnak (2018). However, face validity is established, two academic experts in management accounting had reviewed the selection of each variable, analysed the contents of each item in the questionnaire and advised on any adjustments on wording to reflect the context. A minor adjustment was made with the change of the word "organisation" to "agency/department", reflecting the structure of the Malaysian public sector. This study did not consider any control variables, as including inappropriate control variables in multiple regression and other analyses can result in a less accurate interpretation of results (Spector & Brannick, 2011).

A total of 3,133 questionnaires were e-mailed to the prospective participants identified through the Google search, and they were given one month to complete the questionnaires. Out of the responses received, 110 invalid e-mails and 23 unidentified questionnaires were excluded,

leaving only 102 usable responses.

Rindfuss et al. (2015) concluded that low response rates did not indicate any evidence of bias when examining relationships between variables in a multivariate analysis. This could be further supported by the results of the response bias tests outlined in the following section, Section 4. Table 1 below is the summary of the sampling done.

Table 1: Summary of Sampling

Total e-mailed	3,133
Invalid e-mail	(110)
Valid e-mail	3,023
Respondents	125
Unidentified respondents	(23)
Total sample of respondents	102

4.0 Results

4.1 Demographic Background of the Respondents

The summary of the respondents' demographic background is presented in Table 2 further below. Among the 102 respondents, 47 (46.1%) were male, and 55 (53.9%) were female. As for their ages, there were 12 (11.8%) respondents between 21 and 30 years, 44 (43.1%) between 31 and 40 years, 33 (32.4%) between 41 and 50 years, while 13 (12.7%) were 50 and above. As for their educational qualifications, 39 (38.2%) of the respondents were bachelor degree holders, followed by 33 (32.4%) with academic qualifications of Masters or above, 19 (18.6%) diploma holders, 9 (8.8%) SPM holders and 2 (2%) STPM holders. The data relating to their position in the civil service varied accordingly. Only 4 (3.9%) of the respondents held top management positions, while the majority of them i.e. 59 (57.8%) respondents were in middle management positions and 31 (30.4%) in low management positions. The remaining 8 (7.8%) respondents were in non-management positions. As far as the length of their service in their respective department/agency, the majority of them, numbering a total of 70 (68%) respondents, had worked for more than 10 years, followed by 17 respondents with around 5 to 10 years of service, while 15 respondents had worked for fewer than 5 years.

Table 2: Summary of Respondents' Demographic Background

<i>Demographic background</i>	<i>Frequency</i>	<i>Percent</i>
Gender		
Male	47	46.1
Female	55	53.9
<i>Total</i>	<i>102</i>	<i>100</i>
Age		
21 - 30	12	11.8
31 - 40	44	43.1

41 – 50	33	32.4
50 and above	13	12.7
<i>Total</i>	<i>102</i>	<i>100</i>
Education		
SPM	9	8.8
STPM	2	2.0
Diploma	19	18.6
Bachelor degree	39	38.2
Master's or above	33	32.4
<i>Total</i>	<i>102</i>	<i>100</i>
Position		
Top management	4	3.9
Middle management	59	57.8
Low management	31	30.4
Non-management	8	7.8
<i>Total</i>	<i>102</i>	<i>100</i>
Year of services		
< 5 years	15	14.7
5 – 10 years	17	16.7
> 10 years	70	68.6
<i>Total</i>	<i>102</i>	<i>100</i>

4.2 Response Bias and Descriptive Statistics

The test for non-response bias was run by examining the means for each variable for the group of early and late respondents through the independent samples t-test. The p-value of input controls, behaviour controls, output controls, and employee organisational commitment was greater than 0.05, indicating no difference between the early and late respondents. This implied the absence of a non-response bias. Before using the SmartPLS to assess the measurement model, the descriptive statistics for each variable were computed using the SPSS analytical software. Table 3 summarises the descriptive statistics of each independent and dependent variable.

Table 3: Descriptive Statistics

Descriptive Statistics							
Variables	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Input Controls	102	3.14	5.00	415.57	4.0742	0.44396	0.197
Behaviour Controls	102	2.60	5.00	403.40	3.9549	0.44313	0.196
Output Controls	102	2.50	5.00	395.00	3.8725	0.49762	0.248
Employee Organisational Commitment	102	2.78	5.00	391.78	3.8410	0.51798	0.268

4.3 Assessment of the Measurement Model

The fundamental purpose of assessing the measurement model is to measure the assumptions related to reliability and validity. In this study, the reliability measures utilised were the two approaches viz. indicator reliability and internal consistency reliability. Table 4 further below summarises the outer loadings of all the indicators. First, several items with weak values for indicator reliability were deleted. The values for items 1 and 2 under input controls were less than 0.40; thus, they were deleted. Item 8 under employee organisational commitment, which had a weak value of 0.485, was deleted. The items that were retained included items 3 and 4 under input controls, items 1 and 2 under behaviour controls, items 1, 4, 5, and 6 under output controls, and all the items under employee organisational commitment that were in the range between 0.4 and 0.7. The rationale for this is that if in the evaluation process, the variables meet the threshold of composite reliability and average variance extracted (AVE), the items can be retained (Hair et al., 2014).

Next, the items were assessed for internal consistency reliability. Cronbach's Alpha is a measurement to test the consistency of measurement instruments containing multiple items (Warrens, 2015). Generally, a value in the range from 0.6 to 0.7 indicates that the level of reliability is acceptable, while a value that is 0.8 or higher indicates that the level of reliability is very good (Ursachi et al., 2015). Composite reliability (CR), also known as McDonald's coefficient, is acceptable when the values are at least 0.7 and above (Dakduk et al., 2019). Table 4 further below summarises the Cronbach's Alpha and composite reliability results for each variable. All variables had a Cronbach's Alpha and composite reliability value of more than 0.70, indicating a good internal consistency reliability level. Thus, all variables were reliable for further assessment.

Construct validity is the extent to which a set of measured items reflects the latent theoretical construct that they are designed to measure. Construct validity consists of two important components: convergent validity and discriminant validity. Table 4 (see below) summarises the average variance extracted (AVE) results for all the variables. The behaviour controls had a value of 0.509, which is more than 0.50, the required value for an AVE result to be deemed acceptable (Hair et al., 2017). On the other hand, the other variables for input controls, output controls and employee organisational commitment had AVE results of less than 0.50 but more than 0.40. According to Fornell and David (1981), an AVE of less than 0.40 is acceptable if the composite reliability is higher than 0.6. In this study, the input controls, output controls and employee organisational commitment had composite reliability values which were more than 0.80, thus the AVE values which were more than 0.40, were considered acceptable.

Discriminant validity is used to determine whether the variables in the model are highly correlated among themselves or not. Therefore, the square root of the AVE for a variable is compared to the correlation between the variable and the other variables. The rule of thumb suggests that the square root of AVE should be higher than the correlation between the variables (Dakduk et al., 2019). Table 4 summarises the Fornell-Larcker Criterion result for all

variables. The square root of the AVE of all the variables was larger than the value of correlation with the other variables, thus indicating that discriminant validity was well established.

Table 4: Assessment of Measurement Model

Variables	Indicators	Outer Loadings	Cronbach's Alpha	Composite reliability	Average Variance Extracted (AVE)	Discriminant Validity Fornell-Larcker Criterion	
Input Control	IC3	0.435	0.731	0.821	0.491	Input Controls	0.701
	IC4	0.672				Behaviour Controls	0.540
	IC5	0.786				Output Controls	0.534
	IC6	0.763				Employee Organisational Commitment	0.570
	IC7	0.727					
Behaviour Control	BC1	0.497	0.753	0.829	0.509	Input Controls	0.540
	BC2	0.464				Behaviour Controls	0.713
	BC3	0.724				Output Controls	0.658
	BC4	0.883				Employee Organisational Commitment	0.565
	BC5	0.882					
Output Control	OC1	0.675	0.761	0.826	0.455	Input Controls	0.534
	OC2	0.852				Behaviour Controls	0.658
	OC3	0.835				Output Controls	0.675
	OC4	0.439				Employee Organisational Commitment	0.432
	OC5	0.546					
	OC6	0.601					
Employee Organisational Commitment	EOC1	0.614	0.789	0.844	0.405	Input Controls	0.570
	EOC2	0.64				Behaviour Controls	0.565
	EOC3	0.65				Output Controls	0.432
	EOC4	0.699				Employee Organisational Commitment	0.636
	EOC5	0.621					
	EOC6	0.668					
	EOC7	0.58					
	EOC8	0.565					
	EOC9	0.565					

4.4 Assessment of Structural Model – Hypothesis Test

The structural model was assessed to evaluate and to perform hypothesis tests related to the causal relationship between the exogenous and endogenous variables specified in the path diagram (Dakduk et al., 2019). The result was 0.096, which indicates a good fit adjustment. The value of R was 0.419, while the R-square was equal to 0.401. This indicated that 40.1% variations in the dependent variable can be explained by the variations in all three independent variables. The input controls had an f square value of 0.16, which indicated a medium effect on employee organisational commitment. The behaviour controls indicated a small effect on

employee organisational commitment with an f square value of 0.121. In contrast, the output controls show no effect on employee organisational commitment when the f square value is 0.00. In this assessment, SmartPLS was used to perform a bootstrap resampling technique (5000 resamples), which helps determine the path estimates and t-statistics for all the paths within the structural model. The resampling bootstrapping was only run once with a one-tailed procedure and significance levels of 5% (95% confidence interval). Figure 2 (below) shows all the structural paths for this study.

Figure 2: Assessment of Structural Model

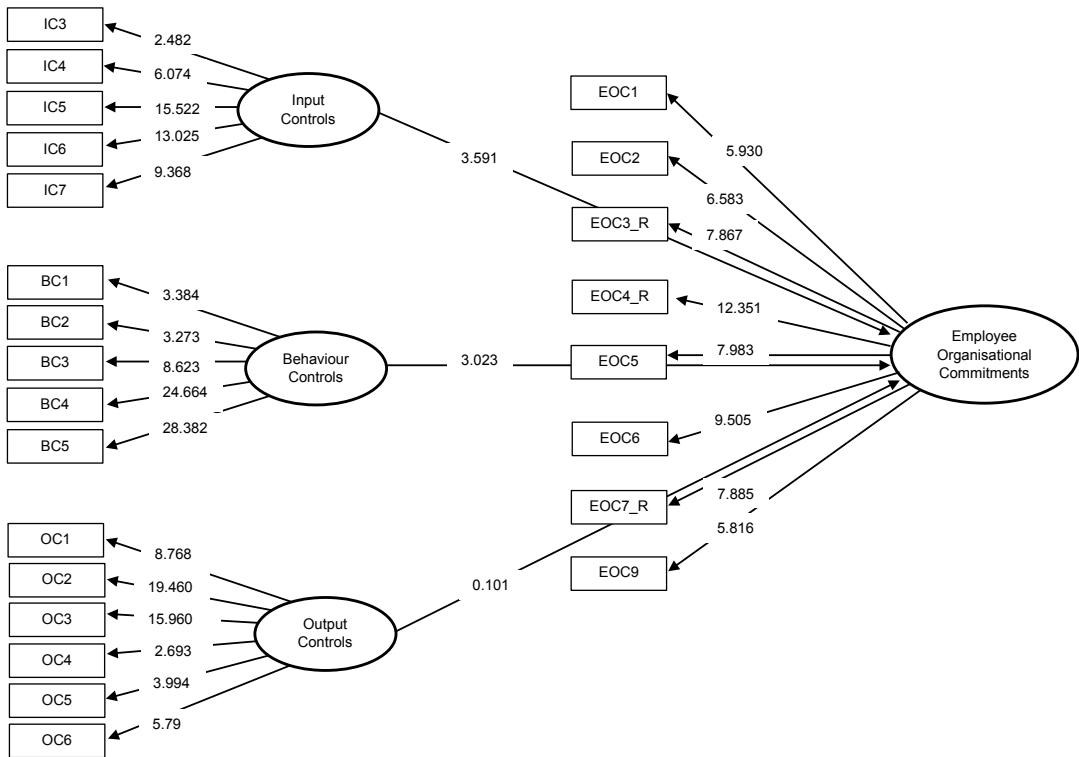


Table 5 (below) summarises the hypotheses and tests of this study.

Table 5: Summary of Hypothesis and Test

Hypothesis and Path	Parameter Estimate (β)	Sample Mean (M)	Std. Dev.	T Statistics	P Values	Result
H1: Input Controls -> Employee Organisational Commitment	0.369	0.366	0.117	3.147	0.002	Supported
H2: Behaviour Controls -> Employee Organisational Commitment	0.378	0.374	0.101	3.742	0.000	Not supported
H3: Output Controls -> Employee Organisational Commitment	-0.013	0.024	0.122	0.105	0.916	Not supported

Hypothesis H1 which stated that ‘the extent to which input controls are used is positively related to the level of employee organisational commitment in the public sector’ was supported ($b = 0.369$, $T = 3.147$, $p = 0.002$). Hypothesis H2, which stated that ‘the extent to which behaviour controls are used is negatively related to the level of employee organisational commitment in the public sector’ was not supported as the result shows that the relationship was positive instead of negative ($b = 0.378$, $T = 3.742$, $p = 0.000$). Hypothesis H3 which states that ‘the extent to which output controls are used is positively related with the level of employee organisational commitment in the public sector’ was also not supported, as the result is not significant, even though the relationship proved to be positive ($b = -0.013$, $T = 0.105$, $p = 0.916$).

5.0 Discussion and Conclusions

The study investigated the relationship between implementing the three types of management accounting controls, viz., input controls, behaviour controls and output controls, and the level of employee organisational commitment in the Malaysian public sector. The findings show that while output controls do not affect employee organisational commitment, input controls and behaviour controls are significantly and positively related to employee organisational commitment.

The results also indicate that input controls variables have a significant positive effect on employee organisational commitment. This is in line with previous studies (Newman et al., 2011; Dymock et al., 2012; Su et al., 2015; Hanaysha, 2016; Sivapragasam & Raya, 2017) suggesting that managers should use input controls to enhance employee organisational commitment.

The findings also reveal that behavioural controls have a significant positive effect on employee organisational commitment, which, however, does not align with those of other studies (Aziah & Scapens, 2007; Su et al., 2015; Akroyd & Kober, 2019; Siverbo et al., 2019). However, this disparity can be explained by the nature of the public sector. Blom (2019) had concluded that

government bureaucracy only had a minimal negative influence on public sector employee organisational commitment, as workers in government agencies, unlike workers in the private sector, have a stronger intrinsic motivation to serve the public interest.

The results indicate no significant relationship between output controls and the level of employee organisational commitment in the Malaysian public sector. This contradicts the conclusions of some researchers who have argued that there is a significant positive relationship between output controls and employee organisational commitment (Verbeeten & Speklé, 2015; Sivapragasam & Raya, 2017; van der Kolk et al., 2018; Haque et al., 2019). However, this conflict can be resolved by taking into account the characteristics of public sector employees. Houston (2006) found that public servants were less motivated by monetary rewards than private sector employees. This suggests that extrinsic rewards in output controls have limitations in motivating employees. Thus, organisations need to look into intrinsic rewards or other strategies to enhance employee organisational commitment.

This study has several theoretical implications. It contributes to the extant literature on management control systems by investigating the effect of management control systems on employee organisational commitment, and it also fills the research gap by investigating the correlations from the Malaysian public sector perspective. This study also augments the existing literature on using Snell's model to conceptualise the management control systems as the independent variable, and by examining the relationships between the three controls based on the social exchange theory.

The results also have a crucial practical implication: heads of departments in the public sector should be advised to reconsider the value of implementing input controls and behaviour controls to promote employee organisational commitment, since traditional rewards and performance evaluation systems in output controls were found to be ineffective practices for promoting employee organisational commitment unlike the private sector, due to the nature and structure of the public sector.

This research also has limitations that are common in the survey approach. The survey was localised: it was limited to willing participants in the public sector agencies/departments in Putrajaya, Malaysia, and therefore, it may not be possible to extrapolate the results to other states in Malaysia or to other countries. It is recommended that future researchers use a mixed-mode of different approaches to address the shortcomings; for example, surveys can be used together with interviews, thus providing a deeper insight into the factors influencing employee organisational commitment in the public sector.

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Appendix A

Questionnaire

Section 1

Gender: <i>Jantina:</i>	Male / Female <i>Lelaki / Perempuan</i>
Highest level of education: <i>Tahap pendidikan tertinggi:</i>	SPM / STPM / Diploma / Bachelor Degree / Master or above / Others: _____ <i>SPM / STPM / Diploma / Ijazah / Sarjana dan ke atas / Lain-lain: _____</i>
Current position: <i>Jawatan Sekarang:</i>	Top management / Middle management / Low management / Non-management / Others: _____ <i>Pengurusan atasan / Pengurusan pertengahan / Pengurusan yang rendah / Bukan pengurusan / Lain-lain: _____</i>
Year of services: <i>Tahun perkhidmatan:</i>	<5 years / 5 to 10 years / >10 years <i><5 tahun / 5 ke 10 tahun / >10 tahun</i>
Agency / Ministry / Department: <i>Agensi / Kementerian / Jabatan:</i>	_____ _____ _____

Section 2

9-item scale of Cook and Wall's (1980): Measure of the level of Employees Organisational Commitment

Please indicate the extent to which you agree with the following statements
 (1 = strongly disagree, 5 = strongly agree)

Organisational Identification

1. I am quite proud to be able to tell people who it is I work for.
2. I feel that I am a part of the agency/department.
3. I would not advise a close friend to join my agency/department. (R)

Organisational Involvement

4. I am not willing to put myself out just to help the agency/department. (R)
5. In my work I like to feel I am applying some effort not just for myself but for the agency/department as well.
6. I am determined to make a contribution for the good of my agency/department.

Organisational Loyalty

7. I sometimes feel like leaving this employment for good. (R)
8. Even if my agency/department was not paying me well financially, I would be reluctant to change to another employer.
9. The offer of a small increase in remuneration by another employer would not seriously make me think of changing my job.

Section 3

Snell's (1992) instrument: Measure of three types of controls

Please indicate the extent to which the following statements reflect the work environment in your agency/department (1 = not at all, 5 = to a great extent).

Input controls

1. Employees must undergo a series of evaluations before they are hired.
2. Employees receive substantial training before they assume new responsibilities.
3. New employees undergo orientation regarding organisational activities.
4. Our agency/department has gone to great lengths to establish staffing policies and procedures.
5. Employees are expected to adhere to established staffing policies and procedures.
6. Employees are given ample opportunity to broaden their range of talents.
7. Our agency/department provides on-going training and skill development to employees.

Behaviour controls

1. Employee performance is evaluated based on their ongoing behaviour.
2. Employees are held accountable for their actions, regardless of results.
3. Employees are monitored to ensure that they are complying with staffing policies and procedures.
4. Supervisors regularly monitor the actions undertaken by employees.
5. Employees are accountable for areas of responsibilities that are defined by top managers.

Output controls

1. Performance evaluations place emphasis on results.
2. There are clear and planned performance targets set for employees.
3. Pre-established targets are used as a benchmark for evaluations.
4. Regardless of what employees are like personally, their performance is judged by results achieved.
5. The rewards employees receive are linked to results.
6. Employees who do not reach objectives receive a low performance rating.

The Role of Accrual Accounting and Information Systems on Asset Management Practice in the Malaysian Public Sector: A Conceptual Paper

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<https://doi.org/10.58458/ipnj.11.01.03.0069>

Received: 21 June 2021

Reviewed: 23 June 2021

Accepted: 20 October 2021

Abstract

Purpose: The purpose of this study to identify and examine the role of accrual accounting and information systems in asset management practice in the Malaysian public sector. This study is important to enable the government take appropriate measures to enhance asset management practice in view of its increasingly crucial role in optimising government performance.

Design/Methodology/Approach: This study identifies and examines in detail the role of accrual accounting and information systems in asset management practices in the Malaysian public sector by reviewing the issues commonly raised in the Auditor-General Reports, particularly on asset management. The conceptual aspect consists of an extensive search and analysis of secondary sources of information through references and a review of academic articles, Auditor-General's Reports, news in print and other media, and publications pertaining to asset management.

Findings: Previous studies show that accrual accounting and information systems have affected asset management practice in the public sector. Accrual accounting measures the performance of an organisation by recognising economic events that provide more accurate financial information, particularly on the organisation's assets and liabilities. Information systems provide substantial growth opportunities for asset

management, allowing systematic and timely data collection, processing, distribution, and information sharing, which can assist in managing assets throughout their life cycle.

Originality/Value: This concept paper provides valuable addition to the current knowledge base, particularly on the role of accrual accounting and information systems on asset management practice.

Keywords: Asset management practice, public sector, accrual accounting, information systems

1.0 Introduction

Asset management (AM) is a "joined in" organisation activities to realise value from its controlled resource. It is a strategic and integrated process involving various disciplines such as engineering, operations, management, and maintenance to gain the greatest benefit in an asset's life cycle and its returns (Amadi-Echendu et al., 2010; Laue et al., 2014). AM requires participation from different areas, primarily human activities, to manage individuals who control assets and incorporate asset-related policies in the operational and organisational frameworks, particularly asset maintenance (Nel & Jooste, 2016). The importance of AM has been discussed, developed, and taken into account for several decades. AM is not considered a new discipline, but it is constantly evolving (Amadi-Echendu et al., 2010; Wijnia, 2016).

However, various Auditor-General's Reports (from 2014 to 2019) have revealed the dismal fact that most government agencies are unable to manage their assets efficiently. Wastefulness, extravagance, and mismanagement have been detected, indicating that public money has not been spent wisely. Over the years, their AM performance has ranked the lowest compared to other financial management accountability index elements. The issues concerning their weak AM performance have also been raised repeatedly by the Auditors-General indicating the seriousness of the problem. However, improving AM practice is a complex process influenced by several factors in accounting practice (Leviäkangas et al., 2019; Syed Ali et al., 2019) and information systems (Al Marzooqi et al., 2019).

Given that AM is the process of managing an organisation's physical assets and the recording (El-Akruti & Dwight, 2013) and reporting of information pertaining to the assets, the organisation's accounting type is vital as it influences how it manages the assets (Biswas et al., 2015). Reporting asset information such as historical cost and book value varies depending on the type of accounting used. In Malaysia, the government has adopted an accrual accounting method starting from 2018 which requires that all assets and liabilities of public sector agencies must be accounted for. However, a transitional exemption period of

three years was incorporated for the government to adjust to the accrual reporting stipulation (MPSAS 33), so the government is obliged to present an accrual financial statement at the beginning of the financial year 2021.

The adoption of an accrual accounting foundation in the public sector can increase the efficacy and efficiency of asset management in the public sector (Campbell, 2015; Hladika & Percevic, 2014). However, the internal auditors in the agencies that contribute to the financial statement have raised concerns on the accuracy of the beginning balance of the assets, as the asset value have been capitalised inaccurately. According to Abdullah and Muhammad (2020), the asset opening balance was overstated due to no depreciation charge being commenced by the system as of July 2019.

The Malaysian government has developed the asset information system known as Movable Asset Management Monitoring System (SPA) and Immovable Asset Management system (mySPATA) to manage the data effectively. The available data are then integrated into an accounting information system called the Integrated Government Financial Management Accounting System (iGFMAS) for financial reporting purposes (Abdullah & Muhammad, 2020). The information system has assisted the AM performance of government agencies in registering, monitoring the movement of assets, maintenance, and disposal records (Mahadi & Hussin, 2007; Sanjaya & Utama, 2020; Shah et al., 2017). Throughout an asset's life cycle, the volume of data and information about the asset continues to grow resulting in a large volume of data that need to be stored over an extensive period. However, mySPATA only has the capacity to record information based on asset categories such as buildings, land, and machinery without registering maintenance costs, thereby making it difficult for the government to obtain information on an asset's overall cost and determine whether the cost needs to be capitalised or expenses paid off (Basnan et al., 2013).

The issues encountered in AM practice include insufficient information on the assets stored in the system, and inaccurate information on the assets opening balance, thus affecting the effectiveness, efficiency, and economics of AM performance in government agencies (Buang, 2011).

This study sought to identify and explore the issues concerning the role of accrual accounting and information system on the AM practice in the Malaysian public sector. This study can assist the government to take appropriate measures in enhancing AM practice because it is becoming increasingly crucial in optimising government performance. This study was conducted by reviewing and analysing of secondary sources of information through references and a review of academic articles, Auditor-General's Reports, news in print and other media, and publications pertaining to asset management.

2.0 Literature Review

The literature review is divided into three subsections namely asset management (AM), AM practice in the Malaysian public sector, and factors affecting the effectiveness of AM practice.

2.1 Asset Management (AM)

The term “asset” can be defined in several ways. The International Accounting Standards Board (IASB) and the Malaysian Public Sector Accounting Standard 1:7 (MPSAS 1) define an asset as a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. Thus, an asset is a resource that is owned or controlled by an organisation so that it benefits from its use or it generates revenue and supports the organisation's operations.

In accounting, asset is classified into two types that is current assets and non-current assets (IAS 1.66). Current assets are mostly held for trading purposes and are likely to be liquidated within 12 months of the reporting period. Examples of current assets include cash and cash equivalents, short-term investments, accounts receivable, tax recoverable, inventories, and prepaid expenses. While, the non-current assets are those that are kept for more than 12 months following the reporting period, such as long-term investments and property, plant and equipment (MPSAS 17) and these include land, buildings, equipment, furniture, vehicles, and infrastructure.

According to Fernholz and Fernholz (2006), assets are generally divided into tangible and intangible assets. Tangible assets are further classified as movable assets and immovable assets. Movable assets include equipment, furniture, and automobiles that are not permanently attached to real estate and can be relocated and utilised following relocation, whereas immovable assets, such as land and buildings, cannot be transferred or removed (GAMP, 2009). This study focuses on the tangible assets which include movable assets and immovable assets that are highlighted in the Government Asset Management Policy, 2009 because most of issues raised by the General Auditors are related to this kind of assets.

It is a given that assets are indispensable resources in the public sector that enable the government to provide services to the public (Sekera, 2019). Thus, it is important for assets to be managed effectively and efficiently, through an AM system, to ensure that services are delivered efficiently and do not have a negative impact (Backer & Yusoff, 2015).

Asset management can be defined as systematic and coordinated activities and practices through which an organisation optimally and sustainably manages its assets and asset systems, associated performance, risks and expenditures over their life cycles to achieve its organisational strategic plan (PAS 55-1:2008). The United States Department of Transport described AM as a comprehensive process for cost-effective asset maintenance, upgrading and operations (FHWA, 2007). In short, AM can be regarded as a combination of

engineering fundamentals, organisational processes and economic theory.

AM comprises several processes in maintaining an asset's function to ensure it performs effectively and has cost and risk control to accomplish the objectives and ensure service delivery by agencies (TAMM, 2009). Managing the assets efficiently allows an organisation to create, enhance, and sustain the organisation's business. Thus, the key challenge in achieving effective AM practice is establishing alignment between assets objectives and managing multiple actors with different interests (Schraven et al., 2011). Effective AM allows an organisation to increase economic productivity (Sara et al., 2021) and save money in the long term (Mastroianni et al., 2021). Hence, the government must formulate sufficient AM policies (Hanis et al., 2010) in order to achieving it goals.

The focus of AM is on the efficient management of an asset's life cycle, from acquisition, usage, maintenance, and disposal. The emphasis should not be on the revenue it might create for an organisation, but on the results, risks, and costs to get the best solutions.

2.2 Overview of Asset Management Guidelines in the Malaysian Public Sector

The government of Malaysia has issued several guidelines to ensure a systematic approach to incorporate AM and comprehensive asset procedure, as shown in Table 1 to enable government agencies to deliver services efficiently and effectively as part of the New Public Management (NPM) public sector reforms.

Table 1: List of Procedures and Circulars Issued by Government

Year	Procedure/Circular
1967	The Factories and Machinery Act (1967) outlined safety and health standards requirements.
1974	Rules were circulated for the maintenance of buildings, public roads, sewage systems, and the role and responsibilities of the Public Works Department.
1992	The Guidelines for Total Quality Management in The Public Service was issued.
1995	General Circular Letter No. 2 on the 'Maintenance Management – Establishment of Planned Maintenance System' was issued to enhance the Public sector's maintenance management system.
2007	Treasury Circular No. 5 provided guidelines for the management of movable assets.
2009	General Circular No. 1 outlined the government's policy and principles on total asset management.

(Source: Buang, 2011)

The government has shown its commitment to improving AM by ensuring it is used to measure the economic performance of government agencies based on the financial management accountability index. It had taken the initiative to issue procedures concerning AM since 2007 through its Treasury Circular No. 5/2007.

Previously there had been no comprehensive set of guidelines or standards on the procedures regarding AM. The guidelines were only available in several separate documents,

including Treasury Instructions (APS), Treasury Guidelines – Store Management Procedures (PP-TPS), Treasury Circulars (PP), Treasury Circulars Letters (SPP) and General Circulars. This situation had resulted in employees being unable to manage assets efficiently and in a timely manner because they had to refer to various documents.

To strengthen AM, the government launched the Government Asset Management Policy (GAMP) and Total Asset Management Manual (TAMM) in 2009. This comprehensive AM policy, the first of its kind, outlined the direction, principles, and strategies for implementing AM that every government agency had to adhere to. GAMP requires a comprehensive and integrated approach to AM at all stages, including the planning, creation, usage, maintenance, inspection, disposal, and write-off procedures to ensure that the assets are in good condition, safe to use, cost-effective, and long-lasting. Unfortunately no other procedures concerning AM in the public sector had been issued after 2009; thus, prompting the Ministry of Works to call for the GAMP to be reviewed to determine whether all government assets were being managed in a systematic, holistic, and sustainable manner (Kannan, 2018).

2.3 Asset Management Practice in the Malaysian Public Sector

As mention in previous section, the Malaysian Public sector has used the GAMP as the main set of guidelines for managing assets. Total Asset Management (TAMM), on the other hand, was established through General Circular 1/2009 to support the GAMP emphasis on managing government property assets systematically and holistically to achieve optimal benefits. It identifies the AM implementation strategy, which involves governance, human resource, system and procedure, and technology. Four categories of assets are explained in the TAMM, as shown in Table 2.

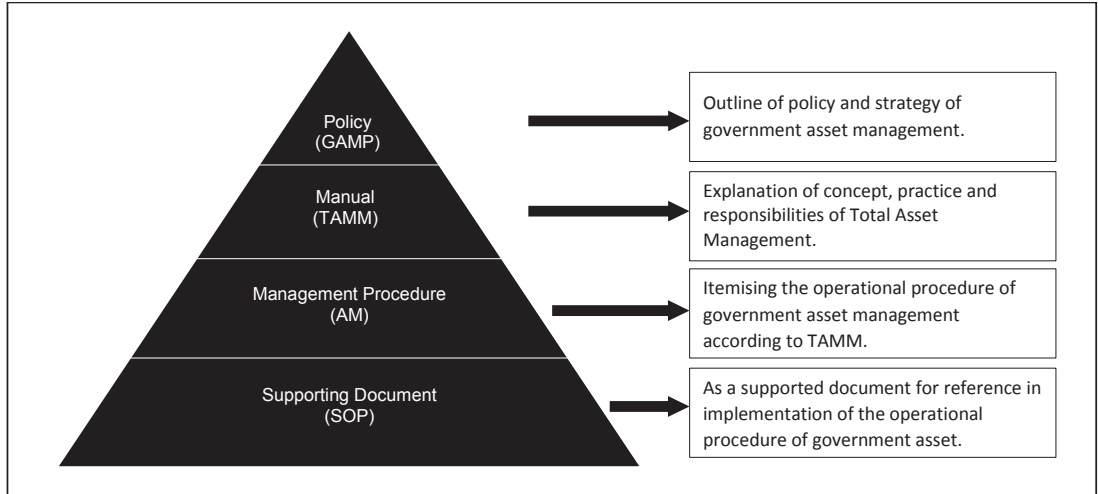
Table 2: Categories of Assets

Categories	Definition
Movable Assets	Assets that can be moved from place to place, including assets supplied or attached to the building. Movable assets are divided into two groups, namely capital assets and inventory. Examples of movable assets are computer hardware, machinery, vehicles, portable air conditioners, portable fans, hospital beds, medical equipment, furniture, curtains, rugs, and dishes.
Immovable Assets	Permanent and immovable assets, including land, infrastructure, and buildings. Examples of immovable assets are land gazetted and supervised for development by an agency, roads, bridges, tunnels, airports, jetties, irrigation, drainage, water distribution systems, sewage plants, office building complexes, airport terminals, hospitals, schools, and military camps.
Life Assets	Life assets are animated assets, including vegetation, animals, and fish. Examples of life assets are trees, plants, landscapes, animals in the zoo, and animal research and operational needs.
Intellectual properties	Non-physical assets that are the products of minds, including creations (symbols, names, and images used in trade), shapes (patterns or decorations), geographical references, literary works, and works of art. Examples of intellectual properties include computer software, research findings, books, and cultural artifacts.

(Source: TAMM, 2009)

The public sector structural documentation of AM is divided into four (4) levels: policy, manual, procedure, and supported document for TAMM. It consists of strategic, tactical, and operational aspects to be managed systematically by users and officers. The structure of AM documentation is shown in Figure 1.

Figure 1: Malaysian Government’s Asset Management Structural Document



(Source: TAMM. 2009)

The Ministry of Works is given the authority as a governance body to implement the GAMP and TAMM. However, as evident in Table 3 below, different agencies are entrusted with the enforcement of the implementation of TAMM.

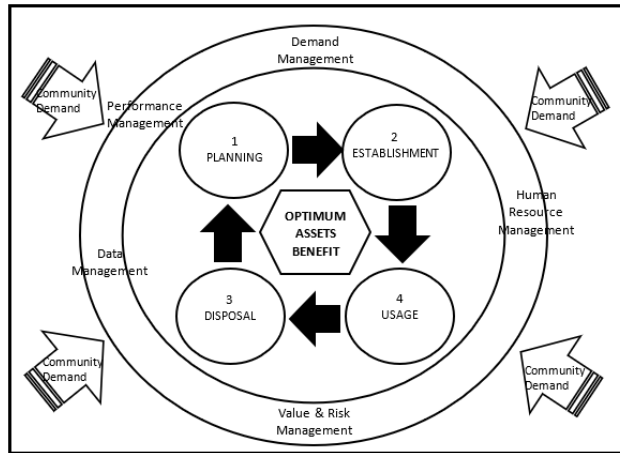
Table 3: Enforcement Agencies for TAMM Implementation

Categories of Assets	Authority
Movable asset and life asset	Ministry of Finance (MOF)
Immovable asset (Building and Infrastructure)	Ministry of Works
Immovable asset (Land)	Department of Chief Director of Lands and Mines
Immovable asset (Sewage)	Ministry of Energy and Natural Resources
Immovable asset (Irrigation Drainage)	Department of Irrigation and Drainage

(Source: TAMM, 2009)

The AM practice should focus on the optimal use of cost-effective assets and include user-friendly, environmental-friendly, energy efficiency, security, and privacy controls (Jephson, 2018). This is clearly stated in the TAMM. The important element recognised in the TAMM is the life cycle of an asset. Thus, the general model of TAMM is based on the life cycle of an asset and it requires an asset to be managed from the planning stage until it is disposed of. This process is vital to ensure that productivity and services are delivered effectively without any interruption. The general model of TAMM is shown in Figure 2.

Figure 2: Total Asset Management General Model



(Source: TAMM, 2009)

Each phase in the life cycle of an asset involves decision-making which is both challenging and has long-term effects. Therefore, the elements in each phase need detailed consideration for better usage and effectiveness. The activities involved in each phase are described in Table 4.

Table 4: Description of Phases of an Asset’s Life Cycle

Phase	Description
Asset planning	The activity to plan the detailed needs for new assets is known, identified, designed, and prepared.
Asset establishment	The activity to create and own the asset through the ownership procedures is conducted.
Asset usage	The activity to use, operate, and maintain the asset is carried out.
Asset disposition	The activity to dispose off the asset when its services are no longer required, or lost, or not economically used is carried out.

(Source: TAMM, 2009)

2.4 Factors Affecting the Effectiveness of Asset Management (AM) Practice

Over the previous few decades, demand for effective AM practice has steadily increased (Wijnia & Croon, 2015) and AM activities are now treated as are core functions of organisational strategies (Pais et al., 2020). Since effective AM plays a major role in delivering better service, it should focus on performance and outcomes (Federation of Canadian Municipalities, 2018). Therefore, a collaborative and coordinated approach across the organisation’s change processes is required for its successful implementation (Male et al., 2006).

The effectiveness of AM is influenced by several factors such as policy, people and technology to ensure strategies are executed accordingly. The achievement of good AM

depends on the availability of appropriate, qualitative, and timely information on assets and the extensive knowledge of asset managers (Hastings, 2015) and accounting practice (Abdullah & Muhammad, 2020; Syed Ali et al., 2019), particularly accrual accounting. Therefore, accounting practice and information systems play important roles to ensure that organisations have good AM, i.e. one that creates the best possible use of the resource and customer support and efficiency, aligned with the balance of financial goals (Too, 2010). To effectively manage AM, an interdisciplinary approach should be used, particularly by bringing together disciplines such as accounting and information systems to ensure that the assets are managed systematically, thereby reducing error and delivering the intended results in a timely manner.

2.4.1 Accrual Accounting

Accounting plays an essential role in monitoring the movement of financial resources and the organisation's financial position (Biot-Paquerot et al., 2006) by providing accounting information that is useful for planning, decision making, monitoring, and informing users through its financial statements. Generally, there are two types of accounting methods: cash basis and accrual basis (Zarandi et al., 2013). Both of these methods have been applied in both public and private sector accounting. Initially, cash basis accounting was used by both public and private sectors, but when the GAAP was introduced, accrual basis began to be practiced by the private sector (Andy, 2003).

Traditionally, the public sector has relied mainly on cash-based accounting, which concerns only transactions involving cash movements and primarily designed to increase public money control (Monsen, 2001). Transactions are recorded in the accounts as to when cash is received or payments made. It does not recognise revenue that is earned but not yet received, or expenses that have been incurred but have not yet been paid. Therefore, the revenue and expenditure reported in the financial statement is only the actual cash receipts and payments made (Guthrie, 1998). This leads to an inaccurate view of the financial position of an organisation due to assets and liabilities not being reported.

Accrual accounting, on the other hand, does not only include cash flows, it also recognises any transactions related to revenue and expenditures that occurred in the accounting period regardless of whether cash has been paid or received. Accrual accounting has been widely used in the private sector since accrual leads to transparency and accountability for any transaction. With the demand for more accountability and transparency in the public sector governments have been motivated to adopt accrual accounting for financial reporting and budgeting concerns (Champoux, 2006). It provides comprehensive information on the operating performance and financial position of the organisation while improving the comparability of financial statements for different periods.

Since the 1980s, there has been debate on whether accrual accounting would provide an accurate measure of the full cost of the services delivered in the financial statements and be

a more precise predictor of the success of the government programmes to support the New Public Management (NPM) reform agenda (Hood, 1995). According to Chan (2003), the most critical issues relating to the public sector accounting reform are the financial statements requiring the government to collect information on its assets and liabilities. The accrual-based accounting approach provides more comprehensive financial information in terms of transparency of the costs involved in public services and improved AM, thus providing more accurate information for better fiscal decision-making (Flynn et al., 2016; IFAC, 1996; Saleh, 2008). Accrual accounting can help a government strengthen prudent fiscal management as well as improve the efficiency of financial management and accounting that has an impact on the long-term economy.

2.4.2 Information Systems

Information systems lead to organisational success through intangible, complementary human and business resources such as flexible culture, monitoring, and strategic planning (Powell & Micallef, 1997). They have a widespread influence on almost all facets of our culture; for example, information system has affected how we buy goods, interact with others, access government services, and control our finances. Information system has also profoundly influenced AM, particularly in the recording, registration, maintenance, asset movements, and disposal of assets.

The data and information about an asset are continuously increasing over its life cycle. Organisation need to use technology to assisting them in dealing with those information. According to Roberts et al. (2018) a new technology, such as data modelling, can help asset managers align their strategic and tactical expertise to the data management capabilities required. Technology also allows managers to sketch asset data and update digitally during the planning process to promote AM and future development (Sankaran et al., 2018). Thus, it is obvious that technology can assist an organisation in managing its assets more efficiently by managing asset information more effectively.

Information systems are the most critical components of the modern world has and have provided organisations with significant growth opportunities to obtain, process, distribute, and exchange information systematically and in a timely fashion (Almazán et al., 2017). Besides, they contribute to close geographical differences, making it possible for workers to be more effective, and this is reflected in enhanced procedures, administration, and information processing, that positively affect the organisation's efficiency and competitiveness (Bakos & Treacy, 1986). They enable organisations to access information from different locations, thereby ensuring better decision-making on organisational operations.

Improving business and data reporting processes is critical for using AM information systems (Mathew et al., 2008). The process of asset information has to be properly scrutinised with timely performance evaluations and inspections for management information systems to be acceptable in terms of the accuracy of the data and a satisfactory level of detail

(Comptroller's Handbook, 2012). AM should be aligned with technological change, encompassing precision maintenance, cloud-based data storage and analysis, the Internet of Things (IoT), artificial intelligence (AI), and edge computing, i.e. computing performed close to the data source (Blache, 2019). Implementation of an information system can radically change an organisation's traditional AM practice and enable it to become more efficient.

3.0 The Role of Accrual Accounting and Information Systems in Asset Management Practice

Previous literature revealed that accrual accounting and information systems have affected AM practice. The relationship between accrual accounting, information systems, and AM practice will be reviewed and discussed in this section and proposed as a factor that has a direct impact on AM practice in government agencies.

3.1 Relationship between Accrual Accounting and Asset Management Performance

Asset management is significantly impacted by accounting reforms in the public sector with the transition from cash basis to accrual basis accounting (Flynn et al., 2016; Kraus, 2004). The accrual accounting requirements and accounting principles generally determine the approach to accounting assets, measuring asset values and recognising assets across their life cycle which are stated in the financial statement. This information in government financial statements is important because it enables the public to evaluate the level and the type of assets invested using public money (Ehalaiye et al., 2020) and increases the credibility of the financial statements and public confidence in the government's financial management.

Jallad and Darras (2015) found that accrual accounting strengthens the stewardship of assets and liabilities: it allows efficient control of government resources to enhance productivity and cost-effectiveness since all the transactions are registered. Thus, it helps government agencies resolve the lack of information on asset movement without reporting the financial implications in stakeholders' financial statements.

Agburuga (2018) also argues that accrual accounting allows government agencies to enhance the financial planning of their assets and liabilities as enables better decisions to be made in planning for the acquisition of future assets for development or disposal of existing assets and working capital requirements. Since accountants are implicitly involved in the process or management of assets, their participation is strongly encouraged to ensure that the data reported are consistent with the asset's physical state, particularly in the process of recognising assets and disposal of assets (Abdullah & Muhammad, 2020).

Christiaens (2004), on the other hand, has revealed that accrual accounting does not typically account for the unique governmental features of a government's capital assets; hence it does not reflect the AM performance. Besides, accounting practice, according to Vaughan-morris (2014), does not also materially influence the organisation in managing its

assets efficiently since generally most organisations make decisions by focusing on cash flows. Accrual accounting does not affect when cash inflows or outflows occur since revenue and expenses are reported when they are earned rather than when the income is received or payments made.

Huweish and Alshujairi (2014), however, have argued that the trend towards accrual accounting in the public sector is important to ensure transparency, efficiency, and performance management, and this has an impact on the government's performance and the nation's development. Moreover, the implementation of accrual accounting encourages a general improvement in AM and an increased understanding of the cost of maintaining and managing assets (Syed Ali et al., 2019) and aid policymakers and the public by placing a greater emphasis on the proper acquisition, disposition, and management of government assets (Abdullah & Muhammad, 2020; Campbell, 2015; Hladika & Percevic, 2014). Therefore, it is clear that accrual accounting can result in better AM practice because it is more transparent and requires every asset-related transaction to be completely recorded, as well as facilitating asset-related decision-making.

3.2 Relationship between Information Systems and Asset Management Practice

Asset management information systems have aided in the improvement of organisational and data reporting procedures (Mathew et al., 2008), and the introduction of an information system has led to better AM practice because it reduces error and promotes efficiency (Sanjaya & Utama (2020). AM processes are interdependent with other processes, including business planning and product development, which require prompt and greater information sharing and collaboration with other business community functions. As such, more effective measurement frameworks are required to enable organisations to maximise their information system benefits in performance, effective control, and management of their assets (Haider et al., 2006).

The public sector requires a dynamic and integrated asset management system that is accessible to government agencies and has integration or direct interfaces with the accounting information system's general ledger (Flynn et al., 2016; Isa, 2001). The information on assets in the general ledger is important in accrual financial statements as it provides the details of the establishment of the assets in terms of financial resources and the acquisition period. An efficient information system can then facilitate the process of integration (Abidin & Zulkefli Mansor, 2019) and review of asset information in the general ledger as well as the asset registration records in the government agencies.

Previous literature has provided empirical evidence that information systems positively affect the organisation's performance, particularly AM activities (Maletič et al., 2018, 2016; Arlini et al., 2014; Ekayanti et al., 2018; Khresat 2015).

While most studies have reported a significant connection between the information system and AM activities, Ismail et al. (2019) and Lucky et al. (2014) argue that the correlation between AM and information systems is insignificant due to the lack of computer skills among the staff especially in government agencies: most elderly employees prefer the traditional approach and show little interest in acquiring computer skills, resulting in a negative effect on the organisation's administration (Ismail et al., 2019). The government should address this issue in order to maximize the efficiency with which information systems are used in managing government assets.

The information system for government assets is crucial because it involves various assets in different ministries and for different purposes (Buang, 2011) and therefore, the quality of the data generated in the system is crucial for the organisation to depend on (Herder & Wijnia, 2011). Fernandez et al. (2017) have noted that information systems assist in rapid and reliable decision-making and minimise documentation costs, and allows users to access information at any time they need it. The AM information system improves the visibility, usability, and confidence of asset knowledge holdings across the organisation and facilitates asset life-cycle management (Haider et al., 2006; Hailu, 2014) by ensuring that accurate information on assets is collected, stored, and is readily available to support evidence-based AM decision-making.

During each phase of the asset life cycle, various types of information are required to facilitate the AM process including workflows, planning, and monitoring. The information could be represented as a vital part of an asset-intensive organisation (Haider et al., 2006). How information is planned, captured, processed, preserved, used, and disposed of by users can affect the organisation's AM performance (Lin et al., 2007). Thus, an information system has the ability to impact the effectiveness of the AM, which is to assist the organisation in managing its asset information throughout the asset life cycle.

4.0 Conclusion

This study analysed the relevant literature to understand better the AM landscape and the role of information systems and accounting practice in AM. The literature review discussed the significance of AM and provided an overview of AM practice in Malaysia. It revealed that the government is committed to reviewing and enhancing the quality of AM to ensure it is managed in a systematic, holistic, and sustainable manner; hence, the issuing of policies and procedures regarding AM since 1967. As mentioned in previous studies, effective AM allows an organisation to sustain its business by increasing economic productivity and enabling the organisation to save money in the long term. In the public sector, the money saved can be used for other purposes that benefit the public.

The importance of AM was discussed in the literature review to explain why the government needs to manage its assets effectively. This study is expected to help researchers and practitioners improve AM practice by identifying and understanding the

role of accrual accounting and information systems in AM practice, and eventually resolving the repeated issues, i.e. the shortcomings, raised by auditors and enhancing public money management credibility. Furthermore, by understanding the role of accrual accounting and information systems, the government can highlight it in its current policies i.e., Government Asset Management Policy and Total Asset Management Manual.

Accrual accounting has contributed to a positive impact on AM, particularly on the financial data and reporting of asset values accurately and transparently. Accrual accounting allows for better information on the performance and financial position of an organisation that is closely related to assets and liabilities because such information is essential in resource management. Accrual accounting provided for the cost of an asset to be allocated for the provision of services or goods, the total costs associated with delivering such services, and the cost of using the asset over its useful life cycle. With its matching concept, accrual accounting ensures that actual costs are recognised in the year in which they occur. Moreover, since it is expected that an asset contributes to the generation of benefits throughout its useful life, the cost of the asset is distributed throughout the accounting periods in which the resource is utilised.

While the information system is a tool that enables the delivery of improved government services to its stakeholders by boosting the public sector's efficiency and accountability, implementing an asset information system fundamentally changes the way things are done, in this case, the asset management (AM) process. This is because information systems are capable of enhancing operational and data reporting procedures by delivering accurate and timely data on assets. Having that information can assist organisations in making decisions.

The study is based on the Auditor-General Reports and the literature review to fit the proposed concept. In the future, it is suggested that quantitative research be conducted to evaluate the proposed conceptualisation relationship between accounting practice and information system to AM Practice.

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Development of a Sustainable Development Goals Disclosure Index (SDGDi) for Malaysian Local Authorities

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<https://doi.org/10.58458/ipnj.v11.01.04.0070>

Received: 16 May 2021

Reviewed: 01 July 2021

Accepted: 01 November 2021

Abstract

Purpose: The objective of this paper is to describe the development of a sustainable development goals disclosure index (SDGDi) for Malaysian local authorities.

Design/Methodology/Approach: The paper presents an inclusive examination of international and national guidelines relating to both financial and non-financial sustainable development goals information in disclosures with the aim of developing the above-mentioned index.

Findings: The final 23 categories and 150 items under review have been developed into an instrument, which is the proposed SDGDi for measuring the commitment undertaken by local authorities in advancing the SDG agenda.

Practical Implication: This paper contributes to the development of an SDG disclosure index that may be most appropriate for local authorities to use in developing countries. It addresses the issues related to best practices for local authorities in achieving the SDGs.

Originality/Value: The paper presents the first index to be developed for Malaysian local authorities to use. It could serve as the model for adoption by local authorities in other developing countries.

Keywords: SDG, disclosure index, local authorities, developing countries.

This article is part of a research on Sustainable Development Goals Disclosure on Malaysian Local Authority Websites, supported by the Accountant General's Department of Malaysia through *Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Bil. 1 Tahun 2021* (JANM.IPNC PD.100-3/3/2 Jld. 2(8)).

Introduction

At the outset of the 21st century, the UN decided to address pressing concerns related to sustainable development in several areas. The Millennium Development Goals (MDGs) in 2000 principally focussed on social outcomes in developing countries. Revolutionised by the need for more action in addressing sustainability issues, in 2015. The UN developed the 17 Sustainable Development Goals (SDGs) labelled the 2030 Agenda for Sustainable Development by the United Nations (UN) that was adopted by the member states. The SDGs lays out a comprehensive range of sustainability attributes such as the environmental, social, and economic objectives for both developed and developing countries. The New Public Management (NPM) doctrine highlights the importance of performance accountability that calls for improved public accountability by the public sector entities. As such, there is a need for managers in the public sector to be accountable for the performance and financial management of entrusted resources (Hooks, Tooley, & Basnan, 2012). One way to discharge public accountability is by implementing sustainability reporting.

The concept of sustainable development has been implemented in Malaysia since the 1970s through the New Economic Policy (NEP), with the aim of eradicating poverty and providing incentives to improve and create a more balanced society. In 2009, the Malaysian government renewed its commitment to sustainable development with the New Economic Model (NEM) emphasising the objective of achieving 'high income, inclusivity, and sustainability'. This is consistent with the components of the SDGs on the economy, social and the environment (Economic Planning Unit, 2017). Malaysia adopted the Agenda 2030 for Sustainable Development (Agenda 2030) on 25 September 2015 at the UN General Assembly in New York. The SDGs was to be implemented in Malaysia through its National Road Map in three phases, namely; Phase 1 (2016-2020) by prioritising the SDGs according to the 11th Malaysian Plan (11MP); Phase 2 (2021-2025) by focusing on the post 2020 goals and targets; and Phase 3 (2026-2030) by addressing the remaining goals and targets in line with Malaysia's capacity and global role. The Agenda 2030 has become an important instrument in Malaysia gaining a high-nation status. It is evident by the inclusion of the SDG principles in all aspects of the Malaysian development plan in Phase 1 (the period 2016 to 2020) under the theme, "Anchoring Growth on People". This theme is particularly relevant to the local local authorities as they are the closest tier to the community.

To achieve the UN SDGs, the commitment from local institutions is crucial. Every local authority needs to accelerate its efforts towards realising its accomplishment level in meeting the SDGs by identifying goals and targets, realising them through tremendous efforts, and building more effective and well-performed governance systems.

The SDGs agenda has encountered significant challenges due to the global demand for organisations to address economic welfare, environmental quality, social cohesion, and prosperity for future generations (Avrampou, Skouloudis, Iliopoulos, & Khan, 2019). Organisations have tried to meet this challenge by communicating with their stakeholders through incorporating SDGs in their non-financial statements, thereby increasing their

accountability concerning their contribution to society (Bebbington & Unerman, 2018). Notwithstanding the increase in the number of new forms of regulation on non-financial reporting, the approach towards SDG reporting is still voluntary (Pizzi, Venturelli, & Caputo, 2020) and it is further compounded by the absence of standards on SDG reporting.

The 17 SDGs address the global challenges related to poverty, inequality, and environmental degradation and there is increasing awareness and urgent calls for private and public sector entities and communities to address them. The SDGs proposes an emphasis on collective actions to tackle them (Adams, Druckman, & Picot, 2020). Since the local authorities are the organisations closest to the community, they are at the forefront to address the sustainability issues related to the 17 SDGs, through the proper alignment of their interventions and indicators with the SDGs which are beneficial in facilitating resource mobilisation and increasing legitimacy among stakeholders (Günzel-Jensen, Siebold, Kroeger, & Korsgaard, 2020). In the words of Niemann and Hoppe (2018, p. 203), SDGs have become a very influential blueprint and are regarded as a "social license to operate". Nowadays, just like business communities, local authorities in developed countries are aware of the need for their organisations to achieve the SDGs (Izzo, Ciaburri, & Tiscini, 2020). However, SDGs impact reporting is still in a state of flux. While most organisations with sustainability initiatives are aware of the 2030 Sustainable Agenda of the United Nations, many are still trying to figure out how to map their actions to align with the SDGs using their existing approaches to sustainability (Bridges & Eubank, 2019). Therefore it is not surprising that the level of awareness in developing countries, including Malaysia, is still at low (Mohammed, Kassim, Sutainim, & Amirrudin, 2020). As such, the level of disclosure could vary significantly between developed and developing countries.

Despite the importance of SDGs compliance and tremendous pressure by stakeholders, Malaysian local authorities are still lagging in their disclosure of their commitment towards achieving the 17 SDGs to establish their legitimacy in the eyes of their stakeholders. As mentioned above, this can be attributed to the lack of proper reporting procedures. To fill this gap, the researcher(s) set out to develop an SDG disclosure index for use by the local authorities. The index can help measure the level of disclosure on issues related to the SDG initiatives undertaken by the local authorities on their official websites. The index comprises 150 key items categorised under 24 themes was developed through a comprehensive analysis of several global reporting criteria and supplemented with a few local standards and reporting guidelines for local authorities.

In the current development and reporting trend, website-based reporting is the most effective medium for broader and faster coverage as well as the disclosure and dissemination of information to the stakeholders. Websites allow organisations to interact with their stakeholders as well as citizens (Midin, Joseph, & Mohamed, 2016), thereby serving as a more efficient medium to access information for decision-making purposes.

This paper should contribute to the literature on SDGs implementation by presenting the steps in the development of the SDG disclosure index for use by local authorities that may be a fit for

developing countries. It addresses the issues on what should be done by the local authorities in achieving the SDGs. Perhaps, the index can be used by the government in developing policies related to sustainability issues and enhancing the good governance of government bodies.

The paper continues with a review of the relevant literature followed by the methodology on the development of the SDG Index. The conclusion provides a summary of the main points covered in the paper.

Literature Review

Conceptual Framework and Dimensions in SDGs

The Sustainable Development Goals (SDGs) were accepted in 2015 by the Heads of States and Governments and High Representatives at the United Nation Headquarters in New York, to serve as the guideline for promoting sustainable development through partnerships. It is centred on improved international coordination, focusing on the demands of the underprivileged and most susceptible, and involvement of all nations, interested parties, and the public by realising sustainable development in several aspects i.e. economic, social and environmental by 2030 (Agenda 2030). In particular, the United Nation resolved:

...between now and 2030, to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and empowerment of women and girls; and to ensure the lasting protection of the planet and its natural resources...

(United Nation, 2015, p. 6).

However, executing the 17 SDGs and their 169 indicators that were identified in the Agenda 2030 proved to be a daunting task especially for less developed economies like Malaysia. Localising the Agenda comprises two main processes, namely; planning and implementing, as well as monitoring the SDG progress. According to Almeida (2019), there are too many challenges in selecting an appropriate indicator framework for measuring progress towards sustainable development at the local level: SDGs demand a combined approach, but there are many interactions and inter-linkages inserted within them, which are complicated and disorderly, thereby making them very challenging.

SDG Reporting

SDG reporting is communicating the effect of a business's economic, environmental, and social sustainability and how it adapts to the SDGs (Fonseca & Carvalho, 2019). Business organization performs a major task to establish the accurate association between the stakeholders and the community via external communication.

SDG reporting is known by a variety of names, such as corporate reporting, integrated reporting, corporate sustainability reporting, social reporting, non-financial reporting, and triple-bottom-line reporting.

Each of these reports has its own advantages and contributions to gaining legitimacy in the eyes of the stakeholders. Corporate sustainability reporting can be an excellent aid in tackling public and stakeholders' needs; while sustainability reporting can decrease disparities in information retrieval and enhance the status of the various stakeholders. In addition, businesses can generate the latest competitive advantages by revealing their social and environmental obligations and commitments to stakeholders (Rosati & Faria, 2019).

Integrated reporting has been established as one of the most significant management and accounting innovations in business that has been accepted by businesses globally (Izzo et al. 2020). In short, SDGs reporting is seen as a powerful tool to catch up with the latest business model as it provides the setting for innovative sustainable evolution to decrease risks, and boost benefits for organisations with regard to innovation and reputation, as well as efficiency.

SDGs and Accountants

Accountants play a vital role in providing transparent and excellent quality corporate reporting that is crucial to guarantee financial constancy and sustainable development and accomplishment. Accountants are responsible for determining, assessing, and revealing the evolution achieved by the business in SDGs; they perform as drivers and interpreters of the reporting using the term of corporate sustainability; they encourage the achievement and simultaneously alter accounting to fit in with recent challenges from corporate sustainable development; and incorporate the sustainable development standards into the mission, approach, strategic decisions and operating policies of the business (Makarenko & Plastun, 2017).

The accounting profession understands the significance and capability of SDGs, the significant commitment of the business to SDGs, and its responsibility concerning participation in meaningful actions within the SDG framework (Bebbington & Unerman, 2018). The global accountancy bodies, such as the International Federation of Accountants (IFAC), and the Association of Chartered Certified Accountants (ACCA), have come out with surveys, recommendations, frameworks, and debates to assist their clients in understanding SDG reporting.

The IFAC (2016) published "The 2030 Agenda for Sustainable Development: A Snapshot of the Accountancy Profession's Contribution", which emphasises the contribution of professional accountants worldwide to SDGs and their benefits to society. The ACCA (2017) also issued "The Sustainable Development Goals: redefining context, risk and opportunity", which validate the importance of SDGs to government, business and society, the responsibility of the private sector, and the contribution of professional accountants to accomplish the SDGs. In addition, Barman and Farrar (2018) published "Creating a sustainable future: The role of the accountant

in implementing the Sustainable Development Goals”, which sets out the summary of the background to SDGs that defines how the business community reacts and constructs the contribution of management accountants to achieve the SDGs.

In relation to the accountant’s role in advancing SDGs, the KPMG Report (2018) conducted a study with the aim of providing recommendations on quality criteria for SDG reporting, that can serve as a reference for companies by comparing their own reporting against this worldwide reporting.

Professional accountants experience the paradigm shift from their initial role in providing the financial information to becoming effective members in the decision-making process. They participate in sustainable finances by including the long-term risk in corporate reporting, focusing on long-term value creation in corporate governance to stipulate trust to stakeholders via auditing (Bogdan, Deliu, Săveanu, Ban, & Popa, 2020).

Firmansyah (2019) conducted a study on the role of accountants in accomplishing the SDGs. The study found that the utmost crucial responsibility of an accountant is to express the components of SDGs in the preparation of financial statements. Accountants also provide suggestions on the business strategy to motivate the management to achieve the SDGs through sound decision making.

Methodology

To come up with an SDGs index for local authorities in Malaysia, we conceptualised and localised the interactions of all the 17 SDGs into five pillars interlinking them with the social objectives, as depicted in Figure 1 (see below). The framework emphasises the importance of assessing interactions with key objectives and influences of the interactions including governance and education. Previous studies by Dariah, Salleh, Yahaia and Mafruhat (2019) and Boyes (2019) had only classified them under three main pillars, namely; economy, resources, and the environment.

The first category, i.e. environment, is the main supply of resources, for example, climate, oceans, and land (SDGs 13,14 and 15). The concept of sustainable development in terms of environment preservation of resources needs to be realised through a constant supply of natural resources with effective land use, reduction of non-renewable resources, biodiversity and conservation of natural resources.

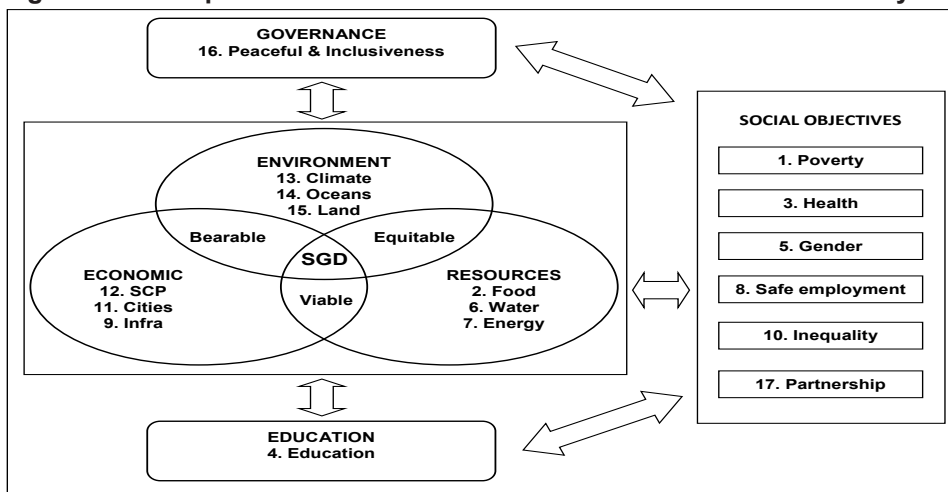
The second category, i.e. resources, for example, food, water, and energy (SDGs 2, 6, and 7) is important for human health and is classified as one of the objectives of SDGs. Dariah et al. (2019) name this pillar as a social dimension instead of resources, which outlines food security, child mortality, poverty index, land, and inequality. Food security may be negatively impacted if food crops are replaced with other alternative economic activities (Dariah et al., 2019).

The third category, i.e. economy, comprises sustainable consumption and production (SCP) (SDG 12), housing (SDG 11), and infrastructure (SDG 9). This category is based on both private and public economic activities. It is the main income from the environment and it refers to converting wealth into goods and services to achieve social objectives. The economy is the main source of employment, which subsequently affects social disparity or inequality.

The fourth category is governance, which represents the SDG 16 for peace, justice, and strong institutions. Good governance is crucial for managing the implementation of the SDGs even though the concept of a peaceful nation is definitely a goal in itself.

The fifth pillar is education as it plays a key role in promoting as well as contributing directly to all or most of the SDGs. It is vital to have an educated society to explain the concept of sustainability and to determine the level of SDGs achievement. A powerful local civil society participation via mentoring partnerships and interested party engagement with the academic sphere has been understood to improve cooperation, create an optimistic learning atmosphere, and uphold a culture of collaboration (Lidstone, Wright, & Sherren, 2015).

Figure 1: Conceptual Framework of SDGs for Local Authorities in Malaysia



This five-pillar conceptual framework can help to make the SDGs easier for the local authorities and the community to comprehend. Their interlinkages are clearer, and most importantly, they are localised, thereby making it much simpler to envisage how the SDGs support one another. They have an influence on and determine each other with the main aim of achieving the social objectives of SDG 1, SDG 3, SDG 5 and SDG 8, as well as reduce inequalities (SDG 10) through global partnerships and cooperation (SDG 17).

The Sustainable Development Goals Disclosure Index (SDGDi) was developed to examine the research objective. There were several steps involved in the development of the index, as set out below.

Steps in SDGD_i Development

Step 1: Review guidelines and authority issued by the Malaysian authorities: (1) Public Sector IT Technical Approval Guideline[s] issued by the Prime Minister's Department of Malaysia, and (2) SPB-PBT (or PBT Star Rating) IT Requirement by MAMPU.

Step 2: Review international and local protocols regarding disclosure items. These include the International Federation of Accountants (IFAC) Requirements, SDG Framework, GRI's Sustainability Reporting Framework, Sustainable Development Goal Disclosure (SDGD) Requirement, Dow Jones Sustainability Index (DJSI), and International Organisation for Standardization (ISO) 14001, as well as the national items, such as the National SDG Roadmap (Malaysia), and the literature on global sustainability and accountability. (In both steps, a total of 270 items were identified)

Step 3: Identify sustainability-related key items from Steps 1 and 2, to remove existing items and add new items. (Some of the items will then be translated into English as the local guidelines are written in the Malay language. A total of 254 items were identified)

Step 4: Conduct a preliminary test on 19 city councils for the key items identified in Step 3. (At this step, the total items were 263)

Step 5: Make changes in subsequent steps, remove existing items and add several new items from the local authorities' websites' actual disclosures. (The total items were 156)

Step 6: Prepare the draft of the sustainable development goals disclosure index for validation. (The total number of items was finally reduced to 150)

Step 7: Obtain validation from the three experts i.e. i) Secretary of the City Council; ii) Head of the Finance Department of the City Council; iii) Deputy State Accountant of the Sarawak State Treasury Office. (There were no changes in the 150 items)

Step 8: Make final modification, if any, to the revised items to develop the Index.

Please refer to Table 1 for the Sustainable Development Goals Disclosure Index.

Table 1: Sustainable Development Goals Disclosure Index

Themes	Items description
1. Governance	1. - The Board's integration of relevant and material sustainable development issues into overall governance processes (oversight and accept responsibility for the SDG disclosures).
	2. - The Board's integration of sustainable development issues into overall governance processes (stakeholder identification and engagement).
	3. - The Board's integration of sustainable development issues into overall governance processes (strategy and mechanisms).
	4. - The Board's integration of sustainable development issues into overall governance processes (organisation's culture).
	5. - Responsibilities [of the Board] and Sustainable Development Committees.
2. Strategy	6. - Sustainable development issues to be considered in influencing strategy and its impact on the achievement of the SDGs and the impact of risks and opportunities disclosure on the organisation's business model, strategy and financial planning (where such information is material).
	7. - Sustainable development issues to be considered in influencing strategy and its impact on the achievement of the nature and extent of scenario analysis to test the resilience of the organisation's strategy, considering the likelihood and magnitude of material sustainable development risks and opportunities.
	8. - Investments in and benefits generated from opportunities arising from sustainable development issues.
	9. - Labour related issues (quantitative).
3. Management Approach	10. - Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for ensuring stakeholder inclusivity.
	11. - Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for determining relevant and material sustainable development issues.
	12. - Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for identifying SDGs, in which the organisation has the greatest positive and/or negative impact on achievement.
	13. - Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for selecting SMART targets.
	14. - Integrated management approach to consider the sustainable development issues and the SDGs into the organisation's processes for ensuring that the accounting, finance, strategy and sustainability functions collaborate to develop the organisation's approach and response to sustainable development issues.
	15. - Descriptions of policies, commitments, goals and targets, responsibilities, resources, grievance mechanisms, and specific actions.
	16. - Management approach for anti-corruption.
	17. - Management approach on recycled materials.
	18. - Energy consumption, energy intensity, reduction of energy consumption, reduction in energy requirement of products and services.
	19. - Water sources, water recycled and reused.

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

	41. - Reduction in the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination and waste management by 2030.
	42. - Capacity of all countries, in particular developing countries, for early warning, risk reduction, and management of national and global health risks.
	43. - Health facilities.
	44. - Regular health check-ups for local authorities' staff.
	45. - Local authorities' actions undertaken to prevent dengue.
	46. - Monitoring of dengue-risk areas.
	47. - Human resource development.
9. SDG 4 Quality education	48. - Knowledge and skills acquisition for all learners to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and cultural contributions to sustainable development.
	49. - Upgrading educational facilities for children, persons with disabilities (PWD), and gender sensitivity programmes, and providing safe, non-violent, inclusive, and effective learning environments.
	50. - Educational equipment / methods / publicity used (billboards, posters, websites).
10. SDG 5 Gender equality	51. - Eradication of all forms of discrimination against women and girls everywhere.
	52. - Elimination of all forms of violence against women and girls in the public and private spheres, including trafficking, sexual harassment and other types of exploitation.
	53. - Women's participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
	54. - Enabling technology usage in a particular information and communications technology, to promote the empowerment of women.
	55. - Sound policies and enforceable legislation for the promotion of gender equality and the empowerment of women and girls at all levels.
11. SDG 6 Clean water and sanitation	56. - Clean water and sanitation – availability and sustainable management of water and sanitation for all.
	57. - Adequate and equitable sanitation and hygiene for all and ending of open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030.
	58. - Water quality improvement by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.
	59. - Water-use efficiency improvement across all sectors and ensuring sustainable withdrawal and supply of freshwater to address water scarcity and substantially reducing the number of people suffering from water scarcity by 2030.
	60. - Integrated water resource management at all levels, including through transboundary cooperation as appropriate by 2030.

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

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

17. SDG 12 Responsible consumption and production	95. - Sustainable management and efficient use of natural resources by 2030.
	96. - Environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks, and significantly reducing their release to air, water, and soil in order to minimise their adverse impacts on human health and the environment.
	97. - Reduction of waste generation through prevention, reduction, recycling, and reuse by 2030.
	98. - Public procurement practices that are sustainable in accordance with national policies and priorities.
	99. - Relevant information and awareness for sustainable development and lifestyles for the public in harmony with nature.
	100. - Developing countries assistance to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.
	101. - Tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.
18. SDG 13 Climate action	102. - Resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
	103. - Climate change measures' integration into national policies, strategies, and planning.
	104. - Education, awareness-raising and human and institutional capacity improvement on climate change mitigation, adaptation, impact reduction and early warning.
	105. - The commitment undertaken by developed country parties to the United Nations Framework Convention on Climate Change to a goal of mobilising jointly \$100 billion annually from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalise the Green Climate Fund through its capitalisation as soon as possible.
	106. - Mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing states, including focusing on women, youths, as well as local and marginalised communities.
	107. - Climate Strategy, Biodiversity Impacts
19. SDG 14 Life below water	108. - Reduction of marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution by 2025.
	109. - Sustainable management of marine and coastal ecosystems to avoid significant adverse impacts by strengthening their resilience and taking action for their restoration to achieve healthy and productive oceans.
	110. - Ocean acidification impact, including through enhanced scientific cooperation at all levels.
20. SDG 15 Life on land	111. - Conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, particularly forests, wetlands, mountains and drylands, in line with obligations under international agreements.
	112. - Sustainable management of all types of forests, halting deforestation, restoring degraded forests and substantially increasing afforestation and reforestation globally.

	113. - Land and soil utilisation, including land affected by desertification, drought and floods, and striving to achieve a land degradation-neutral world by 2030.
	114. - Conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development by 2030.
	115. - Natural habitat degradation reduction, halting the loss of biodiversity and protecting and preventing the extinction of threatened species.
	116. - Integrated ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.
21. SDG 16 Peace and justice for strong institutions	117. - Reduction of all forms of violence and related death rates everywhere.
	118. - Eradication of abuse, exploitation, trafficking and all forms of violence against and torture of children.
	119. - Equality access of rule of law at the national and international levels and ensuring equal access to justice for all.
	120. - Reduction of illicit financial and arms flows, strengthening the recovery and return of stolen assets and combating all forms of organised crime by 2030
	121. - Corruption and bribery reduction
	122. - Effective, accountable and transparent institutions at all levels.
	123. - Responsive, inclusive, participatory, and representative decision-making at all levels.
	124. - Public access to information and fundamental freedoms protection in accordance with national legislation and international agreements.
	125. - Relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.
	126. - Actions to support the NKRA: reducing street crime, for example, through campaigns, lighting in hotspots, CCTV installation, cooperation with the police, etc.
	127. - “No Wrong Door Policy” implementation
22. SDG 17 Partnership to achieve the goal	128. - Domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
	129. - Enhancement of North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.
	130. - The development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed – green technology (composting), e-waste.
	131. - Full operationalisation of the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhancement on the use of technology, in particular formats – websites, online and communication technology.
	132. - Policy coherence enhancement for sustainable development.

	133. - Respect on country's policy on space and leadership to establish and implement policies for poverty eradication and sustainable development.
	134. - Effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.
	135. - Management of tax/non-tax revenue collection – online tax collection.
	136. - Management of tax/non-tax revenue collection – performance of revenue collection (tax and non-tax) based on estimates.
	137. - Management of tax/non-tax revenue collection – performance of tax revenue arrears collection.
	138. - Management of tax/non-tax revenue collection – efforts to control the security of collection.
	139. - Networking/linkage with international bodies/foreign cities – Memorandum of Understanding.
	140. - Networking/linkage with international bodies/foreign cities – any related activities.
	141. - Knowledge sharing at the international/national level conventions.
	142. - Membership to international/national local authority bodies
23. Others	143. - Vision, mission, objective statements – mentioning sustainable development.
	144. - Mayors' statement – mentioning sustainable development and related activities/programmes.
	145. - Voluntary Local Review Based on Sustainable Development Goals (SDGs).
	146. - Involvement in the preparation of Malaysia's SDG Cities Roadmap.
	147. - Strategic planning - mentioning SDG.
	148. - The existence of an independent Sustainable Development Department.
	149. - Action plan for a women-friendly green city.
	150. - The existence of an SDG section on the website.

Conclusion

In Malaysia, the development of an SDGDi for local authorities is appropriate as the awareness of a sustainable development agenda among the society is still low. The websites of local authorities could be used as a strategic tool to communicate SDG information to stakeholders. The inclusion and participation of stakeholders is vital in advancing the country's sustainable development agenda. By promoting greater stakeholders' engagement via disclosure, decision making relating to the sustainable development activities undertaken by local authorities can be improved. In fact, local authorities as the closest tier of the government to the community, are in a better position to encourage sustainable development. The items in the SDGDi can be used to assess performance in the rating system, which consequentially is likely to improve accountability and elevate transparency in the public sector. Finally, the SDGDi could be extended and modified based on other research settings, for example, to disclosures by Federal statutory bodies or state-owned companies with regard to their SDGs commitment.

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Kajian Rintis Penggunaan Maklumat Perakaunan Akruan dan Impak terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*

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<https://doi.org/10.58458/ipnj.v11.01.05.0071>

Received: 30 June 2021

Reviewed: 22 August 2021

Accepted: 08 November 2021

Abstrak

Tujuan: Kajian ini bertujuan untuk melihat sejauh mana penggunaan maklumat perakaunan akruan dalam empat aspek; iaitu pembangunan belanjawan, pengurusan liabiliti, pengurusan aset dan penzahiran akauntabiliti, di samping melihat impak penggunaan tersebut terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) berdasarkan *Maqasid Syariah*.

Rekabentuk Kajian: Kajian ini melibatkan kementerian dan Pihak Berkuasa Tempatan (PBT) dengan menggunakan pendekatan kuantitatif dengan edaran soal selidik dalam talian menggunakan *Google Form*. Data kemudiannya dianalisa menggunakan statistik diskriptif dan inferensi.

Dapatan: Hasil kajian rintis mendapati semua pemboleh ubah yang digunakan mempunyai nilai *Cronbach's Alpha* yang dapat diterima, iaitu antara 0.617-0.886. Berdasarkan nilai min, dapatan kajian menunjukkan tahap penggunaan maklumat perakaunan akruan berada pada tahap yang tinggi; iaitu dalam pengurusan liabiliti (4.18), pengurusan aset (4.13), penzahiran akauntabiliti (4.12) dan belanjawan (3.73). Malah, responden berpandangan elemen *Maqasid Syariah* (4.25), iaitu menjaga dan melindungi nyawa (*al-nasb*), akal (*al-aql*), harta (*al-mal*), agama (*ad-din*) dan keturunan (*al-nafs*) dipersetujui melebihi Matlamat Pembangunan Lestari, “SDG” (4.13). Melihat kepada kumpulan responden kementerian dan PBT, mereka sependapat di mana secara statistik, tiada perbezaan yang signifikan.

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

Implikasi Kepada Praktis: Justeru, penandaarasan kementerian terhadap PBT dipercayai relevan namun perlu mengambilkira beberapa aspek seperti tadbir urus, perundangan dan penubuhan organisasi masing-masing. Hasil kajian ini mencadangkan pelaporan yang lebih komprehensif dengan rangka kerja pelaporan yang memetakan laporan korporat kepada SDG berdasarkan *Maqasid Syariah*. Kajian ini berhasrat untuk memantapkan peralihan kepada perakaunan akruan dalam landskap perakaunan sektor awam di Malaysia, di samping melihat impak amalan tersebut terhadap SDG seiring dengan prinsip *Maqasid Syariah*.

Kata Kunci: Penggunaan maklumat, perakaunan akruan, Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG"), *Maqasid Syariah*, kajian rintis.

Abstract

Purpose: *The study aims to examine the use of accrual accounting information from four aspects: budget development, liability management, asset management, and accountability discharge, and to examine its impact on Sustainable Development Goals (SDG) based on Maqasid Shariah.*

Design: *The study has involved ministries and local authorities (Pihak Berkuasa Tempatan, "PBT"), employing quantitative methodology. Questionnaires have been distributed online using Google Form. Data has been analysed using descriptive and inferential statistics.*

Findings: *The pilot study has found that all variables used had acceptable Cronbach's Alpha values of 0.617-0.886. Based on the mean values, the results have shown a high level of utilisation of accrual accounting information in liability management (4.18), asset management (4.13), accountability discharge (4.12) and budgeting (3.73). Moreover, the respondents have shown higher agreement with the elements of Maqasid Shariah (4.25), i.e., the preservation of life (al-nafs), intellect (al-aql), wealth (al-mal), religion (ad-din) and lineage (al-nasab), compared to the Sustainable Development Goals (4.13). Further analysis by groups shows that the ministries and PBT were largely in agreement, as there were no significant differences.*

Practical Implication: *Therefore, the benchmarking of PBT to ministries is believed to be relevant, but must account for other aspects, such as governance, legislation and the establishment of their respective organisations. The study reveals that a comprehensive reporting, embodying framework towards SDG based on Maqasid Shariah is essential. Indeed, the study intends to boost the transition to accrual accounting within the public*

sector accounting landscape of Malaysia, in addition to observing the impact of such practice on the SDG in line with the principles of Maqasid Shariah.

Keywords: *Use of information, accrual accounting, Sustainable Development Goals (SDG), Maqasid Shariah, pilot study.*

1.0 Pengenalan

Dasar Transformasi Sektor Awam dalam Model Ekonomi Baru mensasarkan pelaksanaan perakaunan akruan sepenuhnya menjelang tahun 2021, sebagaimana yang diumumkan oleh Kementerian Kewangan dalam Belanjawan 2020. Kerajaan akan beralih sepenuhnya kepada perakaunan akruan bagi memastikan pelaporan hutang dan liabiliti yang lebih telus bagi menjamin tadbir urus yang lebih baik. Malah, selaras dengan piawaian dan pelaporan berasaskan akruan, hutang dan liabiliti tersebut akan dilaporkan mengikut piawaian perakaunan IPSAS. Bukan itu sahaja, pelaporan hutang tersebut akan mengikut tatacara Statistik Hutang Sektor Awam oleh *International Monetary Fund* (IMF) bagi menyediakan maklumat prestasi kewangan kerajaan yang holistik dan komprehensif.

Maklumat sebegini dapat menyokong kepada pengurusan risiko fiskal, disiplin fiskal dan tadbir urus keseluruhannya. Kajian lepas juga membuktikan banyak lagi faedah yang akan diperolehi dengan melaksanakan perakaunan akruan, bermotifkan amnya untuk mengukur prestasi, mengawal kewangan dan menzahirkan akauntabiliti awam (Edwards, 2021). Namun begitu, kejayaan pelaksanaan perakaunan akruan diukur dengan dua aspek: i) Menggunakan pakai perakaunan akruan secara sepenuhnya, bukan lagi digunakan secara bersama perakaunan asas tunai dan asas tunai ubahsuai dan ii) Penggunaan maklumat yang diperolehi daripada perakaunan asas tunai dalam pembuatan keputusan.

Hal sedemikian mencetus idea artikel ini untuk memfokus kepada perihal penggunaan maklumat perakaunan akruan sektor awam di Malaysia bagi menjamin kejayaan pelaksanaannya yang optima sebaliknya, bukan penyebab kepada ketidakcekapan (Tran & Noguchi, 2020). Seajar dengan agenda utama negara yang mensasarkan pencapaian Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG") menjelang tahun 2020, impak penggunaan maklumat perakaunan akruan tersebut dilihat ada hubung kaitnya dengan SDG (Rujuk Seksyen 2.3: Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG")).

Bukan itu sahaja, matlamat SDG juga adalah seajar dengan *Maqasid Syariah* yang menyokong kepada pencapaian matlamat secara holistik. Spesifik artikel ini, ia bertujuan untuk melihat sejauh mana penggunaan maklumat perakaunan akruan dalam empat aspek; iaitu pembangunan belanjawan, pengurusan liabiliti, pengurusan aset dan penzahiran akauntabiliti, di samping melihat impak penggunaan tersebut terhadap SDG berdasarkan *Maqasid Syariah*. Artikel ini bertujuan untuk memantapkan peralihan kepada perakaunan

akruan dalam landskap perakaunan sektor awam di Malaysia, di samping melihat impak amalan tersebut terhadap SDG seiring dengan prinsip *Maqasid Syariah*.

Artikel ini mengandungi lima seksyen. Berikutnya adalah Seksyen 2, merumuskan sorotan kajian yang dibahagikan kepada empat sub-seksyen iaitu, Seksyen 2.1: Gambaran keseluruhan perakaunan akruan, Seksyen 2.2: Amalan and penggunaan perakaunan akruan, Seksyen 2.3: Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG") dan Seksyen 2.4: *Maqasid Syariah*, manakala Seksyen 3 menerangkan metodologi kajian. Seksyen 4 pula membincangkan hasil dapatan kajian yang dibahagikan kepada empat sub-seksyen, iaitu Seksyen 4.1: Maklumat demografi, Seksyen 4.2: Penggunaan maklumat perakaunan akruan yang dihuraikan berdasarkan empat aspek: belanjawan, pengurusan aset, pengurusan liabiliti dan penzahiran akauntabiliti, Seksyen 4.3: Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG") dan Seksyen 4.4: *Maqasid Syariah*. Artikel ini diakhiri dengan rumusan di Seksyen 5.

2.0 Sorotan Kajian

Seksyen ini akan mengulas kajian lepas yang berkaitan, didahului dengan memberi gambaran keseluruhan perakaunan akruan dan diikuti dengan amalan dan penggunaan perakaunan. Perbincangan juga menyentuh dua aspek berkaitan kajian iaitu, Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG") dan seterusnya *Maqasid Syariah*.

2.1 Gambaran Keseluruhan Perakaunan Akruan

Pada tahun 2015, Perakaunan Asas Akruan telah diumumkan untuk digunakan di semua sektor awam di Malaysia. Rentetan itu, Jabatan Akauntan Negara Malaysia (JANM) telah mengeluarkan Pekeliling Perbendaharaan kepada kerajaan persekutuan dan negeri untuk menggunakan perakaunan akruan bermula 1 Januari 2018. Kajian lepas membuktikan peralihan kepada perakaunan akruan mengambil masa melebihi 10 tahun untuk dilaksanakan dan menikmati faedah yang dijangkakan. Ini menegaskan bahawa kejayaan pelaksanaan perakaunan akruan dilihat bukan sahaja dari pelaksanaan sepenuhnya, tetapi maklumat yang diperolehi daripada perakaunan akruan tersebut perlu dimanfaatkan secara optimum dalam pembuatan keputusan ke arah menjamin pengurusan kewangan yang lebih berhemat.

Umum mengetahui perakaunan akruan merupakan asas perakaunan bagi pelaporan kedudukan dan prestasi kerajaan yang lebih tepat dan telus. Transformasi daripada perakaunan tunai ubahsui kepada perakaunan akruan adalah menjurus kepada pengurusan fiskal yang lebih cekap dan berkesan (JANM, 2014). Penerimaan penggunaan perakaunan berasaskan akruan oleh kerajaan adalah elemen yang penting untuk mengubah sistem tunai birokrasi berasaskan pentadbiran kepada sistem pengurusan kewangan yang lebih informatif. Ini adalah untuk memastikan segala bekalan maklumat kewangan yang komprehensif boleh dipercayai serta bermakna untuk dipertanggungjawabkan dalam pembuatan keputusan.

Asas tunai dan asas akruan adalah berkaitan dengan pengiktirafan, iaitu bila sesuatu urusan niaga itu akan diiktiraf. Pengiktirafan menjadi satu isu yang signifikan kerana ia boleh mempengaruhi prestasi kewangan sesebuah organisasi bagi sesuatu tempoh masa tertentu. Perakaunan asas tunai adalah merujuk kepada pengiktirafan yang hanya akan dibuat (direkod ke dalam jurnal) berdasarkan kepada penerimaan atau pembayaran tunai sahaja sebagai asas. Ini bermakna, sekiranya sesuatu urusan niaga itu melibatkan penerimaan atau pembayaran secara tertangguh (belum terima atau belum bayar), maka urusan niaga berkenaan tidak akan diiktiraf (direkod) sehinggalah tunai diterima. Dalam asas ini, catatan pelarasan tidak diperlukan dan ia senang untuk diamalkan. Asas akruan pula mengiktiraf urusan niaga pada masa ia berlaku dengan mengambil kira manfaat sebagai asas pengiktirafan. Manfaat di sini termasuklah tunai dan bukan tunai.

2.2 Amalan dan Penggunaan Perakaunan Akruan

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

Di Jepun, perakaunan akruan telah mula dilaksanakan sejak tahun 2003 untuk memberi gambaran yang komprehensif tentang kedudukan kewangan, terutamanya dari aspek hasil dan perbelanjaan serta menilai prestasi kerajaan (Ministry of Internal Affairs and Communications, 2012). Menurut Tran & Noguchi (2020), kebanyakan pihak berkuasa Tempatan (PBT) di Jepun telah mengguna pakai perakaunan akruan sejak tahun 2009 walaupun ia bukan mandatori, malah ada PBT yang telah bermula seawal tahun 2001 namun ia menjejaskan kecekapan PBT. Masalah kekurangan pengurusan aset dan ketidaksepadanan kegunaan perakaunan asas tunai secara bersama asas akruan dikenal pasti menjadi punca kepada ketidakcekan PBT. Sebaliknya, Lampe et al. (2015) membuktikan amalan perakaunan akruan memberi kesan yang positif kepada kecekapan PBT di Jerman. Oleh sebab itu, walaupun perakaunan asas akruan digunakan, pengurusan aset yang strategik perlu ditingkatkan dan penggunaan belanjawan akruan perlu digunakan sebaiknya untuk menjamin kecekapan sektor awam.

Di Malaysia, Jainal dan Basnan (2018) mengkaji penggunaan maklumat yang dihasilkan daripada perakaunan akruan di PBT dan mereka mendapati penggunaannya dalam pembuatan keputusan adalah tinggi, dalam belanjawan, berbanding pengurusan aset dan liabiliti dan penilaian prestasi. Kajian ini mencadangkan faktor pengalaman mempunyai hubungan yang positif terhadap penggunaan perakaunan akruan dalam pembuatan keputusan, manakala kemahiran dibuktikan sebaliknya. Oleh itu, faktor-faktor berkenaan seharusnya diberi perhatian oleh pihak JANM supaya perakaunan akruan dapat dimanfaatkan faedahnya seperti di negara-negara maju yang lain. Faktor lain yang mempengaruhi ketersediaan pelaksanaan perakaunan akruan telah dikenal pasti dalam kajian lepas (Misalnya Yuliati et al., 2019; Indriani et al., 2018; Ahmad, 2016; Atan & Yahya, 2015), termasuk komitmen organisasi, faktor teknologi dan sumber manusia.

2.3 Matlamat Pembangunan Lestari (SDG)

Pertubuhan Bangsa-bangsa Bersatu (PBB) dalam Perhimpunan Agung PBB yang diadakan pada September 2015 di New York, Amerika Syarikat telah mengemukakan *Sustainable Development Goals* (SDG) atau Matlamat Pembangunan Lestari untuk dicapai menjelang tahun 2030. SDG 2030 menggariskan 17 matlamat dan antara SDG yang dipercayai relevan dalam konteks perakaunan akruan, antaranya: i) SDG1: Kemiskinan teragah dan kelaparan sifar - perakaunan akruan dapat melaporkan kedudukan kewangan dengan lebih tepat dengan keseimbangan disiplin fiskal dipercayai mampu menyokong kepada belanjawan berhemat yang mampu menyumbang kepada impak sosio-ekonomi; ii) SDG16: Keamanan, keadilan dan institusi berwibawa - perakaunan akruan mampu memberi gambaran kedudukan kewangan institusi sektor awam yang lebih menyeluruh dan tepat; dan iii) SDG11: Bandar dan komuniti yang mampan - PBT telah mengguna pakai perakaunan akruan lebih dari 20 tahun, sewajarnya mampu mengurus kewangan secara lebih berhemat dalam meningkatkan kualiti hidup komuniti dan pembangunan setempat yang lebih sejahtera.

Oleh sebab itu, ulasan di akhbar-akhbar tempatan banyak menekankan aspek integriti, tadbir urus korporat dan politik, pentadbiran sektor awam dan penguatkuasaan undang-undang yang merupakan antara prinsip-prinsip utama untuk mencapai SDG 2030. Pelaksanaan perakaunan akruan dilihat adalah merupakan sebahagian usaha ke arah SDG 2030; dilihat sejajar dengan objektif perakaunan akruan (JANM, 2014). Secara prinsipnya, kajian ini akan meneliti amalan pelaksanaan perakaunan akruan dengan melihat impak kepada SDG berdasarkan elemen-elemen yang digariskan dalam *Maqasid Syariah*.

2.4 *Maqasid Syariah*

Dalam membincangkan kepelbagaian bidang ilmu, politik dan dasar negara, secara amnya *Maqasid Syariah* telah dihuraikan secara meluas, selain menjadi sebutan di kalangan masyarakat awam (Fisol & Hassan, 2019). Ini kerana istilah *Syariah* itu sendiri mempunyai lima tujuan yang menjadi prinsip *Maqasid Syariah* iaitu menjaga dan melindungi i) agama (*ad-din*) ii) nyawa (*al-nafs*), iii) akal (*al-aql*), iv) keturunan (*al-nasb*) dan v) harta

(*al-mal*), manakala sebarang bentuk perlindungan adalah berkait rapat dengan *masalah* (kepentingan). Kajian lepas merumuskan menjaga *masalah* awam dengan berpegang kepada *Syariah* adalah sangat dituntut untuk kepentingan sekalian alam (Zakariyah et al., 2017). Jika dilihat dalam konteks peralihan kepada perakaunan asas akruan iaitu melibatkan perubahan dasar - piawaian perakaunan kerajaan atau lebih dikenali sebagai *Malaysian Public Sector Accounting Standard* (MPSAS) dengan mensasarkan pelbagai faedah dibincangkan mampu menyokong kepada matlamat SDG berlandaskan prinsip *Maqasid Syariah*.

Hal yang demikian membawa kepada cadangan topik perbincangan kajian ini iaitu tentang perakaunan akruan. Tujuan kajian ini adalah untuk mengkaji penggunaan maklumat perakaunan akruan dan impak terhadap SDG berdasarkan *Maqasid Syariah* di kalangan kakitangan terlibat di kementerian dan PBT di Malaysia. Kajian ini dipercayai mampu memperkukuhkan lagi usaha JANM dalam melaksanakan sepenuhnya perakaunan asas akruan selepas pindaan Rang Undang-Undang di Parlimen. Ia sebahagian libatsama Pasukan Pelaksanaan Perakaunan Akruan (PPPA), JANM bagi mendapatkan maklumbalas keperluan kajian supaya dapatan kajian dapat menyumbang kepada keperluan JANM dan negara secara amnya.

3.0 Metodologi Kajian

Kajian rintis ini menggunakan pendekatan kuantitatif di mana pengumpulan data dijalankan melalui kaedah soal selidik secara dalam talian (*online questionnaire*) dengan responden yang telah disasarkan dari Bahagian/Jabatan di Perbendaharaan/Akaun/Kewangan bagi setiap kementerian dan pihak berkuasa tempatan (PBT). Selain daripada itu, penyelidikan ini telah mendapat kerjasama secara terus daripada Jabatan Akauntan Negara Malaysia melalui Pasukan Pelaksanaan Perakaunan Akruan (PPPA), dalam mengenal pasti keperluan kajian dan Institut Perakaunan Negara (IPN), dalam keseluruhan perjalanan kajian termasuk kutipan data berkaitan. Jadual 1 berikut menunjukkan ringkasan populasi dan sampel kementerian dan PBT masing-masing mengikut saiz (berdasarkan definisi Kementerian Kewangan) dan status PBT (bandaraya, perbandaran dan daerah) di Malaysia.

Jadual 1: Taburan Respon Soal Selidik

Kumpulan responden	Saiz	Bilangan populasi	Bilangan soal selidik	
			Diemel	Diperolehi semula dan digunakan
Saiz Kementerian	Mega	3	30	4
	Besar	3	30	11
	Sederhana	3	30	2
	Kecil	19	190	16
JUMLAH		28	280	33 (12%)
Status PBT	Bandaraya	8	16	9
	Perbandaran	34	68	5
	Daerah	57	114	7
JUMLAH		99	198	21 (11%)
JUMLAH KESELURUHAN		127	478	54

Jadual 1 memperlihatkan kadar respon yang sangat rendah, mengambilkira kekangan tempoh kajian untuk pengumpulan data dalam tempoh yang singkat, ditambah lagi dengan faktor Bekerja Dari Rumah (BDR) sepanjang Perintah Kawalan Pergerakan (PKP) di kalangan responden menyukarkan untuk mereka dihubungi. Justeru, artikel ini dipertimbangkan sebagai kajian rintis menggunakan soal selidik secara dalam talian. Kesemua soal selidik yang diperolehi semula boleh digunakan untuk dianalisa (Rujuk Jadual 6: Demografi Responden). Ini membuktikan kelebihan soal selidik dalam talian kerana soalan yang disediakan ditanda wajib jawab sebelum diteruskan kepada soalan berikutnya, justeru mengelakkan keciciran soalan yang perlu dijawab.

Soalan soal selidik pula dibahagikan kepada 4 bahagian utama dan permulaan soal selidik adalah menjelaskan mengenai keperluan dan kepentingan soal selidik ini dijalankan. Bahagian 1: Demografi responden dan maklumat umum, dan diikuti Bahagian 2: Penggunaan maklumat perakaunan akruan yang mempunyai 4 sub-bahagian, iaitu: a) Penggunaan maklumat perakaunan akruan dalam belanjawan; b) Penggunaan maklumat perakaunan akruan dalam pengurusan aset; c) Penggunaan maklumat perakaunan akruan dalam pengurusan liabiliti; dan d) Penggunaan maklumat perakaunan akruan dalam penzahiran akauntabiliti. Bahagian 3: Maklumat perakaunan akruan dan matlamat pembangunan lestari (*Sustainable Development Goals*, "SDG"). Ini diikuti bahagian terakhir, iaitu Bahagian 4: Maklumat perakaunan akruan dan *Maqasid Syariah*. Ringkasan maklumat pemboleh ubah dan jumlah soalan adalah seperti di Jadual 2.

Jadual 2: Maklumat Pemboleh Ubah dan Jumlah Soalan Soal Selidik

Bahagian	Pemboleh Ubah	Adaptasi/ Adopsi	Dibangunkan Sendiri	Jumlah Soalan	
1.	Maklumat Demografi	7	-	7	
	Maklumat Umum	a. Kementerian	-	4	4
		b. Pihak Berkuasa Tempatan (PBT)	-	4	4
2.	Penggunaan Maklumat Perakaunan Akruan dalam	a. Belanjawan	5	-	5
		b. Pengurusan Aset	6	-	6
		c. Pengurusan Liabiliti	6	-	6
		d. Penzahiran Akauntabiliti	5	-	5
3.	Maklumat Perakaunan Akruan dan Matlamat Pembangunan Lestari (<i>Sustainable Development Goals</i> "SDG")	7	-	7	
4.	Maklumat Perakaunan Akruan dan <i>Maqasid Syariah</i>	5	-	5	
JUMLAH		41	8	41	

Soal selidik telah diedarkan secara talian (*online*) kepada responden yang terlibat melalui sistem pengumpulan maklumat responden yang dibangunkan oleh penyelidik, di mana responden terlibat terdiri daripada akauntan dan pegawai kewangan yang menggunakan maklumat perakaunan akruan. Soal selidik menggunakan *Google Form* ini dihantar kepada email setiap wakil kementerian dan PBT yang telah dikenal pasti oleh penyelidik. Ia bermula pada 7 Jun 2021 sehingga 27 Jun 2021 untuk semua responden memberi maklum balas terhadap soal selidik tersebut.

Kajian ini menggunakan statistik deskriptif dan inferensi bagi mendapatkan maklumat yang dikaji. Statistik deskriptif digunakan untuk menghurai data yang diperolehi bagi populasi ataupun sampel dan memerihalkan hasil sesuatu keputusan kajian. Menurut Konting (2000), statistik deskriptif merupakan organisasi dan ringkasan data yang diperolehi daripada pemprosesan data operasinya dan boleh juga melibatkan penjadualan, ilustrasi dalam bentuk rajah atau graf tentang data tersebut. Statistik deskriptif seperti peratusan, min, sisihan piawai dan frekuensi digunakan untuk mentafsir data daripada soal selidik. Analisis ini antara lain bertujuan untuk membuat ringkasan data supaya lebih mudah difahami (Sabitha, 2006).

Skala pengukuran dalam kajian ini adalah skala nominal dan skala ordinal. Skala nominal digunakan untuk mengumpul data demografi responden. Skala ordinal merupakan skala yang mempunyai kategori-kategori yang bebas antara satu sama lain dan skala-skalanya disusun dalam pangkalan data (Chua, 2011). Dalam kajian ini, pengukuran data ordinal adalah menggunakan skala *Likert* lima mata iaitu 1-Sangat tidak setuju, 2-Tidak setuju, 3-Tidak pasti, 4-Setuju, 5-Sangat setuju.

Data dipersembahkan dalam bentuk peratusan, jadual kekerapan dan seumpamanya. Selain itu, ukuran kecenderungan memusat seperti mod, median dan min memberi gambaran tentang ciri-ciri responden kajian manakala ukuran serakan seperti julat dan sisihan piawai pula menghuraikan sejauh mana data-data tersebut berselerak atau serupa antara satu sama lain. Ukuran-ukuran statistik deskriptif ini digunakan bagi menganalisis sebahagian besar maklum balas daripada soal selidik kajian, khususnya berkaitan demografi dan pandangan responden. Pengiraan min skor, julat antara min tertinggi dengan min terendah bagi skala *Likert* dikira untuk mendapatkan selang skala min. Bagi mengetahui tahap nilai min setiap pemboleh ubah yang dikaji, penyelidik mengkategorikan dan menginterpretasikan skor min kepada tiga tahap persetujuan, seperti di Jadual 3.

Jadual 3: Interpretasi Skor Min dalam Pemboleh Ubah Bebas dan Bersandar

Julat skala	Interpretasi skor min
1.00 - 2.33	Tahap yang rendah
2.34 - 3.66	Tahap yang sederhana
3.67 - 5.00	Tahap yang tinggi

Sumber: Diubahsuai daripada Pallant (2005)

Jadual 3 menunjukkan interpretasi skor min dalam pemboleh ubah bebas dan bersandar berdasarkan julat skala (Pallant, 2005). Kajian ini juga menjalankan teknik analisis ujian kebolehpercayaan (*reliability test*) yang merujuk kepada ketekalan sesuatu instrumen kajian dalam melahirkan skor yang setara. Guilford dan Fruchter (1978) menyatakan kebolehpercayaan merujuk kepada ketepatan, kestabilan dan ketekalan instrumen yang digunakan daripada satu keadaan kepada keadaan yang lain. Chua (2011) menyatakan dalam sesuatu kajian kebolehpercayaan merujuk kepada kebolehan suatu kajian untuk memperoleh nilai yang serupa apabila pengukuran yang sama diulangi. Dalam bahasa yang lebih teknikal, pengukuran kebolehpercayaan sesuatu ujian membolehkan kita untuk menganggarkan berapa bahagian daripada keseluruhan varian skor adalah ralat varian ralat. Jadual 4 di bawah adalah klasifikasi indeks kebolehpercayaan yang digunakan dalam kajian ini.

Jadual 4: Klasifikasi Indeks Kebolehpercayaan

Indikator	Nilai <i>Cronbach's Alpha</i>
Sangat tinggi	0.90 - 1.00
Tinggi	0.70 - 0.89
Sederhana	0.30 - 0.69
Rendah	0.00 - 0.29

Sumber: Diubahsuai daripada Pallant (2005)

Jadual 4 di atas adalah dirujuk. Kesahan (*validity*) dan kebolehpercayaan (*reliability*) adalah penting untuk mempertahankan kejituan instrumen. Semakin tinggi nilai dan tahap kebolehpercayaan dan kesahan instrumen, maka semakin jitu data-data yang akan diperoleh bagi menghasilkan kajian yang lebih baik dan berkualiti. Dalam kajian ini, selepas menyemak

reka bentuk soal selidik di kalangan ahli penyelidik, dua panel penilai juga di kalangan pakar di JANM telah dirujuk untuk tujuan kesahan instrumen yang digunakan dalam soal selidik. Seterusnya, untuk memastikan kebolehpercayaan, ujian *Cronbach's Alpha* dijalankan untuk menguji kebolehpercayaan item yang digunakan dalam soal selidik sebelum analisa ini diteruskan. Jadual 5 mempamerkan dapatan nilai *Cronbach's Alpha*.

Jadual 5: Cronbach's Alpha

Pemboleh ubah	<i>Cronbach's Alpha</i>	Bilangan Item
Penggunaan Maklumat Perakaunan Akruan	0.907	22
Perakaunan Akruan dan Matlamat Pembangunan Lestari	0.716	7
Perakaunan Akruan dan <i>Maqasid Syariah</i>	0.632	5
Keseluruhan	0.928	34

Perhatikan Jadual 5, kesemua pemboleh ubah sebanyak 34 item, menunjukkan nilai *Cronbach* secara keseluruhan ialah 0.928. Jika dilihat setiap item, nilainya lebih besar daripada 0.6 (Pallant, 2005). Oleh yang demikian, setiap item boleh digunapakai dan membuktikan kebolehpercayaan setiap item yang digunakan dalam soal selidik kajian ini.

4.0 Dapatan Kajian dan Perbincangan

Perbincangan dapatan kajian ini dibahagikan kepada empat sub-seksyen, dimulakan dengan maklumat demografi, penggunaan maklumat perakaunan, Matlamat Pembangunan Lestari (*Sustainable Development Goals, "SDG"*) dan *Maqasid Syariah*.

4.1 Maklumat Demografi

Latar belakang responden dalam sesuatu kajian adalah penting untuk memastikan soal selidik tersebut dijawab oleh responden yang disasarkan. Ringkasan demografi responden disenaraikan di Jadual 6 berikut:

Jadual 6: Demografi Responden

Item	Kategori	Kekerapan (f)	Peratus (%)
Kumpulan	Kementerian	33	61.1
	PBT	21	38.9
Jantina	Lelaki	18	33.3
	Perempuan	36	66.7
Umur	Di bawah 30 tahun	5	9.3
	31 – 40 tahun	21	38.9
	41 – 50 tahun	18	33.3
	Lebih daripada 50 tahun	10	18.5

Pendidikan	Matrikulasi/STPM/STAM/Diploma	13	24.1
	Ijazah Sarjana Muda	34	63.0
	Ijazah Sarjana	7	13.0
Sijil Profesional	Ya (ACCA; CIMA; CPA; ACMA; CGA; CAM, CIFPA; CA; MIA; Pengurusan Harta.)	18	33.3
	Tidak	36	66.7
Bidang Kepakaran	Tidak	36	66.7
	Perakaunan	40	74.1
	Kewangan	9	16.7
	Pengurusan	2	3.7
	Lain-lain	3	5.6
Kumpulan Perkhidmatan	Pengurusan Tertinggi	4	7.4
	Pengurusan dan Profesional	34	63.0
	Pelaksana	16	29.6
Tempoh Masa Perkhidmatan	5 tahun dan ke bawah	9	16.7
	6 – 10 tahun	7	13.0
	11 – 15 tahun	15	27.8
	16 – 20 tahun	11	20.4
	Lebih daripada 21 tahun	12	22.2

Berdasarkan Jadual 6 di atas, responden kumpulan kementerian (61.1%) melebihi 60% dan PBT (38.9%) hampir 40%. Begitu juga dengan peratusan jantina yang hampir sama di kalangan perempuan (66.7%) dan lelaki (33.3%). Melebihi 51.8% responden berumur 41 tahun dan ke atas menunjukkan kematangan mereka dengan membabitkan melebihi tiga suku (76%) responden mempunyai sekurang-kurangnya Ijazah Sarjana Muda. Malah, sepertiga (33.3%) daripada mereka memiliki sijil kelayakan profesional.

Skop kajian yang dijalankan pula berkaitan perakaunan, menepati majoriti (74.1) responden bidang perakaunan yang menjawab soal selidik yang diedarkan, manakala responden yang lain masih lagi dalam bidang berkaitan seperti kewangan dan pengurusan (20.4%) dan lain-lain bidang hanya 5.6%. Jika dilihat kumpulan perkhidmatan responden pula, majoriti (70.4%) di kalangan mereka merupakan daripada kumpulan pengurusan dan profesional dan ke atas, manakala sepertiga (29.6%) lagi adalah pelaksana. Di kalangan responden, majoriti (70.4%) berpengalaman dalam perkhidmatan melebihi 10 tahun. Ini menunjukkan kebanyakan responden yang menjawab soal selidik ini mempunyai pengetahuan dan berpengalaman dalam skop kajian ini iaitu berkenaan dengan perakaunan akruan. Jadual 7 berikutnya memperlihatkan perbezaan min di antara kementerian dan PBT:

**Jadual 7: Perbezaan Min di antara Kementerian dan PBT
 (Penggunaan Perakaunan Akruan)**

Aspek Penggunaan Maklumat Perakaunan Akruan		Levene's Test for		t-test for Equality of Means			
		F	Sig	t	df	Sig. (2- tailed)	Mean Difference
Keseluruhan	<i>Equal Variances Assumed</i>	0.077	0.782	-0.484	52	0.630	-0.07284
	<i>Equal Variances Not Assumed</i>			-0.485	42.963	0.630	-0.07284
Belanjawan	<i>Equal Variances Assumed</i>	0.006	0.941	-1.112	52	0.271	-0.24329
	<i>Equal Variances Not Assumed</i>			-1.128	44.778	0.265	-0.24329
Pengurusan Aset	<i>Equal Variances Assumed</i>	0.056	0.814	0.333	52	0.741	0.05844
	<i>Equal Variances Not Assumed</i>			0.332	42.592	0.741	0.05844
Pengurusan Liabiliti	<i>Equal Variances Assumed</i>	0.011	0.919	-0.629	52	0.532	-0.12554
	<i>Equal Variances Not Assumed</i>			-0.653	47.795	0.517	-0.12554
Penzahiran Akauntabiliti	<i>Equal Variances Assumed</i>	1.275	0.264	0.128	52	0.899	0.01905
	<i>Equal Variances Not Assumed</i>			0.121	35.422	0.904	0.01905

Berdasarkan Jadual 7, melihat dari segi perbandingan kumpulan di antara kementerian dan PBT dalam penggunaan maklumat yang diperolehi dalam perakaunan akruan, tiada perbandingan kumpulan dan ianya tidak signifikan apabila $t(52)=-0.484$, $p=0.630$. Dapatan ujian perbezaan tersebut terpakai kepada kesemua pernyataan penggunaan maklumat perakaunan akruan dalam belanjawan ($p=0.271$), pengurusan aset ($p=0.741$), pengurusan liabiliti ($p=0.532$) dan penzahiran akauntabiliti ($p=0.899$). Ini menjelaskan penandaarasan kementerian terhadap PBT yang lebih mendahului dalam penggunaan perakaunan akruan adalah relevan. Menurut Jainal dan Basnan (2018), PBT di Malaysia telah menggunakan perakaunan akruan sejak 2017. Analisa seterusnya tidak membezakan dapatan kementerian dan PBT memandangkan tiada perbezaan yang signifikan secara statistik.

4.2 Penggunaan Maklumat Perakaunan Akruan

Keseluruhannya, dapatan penggunaan maklumat perakaunan akruan dalam keempat-empat aspek ditunjukkan dengan nilai min dan sisihan piawai seperti di Jadual 8 seterusnya:

Jadual 8: Nilai Min (Purata) dan Sisihan Piawaian Penggunaan Perakaunan

Pernyataan	Keseluruhan		Keutamaan
	Min	SP	Min
Penggunaan perakaunan akruan dalam belanjawan	3.737	0.785	4
Penggunaan perakaunan akruan dalam pengurusan aset	4.138	0.624	2
Penggunaan perakaunan akruan dalam pengurusan liabiliti	4.185	0.710	1
Penggunaan perakaunan akruan dalam penzahiran akauntabiliti	4.125	0.527	3
Keseluruhan	4.047	0.535	

Berdasarkan Jadual 8, nilai M=min (purata), kesemua responden bersetuju dengan penggunaannya dalam empat aspek mengikut keutamaan, i. pengurusan liabiliti (M=4.185), ii. pengurusan aset (M=4.138), dan iii. penzahiran akauntabiliti (4.125), tetapi agak bersetuju penggunaannya dalam belanjawan (M=3.737). Dapatan kurang setuju tersebut bertentangan dengan kajian yang dijalankan oleh Jainal & Basnan (2018) yang membuktikan sebaliknya. Item yang digunakan dalam instrumen belanjawan mungkin mempengaruhi dapatan kajian. Kajian lain menjelaskan belanjawan adalah merujuk kepada perancangan keperluan kewangan tahun hadapan (Yuliati et al., 2019; Indriani et al., 2018; Ahmad, 2016; Atan & Yahya, 2015). Oleh sebab itu, perakaunan akruan mungkin dilihat kurang digunakan dalam belanjawan. Perincian bagi setiap penggunaan maklumat perakaunan dianalisa kepada 4 bahagian, iaitu: i. Belanjawan; ii. Pengurusan aset; iii. Pengurusan liabiliti; dan iv. Penzahiran akauntabiliti.

4.2.1 Penggunaan Maklumat Akruan dalam Belanjawan

Hasil analisa penggunaan maklumat akruan diperhalusi dengan melihat penggunaannya dalam aspek yang pertama iaitu belanjawan, seperti di Jadual 9 di bawah:

Jadual 9: Penggunaan Perakaunan Akruan dalam Belanjawan

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan maklumat perakaunan akruan adalah untuk tujuan belanjawan secara keseluruhan.	4.037	0.989	3
2.	Penggunaan maklumat perakaunan akruan adalah sebagai input penyediaan belanjawan dalaman di jabatan anda.	4.111	0.904	2
3.	Penggunaan maklumat perakaunan akruan kurang membantu dalam membuat keputusan pelaburan utama.	2.592	1.353	5
4.	Penggunaan maklumat perakaunan akruan adalah untuk membuat keputusan mengenai sumber peruntukan dalam belanjawan.	4.185	0.848	1
5.	Penggunaan maklumat yang diperolehi daripada perakaunan akruan digunakan secara meluas dalam belanjawan.	3.759	0.989	4
	Keseluruhan	3.737	0.785	

Berdasarkan nilai min yang tertinggi, Jadual 9 menunjukkan bahawa responden bersetuju pertamanya dengan item 4 (M=4.185); penggunaan maklumat perakaunan akruan adalah untuk membuat keputusan mengenai sumber peruntukan dalam belanjawan (Jainal & Basnan, 2018). Keduanya, item 2 (M=4.111); input penyediaan belanjawan dalaman dan ketiga, item 1 (M=4.037) dan bertujuan belanjawan secara keseluruhan. Walau bagaimanapun, responden kurang bersetuju dengan item 5 (M=3.579); ini bermaksud penggunaan maklumat yang diperolehi daripada perakaunan akruan tidak digunakan secara meluas dalam belanjawan. Manakala responden tidak bersetuju (M=2.592); justeru responden berpandangan bahawa penggunaan maklumat perakaunan akruan dilihat dapat membantu dalam membuat keputusan pelaburan utama.

4.2.2 Penggunaan Perakaunan Akruan dalam Pengurusan Aset

Hasil dapatan penggunaan maklumat akruan juga dianalisa dalam aspek yang kedua, iaitu pengurusan aset seperti di Jadual 10 berikut:

Jadual 10: Penggunaan Perakaunan Akruan dalam Pengurusan Aset

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan maklumat perakaunan akruan adalah untuk mengetahui kedudukan aset jabatan secara keseluruhan.	4.481	0.606	1
2.	Penggunaan maklumat perakaunan akruan adalah untuk menilai kemampuan aliran tunai jabatan bagi menguruskan aset.	4.333	0.777	2
3.	Penggunaan maklumat perakaunan akruan oleh jabatan adalah untuk mengoptimumkan penggunaan aset.	4.056	1.035	4
4.	Maklumat perakaunan akruan kurang digunakan untuk merancang pembelian dan penjualan aset.	3.518	1.255	5
5.	Penggunaan maklumat perakaunan akruan adalah untuk memantau pengurusan aset jabatan dengan lebih cekap.	4.222	0.904	3
6.	Penggunaan maklumat perakaunan akruan adalah untuk mengurus aset jabatan dengan lebih efisien (<i>utilize</i>).	4.222	0.861	3
Keseluruhan		4.138	0.624	

Jadual 10 menunjukkan bahawa responden bersetuju terhadap kesemua item, kecuali item 4. Min yang tertinggi ialah item 1 (M=4.481); penggunaan maklumat perakaunan akruan adalah untuk mengetahui kedudukan aset jabatan secara keseluruhan. Ia diikuti dengan item 2 (M=4.333); untuk menilai kemampuan aliran tunai jabatan bagi menguruskan aset. Seterusnya, item 5 dan 6 dengan nilai min yang sama (M=4.222); untuk memantau pengurusan aset jabatan dengan lebih cekap dan mengurus aset jabatan dengan lebih efisien (*utilize*) dan diakhiri dengan item 3 (M=4.056); untuk mengoptimumkan penggunaan aset (Yuliati et al., 2019). Namun begitu, responden tidak bersetuju dengan item 4 (M=3.518); ini menjelaskan bahawa responden percaya maklumat perakaunan akruan adalah digunakan untuk merancang pembelian dan penjualan aset, mengawal kewangan secara amnya (Edwards, 2021).

4.2.3 Penggunaan Perakaunan Akruan dalam Pengurusan Liabiliti

Analisa seterusnya dilanjutkan dengan melihat penggunaan maklumat akruan dalam aspek yang ketiga, iaitu pengurusan liabiliti seperti yang dipamerkan dalam Jadual 11 seterusnya:

Jadual 11: Penggunaan Perakaunan Akruan dalam Pengurusan Liabiliti

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan maklumat perakaunan akruan adalah untuk membolehkan liabiliti jabatan dapat digambarkan secara keseluruhan.	4.407	0.687	1
2.	Penggunaan maklumat perakaunan akruan adalah untuk menilai kemampuan jabatan bagi menghasilkan keperluan aliran tunai.	4.222	0.816	4
3.	Penggunaan maklumat perakaunan akruan adalah untuk jabatan anda menjelaskan liabiliti jangka pendek.	4.167	0.884	5
4.	Maklumat perakaunan akruan kurang digunakan dalam merancang dan mengurus liabiliti jangka panjang dalam belanjawan.	3.648	1.184	6
5.	Penggunaan maklumat perakaunan akruan adalah untuk memantau liabiliti jabatan dengan lebih tepat.	4.388	0.762	2
6.	Penggunaan maklumat perakaunan akruan adalah untuk mengurus liabiliti jabatan dengan lebih menepati masa (<i>timely</i>).	4.277	0.919	3
Keseluruhan		4.185	0.710	

Berdasarkan Jadual 11 di atas, penggunaan perakaunan akruan dalam pengurusan liabiliti turut dipersetujui oleh responden, dengan hanya satu pengecualian. Item 1 (M=4.407) menunjukkan nilai min yang tertinggi; responden bersetuju perakaunan akruan digunakan untuk membolehkan liabiliti jabatan dapat digambarkan secara keseluruhan. Turutan seterusnya adalah item 5 (M=4.388); untuk memantau liabiliti jabatan dengan lebih tepat, item 6 (M=4.277); untuk mengurus liabiliti jabatan dengan lebih menepati masa (*timely*), item 2 (M=4.222); untuk menilai kemampuan jabatan bagi menghasilkan keperluan aliran tunai dan item 3 (M=4.167); untuk jabatan menjelaskan liabiliti jangka pendek (Basnan et al., 2013; Tran & Noguchi, 2020). Sebaliknya, responden kurang bersetuju dengan item 4 (M=3.518) yang menjelaskan bahawa maklumat perakaunan akruan sebenarnya digunakan dalam merancang dan mengurus liabiliti jangka panjang dalam belanjawan (Yuliati et al., 2019).

4.2.4 Penggunaan Perakaunan Akruan dalam Penzahiran Akauntabiliti

Dapatan bagi penggunaan maklumat akruan diakhiri dengan aspek keempat, iaitu penzahiran akauntabiliti seperti paparan di Jadual 12 berikutnya:

Jadual 12: Penggunaan Perakaunan Akruan dalam Penzahiran Akauntabiliti

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan maklumat perakaunan akruan adalah untuk menzahirkan akauntabiliti jabatan secara keseluruhan.	4.407	0.599	4
2.	Penggunaan maklumat perakaunan akruan adalah penting bagi tujuan pelaporan yang komprehensif.	4.537	0.573	1
3.	Penggunaan maklumat perakaunan akruan dapat mempertingkatkan ketelusan dalam pengurusan kewangan jabatan.	4.463	0.635	2
4.	Maklumat perakaunan akruan kurang membantu jabatan anda untuk mewujudkan tadbir urus yang baik.	2.778	1.436	5
5.	Penggunaan maklumat perakaunan akruan dapat menghasilkan pelaporan yang lestari.	4.444	0.603	3
Keseluruhan		4.125	0.527	

Dapatan Jadual 12 menunjukkan responden paling bersetuju pertama, dengan item 2 (M=4.537); penggunaan maklumat perakaunan akruan adalah penting bagi tujuan pelaporan yang komprehensif (Jainal & Basnan, 2018). Kedua, item 3 (M=4.463); penerapan perakaunan asas akruan dapat meningkatkan imej organisasi. Ketiga, item 5 (M=4.444); penggunaan maklumat perakaunan akruan dapat menghasilkan pelaporan yang lestari. Keempat, item 1; bagi tujuan menzahirkan akauntabiliti jabatan secara keseluruhan (Basnan et al., 2013; Tran & Noguchi, 2020; Edwards, 2021). Berbeza dengan item lain, responden tidak bersetuju dengan item 4 (M=2.778). Responden menegaskan bahawa maklumat perakaunan akruan mampu membantu jabatan untuk mewujudkan tadbir urus yang baik.

4.3 Matlamat Pembangunan Lestari (*Sustainable Development Goals*, “SDG”) dan Maklumat Perakaunan Akruan

Analisa penggunaan maklumat perakaunan akruan dalam kajian ini dihubung kait dengan SDG, dapatan analisis diperlihatkan di Jadual 13 berikut:

Jadual 13: Maklumat Perakaunan Akruan dan SDG

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan perakaunan asas akruan dapat memacu pertumbuhan ekonomi negara.	4.351	0.619	3
2.	Penerapan perakaunan asas akruan dapat mendorong perkembangan teknologi yang lebih baru.	4.259	0.619	6
3.	Penerapan perakaunan asas akruan dapat meningkatkan imej organisasi.	4.388	0.626	2
4.	Penggunaan perakaunan asas akruan kurang membantu dalam perbelanjaan berhemah dan pengurangan pembaziran sumber.	2.667	1.387	7
5.	Penggunaan perakaunan asas akruan memerlukan latihan dan kursus untuk meningkatkan pengetahuan.	4.648	0.554	1
6.	Penggunaan perakaunan asas akruan dapat mengoptimumkan tugas.	4.296	0.743	5
7.	Penggunaan perakaunan asas akruan dapat memastikan keseimbangan dan penyelarasan dalam pembangunan jabatan/institusi.	4.330	0.672	4
Keseluruhan		4.134	0.481	

Jadual 13 menunjukkan hasil analisis item berkaitan perakaunan akruan dan SDG. Responden bersetuju dengan kesemua item 1-7, seperti yang diperlihatkan dalam jadual berkenaan, kecuali item 4. Daripada tujuh item, item 5 menampakkan nilai min yang tertinggi (M=4.648); responden paling bersetuju bahawa penggunaan perakaunan asas akruan memerlukan latihan dan kursus untuk meningkatkan pengetahuan. Ini dapat dilihat dengan usaha yang berterusan secara berkala oleh JANM dengan penubuhan Pasukan Pelaksana Perakaunan Akruan (PPPA) sejak tahun 2011. Ini adalah seiring dengan SDG 16 dengan mensasarkan sebuah institusi yang berwibawa dan menjelaskan impak perakaunan akruan terhadap SDG untuk dicapai.

Seterusnya, secara turutan nilai min ia diikuti dengan item 3 (M=4.388); penggunaan perakaunan akruan turut dapat meningkatkan imej organisasi, item 1 (M=4.351); ia dapat memacu pertumbuhan ekonomi negara, item 7 (M=4.330); untuk memastikan keseimbangan dan penyelarasan dalam pembangunan jabatan/institusi, item 6 (M=4.296); dapat mengoptimumkan tugas, dan item 2 (M=4.259); mendorong perkembangan teknologi yang lebih baru. Sungguhpun begitu, responden tidak bersetuju dengan item 4 (M=2.667). Secara jelas, responden mempercayai penggunaan perakaunan asas akruan dapat membantu dalam perbelanjaan berhemah dan mengurangkan pembaziran sumber. Analisa disambung pula dengan melihat perbezaan min antara kumpulan responden tersebut bagi perakaunan akruan dan SDG seperti yang ditunjukkan selanjutnya di Jadual 14:

Jadual 14: Perbezaan Min antara Kumpulan Kementerian dan PBT (SDG)

		Levene's Test for		t-test for Equality of Means			
		F	Sig	T	df	Sig. (2-tailed)	Mean Difference
Perakaunan Akruan & SDG	Equal Variances Assumed	0.284	0.596	-0.014	52	0.989	-000186
	Equal Variances Not Assumed			-0.013	35.785	0.990	-000186

Jadual 14 memperlihatkan tiada perbandingan kumpulan dan tidak signifikan apabila $t(52)=-0.014$, $p=0.989$. Justeru, sama seperti hasil analisa sebelumnya nilai keseluruhan min tanpa membezakan kumpulan responden kementerian dan PBT sudah memadai untuk menghuraikan dapatan kajian ini.

4.4 Maqasid Syariah dan Maklumat Perakaunan Akruan

Dapatan penggunaan maklumat perakaunan akruan diakhiri dengan menganalisa hubung kaitnya dengan *Maqasid Syariah* seperti ditunjukkan di Jadual 15 berikut:

Jadual 15: Maklumat Perakaunan Akruan dan *Maqasid Syariah*

Item	Pernyataan	Min	SP	Keutamaan
1.	Penggunaan perakaunan asas akruan adalah untuk memastikan amalan pengurusan kewangan terbaik ke arah menzahirkan akauntabiliti jabatan/institusi.	4.518	0.574	1
2.	Penggunaan perakaunan asas akruan dapat memastikan penerapan nilai-nilai prinsip Islam (contoh: amanah, adil, ihsan dan telus).	4.370	0.681	3
3.	Perakaunan asas akruan kurang digunakan dalam penyediaan belanjawan dengan adil dan saksama untuk kesejahteraan rakyat.	3.611	1.172	4
4.	Penggunaan perakaunan asas akruan dapat meningkatkan tahap pengetahuan dalam memastikan kecekapan pegawai yang terlibat.	4.388	0.626	2
5.	Penggunaan perakaunan asas akruan dapat meningkatkan pemilikan aset yang optimal untuk dimanfaatkan bagi kegunaan awam.	4.388	0.656	2
Keseluruhan		4.256	0.492	

Jadual 15 mempamerkan analisis nilai min yang menunjukkan persetujuan responden terhadap kesemua item maklumat perakaunan akruan dan *Maqasid Syariah*. Min yang tertinggi pada item 1 (M=4.518); menjelaskan penggunaan perakaunan asas akruan adalah untuk memastikan amalan pengurusan kewangan terbaik ke arah menzahirkan akauntabiliti jabatan/institusi. Dapatan tersebut seiring dengan prinsip *Maqasid Syariah* iaitu ke arah pemeliharaan keturunan (*al-nasb*). Seterusnya, ia diikuti oleh item 4 dan 5 dengan nilai min yang sama (M=4.388); penggunaannya dapat meningkatkan tahap pengetahuan dalam memastikan kecekapan pegawai yang terlibat dan meningkatkan pemilikan aset yang optimal untuk dimanfaatkan bagi kegunaan awam. Masing-masing menyokong kepada prinsip *Maqasid Syariah* untuk memelihara akal (*al-aql*) dan harta (*al-mal*), serta diakhiri dengan item 2 (M=4.370); memastikan penerapan nilai-nilai prinsip Islam (contoh: amanah, adil, ihsan dan telus), sepertimana yang dituntut untuk memelihara agama (*ad-din*).

Walau bagaimanapun, responden kurang bersetuju dengan item 3 (M=3.611). Jelasnya, mereka meyakini perakaunan asas akruan dapat digunakan dalam penyediaan belanjawan dengan adil dan saksama untuk kesejahteraan rakyat. Dalam konteks ini, ia mempunyai hubung kait dengan memelihara nyawa (*al-nafs*), sebagaimana turut ditegaskan dalam prinsip *Maqasid Syariah*. Dapatan kajian ini jelas menyokong kesemua lima prinsip tersebut (Zakariyah et al., 2017). Analisis seterusnya menguji perbezaan min di antara kumpulan responden seperti di Jadual 16:

Jadual 16: Perbezaan Min antara Responden Kementerian dan PBT (*Maqasid Syariah*)

		Levene's Test for		t-test for Equality of Means			
		F	Sig	t	df	Sig. (2- tailed)	Mean Difference
Perakaunan Akruan dan Maqasid Syariah	<i>Equal Variances Assumed</i>	4.920	0.031	0.094	52	0.926	0.01299
	<i>Equal Variances Not Assumed</i>			0.085	30.753	0.933	0.01299

Jadual 16 menunjukkan dari segi perbandingan kumpulan bagi perakaunan akruan dan *Maqasid Syariah* adalah tiada perbezaan dan tidak signifikan apabila $t(52)=0.095$, $p=0.926$; menjelaskan tiada keperluan untuk membezakan dapatan kumpulan responden antara kementerian dan PBT.

5.0 Rumusan

Secara konklusif, kajian rintis ini bertujuan untuk mengenal pasti sejauh mana penggunaan maklumat yang diperolehi dari perakaunan akruan diamalkan di kalangan kementerian dan PBT di Malaysia. Penggunaan tersebut dilihat dalam empat aspek; belanjawan, pengurusan aset, pengurusan liabiliti dan penzahiran akauntabiliti, di samping melihat impak terhadap Matlamat Pembangunan Lestari (*Sustainable Development Goals*, "SDG") berdasarkan *Maqasid Syariah*. Dapatan kajian ini membuktikan tiada perbandingan yang signifikan di antara kementerian dan PBT. Justeru, penandaarasan kementerian terhadap PBT adalah relevan dalam memastikan penggunaan maklumat perakaunan akruan dimanfaatkan secara optimum, memandangkan PBT telah mendahului kementerian dalam mengamalkan perakaunan akruan.

Kajian ini membuktikan penggunaan maklumat perakaunan akruan secara turutan: i) Pengurusan liabiliti - menggambarkan liabiliti secara keseluruhan; ii) Pengurusan aset - mengetahui kedudukan aset secara keseluruhan; iii) Penzahiran akauntabiliti - menyokong kepada pelaporan yang lebih komprehensif; dan iv) Belanjawan - menentukan peruntukan sumber belanjawan. Dalam usaha memastikan kejayaan perakaunan akruan, penggunaannya perlu dimanfaatkan sepenuhnya. Oleh yang demikian, responden menegaskan keperluan latihan dan kursus perlu diteruskan bagi menjamin kejayaan pelaksanaan perakaunan akruan melalui impak penggunaannya terhadap SDG. Impak tersebut dikenal pasti seiring dengan kelima-lima prinsip *Maqasid Syariah* dalam memelihara dan melindungi secara keutamaannya: i) Nyawa (*al-nasb*); ii) Akal (*al-aql*), iii) Harta (*al-mal*); iv) Agama (*ad-din*); dan v) Keturunan (*al-nafs*). Kajian ini mencadangkan pelaporan yang lebih komprehensif dengan rangka kerja pelaporan yang memetakan laporan korporat kepada SDG berdasarkan *Maqasid Syariah*. Ia dipercayai merupakan salah satu sistem sokongan dengan pelaporan yang lebih komprehensif untuk memberi gambaran keseluruhan supaya misi dan visi organisasi dapat dicapai melalui keseimbangan disiplin fiskal dan pengurusan kewangan yang lebih efektif.

Sungguhpun begitu, dapatan kajian ini perlu ditafsir dengan mengambilkira beberapa limitasi kajian. Misalnya, penggunaan maklumat perakaunan akruan tertakluk kepada instrumen yang digunakan dalam soal selidik sahaja. Jelasnya, kajian rintis ini hanya membabitkan responden yang sangat kecil berbanding populasi disebabkan kekangan PKP (Perintah Kawalan Pergerakan) dan tempoh kajian yang singkat. Walau bagaimanapun, dapatan kajian dipercayai dapat menjadi platform untuk merungkai hubungan kait penggunaan maklumat perakaunan akruan dan melihat impak terhadap SDG berdasarkan *Maqasid Syariah*. Kajian akan datang boleh mensasarkan kumpulan responden yang lebih besar dan melanjutkan kajian ini dengan kaedah kualitatif untuk mendapatkan kefahaman yang lebih meluas dan mendalam.

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The Shift from Cash to Accrual Budgeting in the Malaysian Public Sector

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<https://doi.org/10.58458/ipnj.v11.01.06.0072>

Received: 30 June 2021

Reviewed: 24 July 2021

Accepted: 08 November 2021

Abstract

Purpose: This qualitative study mainly aims to examine the awareness of budget preparers on accrual-based budgeting in the Malaysian Public sector and their perception of its challenges. Specifically, the objectives of this paper are twofold. Firstly, to provide a critical review of the literature on the accrual-based budgeting. Secondly, to examine the awareness of budget preparers of the key concepts of accrual-based budgeting and its challenges to successfully implement accrual-based budgeting in Malaysia.

Design/Methodology/Approach: This study employs face-to-face and semi-structured interviews conducted with six (6) budget preparers who have been carefully identified and selected within the public sector in Malaysia.

Findings: Our results indicate that there is a high level of awareness of accrual-based budgeting among budget preparers, but this is not the case with other employees who do not have hands-on practice in accounting. Our findings also reveal that knowledge and understanding, upper management enforcement and aggressive promotion is important in determining awareness of accrual budgeting. A further examination of implementation challenges reveals that understanding, cost increment, resistance to change, information and training are the main concerns in implementing accrual-based budgeting. Our results are very similar to studies in other countries.

This article is part of a research on Modelling Budget Preparers' Awareness on Accrual-Based Budgeting in the Malaysian Public Sector, supported by the Accountant General's Department of Malaysia through *Geran Penyelidikan Perakaunan dan Kewangan Sektor Awam Bil. 1 Tahun 2021* (JANM.IPNC PD.100-3/3/2 Jld. 2(6)).

Practical Implications: This study sheds light on awareness of the concept of accrual-based budgeting among budget preparers in the Malaysian public sector and has certain implications pertaining to policy-making.

Originality/Value: Our study is among the first to provide an in-depth analysis of accrual-based budgeting in the Malaysian setting. The findings of this study are expected to provide information to regulators and standard setters on the awareness and the implementation issue of accrual-based budgeting.

Keywords: Accrual-based budgeting, public sector, qualitative, awareness, challenges

1.0 Introduction

A public sector reform trend in Malaysia has brought to light the necessity for the government to adopt aspects of accrual accounting as the basis of its budgeting and reporting. There is no evidence to indicate that this trend is reversing. Similar to other governments, the Malaysia government also plans to move from cash accounting towards accrual accounting in their budgeting reporting. Proponents of accrual accounting argue that accrual-based budgeting (at the national level) provides better information and increases government accountability. On the other hand, at the organisation level accrual-based financial statements provide better measures of organisational efficiency and effectiveness. At the same time, opponents contend that implementation and operation are expensive and more complex to understand. Lessons regarding the implementation of accrual accounting have been identified from the experience of developed countries (Athukorala & Reid, 2003). Despite the noticeable benefits, approximately only a quarter of OECD countries prepare their annual budgets on an accrual basis. The vast majority of countries actually prepare accrual financial statements using cash appropriations for their budgets (OECD/IFAC, 2017).

The transition from cash accounting to accrual accounting in public sector organisations does not only remain under scrutiny, but is also seen as controversial, particularly in respect to public budgeting. For instance, among OECD member countries there appears to be a growing consensus concerning the benefits of adopting accrual accounting in the public sector, despite the apparent lack of consensus regarding the adoption of accrual budgeting (Blondal, 2004). Accordingly, accrual-based budgeting, which would be significantly affected by accrual accounting, is also under the review of various agencies or organisations in the public sector. The impact of accrual-based budgeting is significant, similar to the impact of accrual accounting. Initially, accrual accounting was customised for private enterprises to generate income. Revenues and costs are matched to yield timely financial result (profit or loss), which may indicate the efficiency of a private entity. Conversely, the government raises tax revenues to be spent on public expenditure. This expenditure is not matched to revenue, but must be approved by legislation that enables government spending for specific purposes. The aim is

not greatly inclined towards profit or loss, but rather the social outcome of public expenditure. Nevertheless, governments, particularly those in developed countries, have taken several initiatives to reform their accounting system, not only in terms of accounting practices, but also budgeting, consolidation, accounting standard setting and recently, external audit practices. The motivation for the writing of this paper has arisen from various issues. Firstly, the inability of past accounting research to reflect the understanding of budget preparers on key issues revolving around accrual-based budgeting in Malaysia. There are few studies on accrual accounting, whereas much less focus has been given to accrual-based budgeting. Secondly, the status of accrual-based budgeting in other countries, which is in various stages of implementation. For example, France applies accrual-based financial reports, but has not revealed any intention to adopt accrual budgeting. The United Kingdom in the initial stage implemented accrual accounting and reporting only for its executive agencies and subsequently has proceeded to adopt accrual accounting and budgeting for central government. Australia introduced annual accrual reporting and several years later decided to adopt accrual budgeting. New Zealand, on the other hand, introduced accrual reporting and budgeting at the same time (Khan & Mayes, 2009). The main concern here is “Will Malaysia implement both accrual accounting and budgeting or decide to implement accrual accounting while still maintaining cash appropriations in the basis of its budgeting?”

Although many budgetary reforms taking place in developed countries have been successful, the same cannot be said for developing countries. Developing countries have not been able to simply adopt the format used by developed countries for the reason that the process could become disruptive and chaotic (Allen, 2009). Thus, the adoption of budgetary reform should be developed based on each country's realities (Bale & Dale, 1998).

On May 11th 2011, the Prime Minister of Malaysia officiated the implementation of accrual accounting with effect from Fiscal Year 2015, followed by the issuance of the Malaysian Public Sector Accounting Standards (MPSAS) by the Accountant General's Department (AGD). The implementation of accrual-based MPSAS has been strongly encouraged in order to increase transparency and accountability of the Malaysian public sector (Accountant General Department, 2013; Mahadi, Noordin, Mail, & Sariman, 2014; Pasukan Pelaksanaan Perakaunan Akruan [PPPA], 2013). All federal ministries had been scheduled to move to accrual accounting in 2015, with state government to follow suit. Nevertheless, full adoption of accrual accounting has not been achieved as yet due to several factors such as postponements, delays and transitions. Among additional factors that should be considered are the need to amend the Financial Procedures Act 1957 and other relevant legislation in order to provide an enabling environment for the move to accrual-based accounting. At present, accrual implementation processes are also still ongoing at the state government, local government (city councils, municipal councils and district councils), statutory bodies and federal levels of government agencies (Mohd Ali, Abdullah, Ab Majid, Basri, & Noor Minhad, 2020). Despite facing obstacles and challenges (such as postponements and delays) during the implementation of accrual accounting in the public sector, it is quite clear that the research on accrual-based budgeting would be the next step forward. However, the government may

decide to carry out an analysis as the first step before embarking on the more complex task of introducing accrual budgeting. It is an established fact that two differing systems, i.e. accrual accounting and cash budgeting, are inadvisable because of incompatibility issues and conflicting goals between the two reportings (Diamond, 2006; Monteiro & Gomes, 2013). Without change in the budgeting regime, a move to accrual accounting would fail to foster the necessary change in culture and incentives and, in effect, accrual accounting would only produce limited benefits (Khan & Mayes, 2009). In response to such calls, this study focuses on the understanding of budget preparers (accountants and non-accountants) regarding accrual-based budgeting concepts and issues. This research mainly aims to increase understanding of the level of awareness of budget preparers in the public sector of Malaysia pertaining to accrual-based budgeting.

Adoption of an accrual accounting system in preparing budgets for the public sector requires an accounting system that records economic events at the time of their occurrence, instead of instances when cash is collected or disbursed. Therefore, highly supported human resources and an improved environment are necessary to ensure that accounting information for budgets is complete, timely and accurate. Despite the importance of this type of budgeting system, there is a significantly lack of studies on the adoption of accrual-based budgeting. Thus, the motivation exists of a need to investigate awareness of accrual-based budgeting and whether efficient human resources, a supportive environment and a positive attitude influence such awareness. It is hoped that the study may answer the question of the following issue: "Are Malaysian public sector budget preparers aware of budgeting based on accrual accounting?"

In the case of Malaysia, lessons regarding accrual-based accounting may be extracted from the literature of Nik Wan, 2005; Saleh & Pendlebury, 2006; Hasan & Yeow, 2012; Mahat & Ali, 2012; Ahmad, Ahmad, Mazlan & Pangat, 2013; Hasan, Saleh, & Isa, 2013; Ahmad, Ahmad & Mohamed, 2014; Azmi & Mohamed, 2014; Mahadi et al., 2014; Salleh, Ab Aziz & Bakar, 2014; Ahmad, Mazlan, Ahmad & Pangat, 2015; Ahmad, 2016; Ismail, Siraj & Baharim, 2018; and Yusof & Jaafar, 2018. However, to the best of our knowledge, there has never been any study conducted from the perspective of budget preparers on the awareness and the implementation of accrual-based budgeting in Malaysia. This lack of study leads to our research questions:

Research Question 1: Are budget preparers aware of the accrual-based budgeting? What are the factors that could influence awareness of accrual-based budgeting?

Research Question 2: What are the challenges that could be faced by the Malaysian public sector in the implementation of accrual-based budgeting?

The objectives of this paper are twofold. The primary objective provides a critical review of literature pertaining to accrual-based budgeting. The second objective, which is the core research of this paper, is to examine awareness of budget preparers regarding key concepts of accrual-based budgeting, such as the advantages, disadvantages, challenges and

prerequisites of successful implementation of accrual-based budgeting in Malaysia. Hence, this research sheds light on awareness of the concept of accrual-based budgeting among budget preparers in the Malaysian public sector.

This study employs face-to-face and semi-structured interviews conducted with six (6) budget preparers who have been carefully identified and selected from the public sector in Malaysia. Our results indicate that there is a high level of awareness of accrual-based budgeting among budget preparers, but this is not the case with other employees who do not have hands-on practice in accounting. Our findings have also revealed that knowledge and understanding, top management enforcement and aggressive promotion is important in determining awareness of accrual budgeting. A further examination of implementation challenges reveals that understanding, cost increment, resistance to change, information and training are the main concerns in implementing accrual-based budgeting. Our results are very similar to studies in other countries.

The remaining part of the paper proceeds as follows. Section 2 reviews studies on the advantages and disadvantages of accrual-based budgeting, its implementation and challenges. Section 3 outlines the research method. Section 4 discusses findings and results. Section 5 contains concluding comments.

2.0 Literature Review

2.1 Accrual accounting, accrual-based budgeting and reporting

In this sub-section, fundamental concepts of accrual accounting, accrual-based budgeting and reporting will be explored. In layman's terms, cash accounting records receipts when cash is received or banked and payments when cash is paid, whereas accrual accounting recognises events and transactions when they are incurred, regardless of whether cash is exchanged (Athukorala & Reid, 2003). The move to accrual accounting is taken by countries to improve performance and financial management for coordination and control, correctly understand programme costs (attribute costs to appropriate time periods and events, visibility of long term effects), expand and improve information for resource allocation, improve transparency, compare with the public sector, improve quality and consistency in financial reporting, facilitate improvements in asset and cash management and also reduce opportunities of fraud and corruption (Athukorala & Reid, 2003; Carlin, 2004; Guthrie, 1998; Jagalla, Becker & Weber, 2011; Mellor, 1996).

Although the goals of moving into accrual accounting are similar between countries, however their respective design and implementation of the system differ. The International Organisation of Supreme Audit Institutions (INTOSAI) has classified four types of financial reporting systems in the public sector: full cash accounting, modified cash accounting, modified accrual accounting and full accrual accounting. Cash and full accrual accounting basically represent two end points on a spectrum of possible accounting and financial reporting bases

(Van der Hoek, 2005). There are various adaptations or degrees of accrual implementation by governments. In the implementation of accrual accounting, most countries require the preparation of at least four reports i.e. an operating statement reflecting revenues and expenses, a statement of assets and liabilities of the entity, a cash flow statement related to operating, investment and financing activities, and a statement presenting additional information on a disaggregated basis (detailed management reports on segments of operations) (Barton, 2005a; Van der Hoek, 2005). However, for countries that implement cash accounting, the only report issued is the Cash Flow Statement and the only asset reported is the cash balance. Alternatively, countries which implement partial accrual accounting prepare two statements: cash flow statement and a summary of external transactions (both for cash and credit) (Barton, 2005a).

Accrual-based budget is a budget prepared based on accrual accounting concepts. Accrual-based budgeting is a part of a more comprehensive financial management and management accounting reforms in the public sector, and is an instrument and technique to assist in the decision making of an organisation (Jagalla et al., 2011). At the aggregate level, accrual-based budgeting is expected to provide for better control by parliament, increased compliance and reporting discipline (Mellor, 1996), improve the management of public capital, provide better creditor information, provide information about sustainability of fiscal policies, provide a stronger basis for government accountability, provide a better measure of the effects of government policies on aggregate economic demand and also for intergenerational fairness (Athukorala & Reid, 2003; Jagalla et al., 2011; Robinson, 1998). In other words, accrual-based budgeting could answer questions such as: how are changes in the structure of government spending likely to affect the economy overall, in the short-, medium- and long-term? To what extent has the government delivered on its stated objectives? Are tax reductions sustainable in the long-term? (Athukorala & Reid, 2003).

The public observe the activities of the government and its agencies by viewing budgets, forecasts, appropriations and reports. Nevertheless, governments that have successfully implemented accrual accounting may not use the same bases for budgets, forecasts, appropriations or reports. For example, within government budgets may be prepared on a modified accrual accounting basis, appropriations may be made on a cash basis, while reports may be presented on an accrual basis. These circumstances occur due to different challenges faced by different countries such as a hostile environment towards successful reform, capacity constraints, lack of resources, limited infrastructure and other issues (Athukorala & Reid, 2003). After briefly explaining the concepts of accrual accounting, accrual-based budgeting and reporting, the next section will further investigate the benefits and disadvantages brought about by accrual-based budgeting.

2.2 Accrual-based budgeting - is it truly beneficial?

The term 'accrual budgeting' is defined by many as the extent to which accrual accounting records and measures are used in the budgeting process (Monteiro & Gomes, 2013). Accrual

budgeting entails planning that includes revenues and expenses in the budget of the year in which the underlying economic events are expected to occur (including all projected non-cash transactions), not necessarily in the year in which the related cash is expected to be received or paid, thus providing full resource implications on planned activities (Khan & Mayes, 2009).

Accrual-based budgeting is a type of budgeting which plans, controls and measures public expenditure in terms of accrual accounting (Likierman, 2000; Robinson, 2009). A transaction is accounted in the time period when activity causing the transaction takes place. The examples of such events are depreciation, provisions, account payable, arrears, non-monetary nature expenses, revaluation, contingencies, pension entitlements, financial instruments (Khan, 2013). In contrast, cash-based budgeting is an approach where a government would recognise transactions when the cash is received or paid out, which is often different than when the event actually happens. This is the current practice among public sector agencies, departments and organisations in Malaysia.

In the private sector, budgets are targets rather than plans, in the sense that budgets reflect that which the organisation hopes to achieve. Accrual budgeting acts as a decision tool for managers and as a way to measure results (Barton, 2005b; Likierman, 2000; Monteiro & Gomes, 2013; Robinson, 2009; Salinas, 2002; Van der Hoek, 2005). This type of budgeting could improve public sector financial management and performance while at the same time enhancing transparency and accountability (Salinas, 2002). Moreover, accrual-based budgeting moves away from the focus on limited indicators of fiscal policy toward multiple indicators (e.g. operating balance, cash surplus/deficit and net worth), which allows flexibility to use indicators that are relevant (Khan, 2013). The move to accrual-based budgeting effectively changes the role of budgeting from public expenditure authorisation and a financial control tool to a planning and management tool (Monteiro & Gomes, 2013). The International Monetary Fund also considers the accrual basis superior and more comprehensive because all resource inflows and outflows are recorded, including internal transactions, in-kind transactions and other economic flows, which eventually allow the integration of flows with changes in the statement of financial position (Athukorala & Reid, 2003). In fact, accrual budgeting is considered as being among the most prominent reforms on the budget agenda (Schick, 2007).

It has been suggested that the moving of financial reporting to accruals has increased transparency regarding cost of public services (e.g. pension cost, loans and guarantee programs, heritage assets, military assets, infrastructure assets) and improving information on costs and liabilities for decision making (Department of Treasury and Finance, 2003; Khan, 2013; Monteiro & Gomes, 2013; OECD/IFAC, 2017). Increased transparency, on the other hand, will improve public spending and accountability of executive government (Athukorala & Reid, 2003; Department of Treasury and Finance, 2003; Monteiro & Gomes, 2013). More complete estimates could be made by implementing accrual-based budgeting. Future contingencies, which have not been accounted for by cash budgeting will be accounted for in accrual-based budgeting (Blondal, 2004; Monteiro & Gomes, 2013).

Accrual-based budgeting corresponds with the GAAP used in financial reporting, thereby allowing comparison of budget and actual information prepared on a consistent basis (Monteiro & Gomes, 2013). In addition, accrual-based budgeting is said to be more comparable, consistent and offer more accurate comparisons with other governments because the practice is becoming standard throughout the public sector worldwide (Athukorala & Reid, 2003; Nunavut Department of Finance, 2007; Perrin, 2020). Generation of information on the same basis as accounting information will bring about consistency between budgeting and reporting (Blondal, 2004; Khan, 2013).

In Tasmania, the Department of Treasury and Finance (2003) has provided an Accrual Budget Framework and highlighted a number of advantages of accrual-based budgeting for the government, parliament and community, and agencies, e.g., a more effective basis for undertaking comparisons, establishing trends and identifying performance benchmarks. This indicates that accrual-based budgeting would be more comprehensive (Athukorala & Reid, 2003).

Accrual-based budgeting also leads to better management of resources such as capital investment and better management of liquidity (debtors, creditors and stocks). Unneeded assets will be disposed and investment will be carefully thought of before the acquisition is being made because such investment leads to increase in depreciation. Moreover, a government might need to review its decisions with caution when making commitments, which could have a significant impact in the future but an ineffective impact in the current year. In this way, the potential cost of long-term commitments could be determined and measured (Robinson, 2009; Salinas, 2002). Furthermore, allocation of expenditure would be improved with the maintenance of public assets. Accordingly, in accrual-based budgeting, the long-term consequences of current decisions would be highlighted and, in turn, would provide financial information on the sustainability of fiscal policies (Athukorala & Reid, 2003; Blondal, 2004). In short, accrual-based budgeting promotes better choices pertaining to expenditure priorities (Robinson, 2009). More importantly, accrual-based budgeting could reduce opportunities for fraud and corruption (Athukorala & Reid, 2003).

Despite the highlighted advantages of accrual-based budgeting, there seems to be scepticism among its opponents. Primarily, there are suggestions that accrual-based budgeting would increase the budget complexity process. This situation would reduce the understanding of Parliament, politicians, civil servants and society at large regarding the concept of accrual-based budgeting. Accrual-based budgeting involves accounting estimates and technical complexity in a budget and therefore creates uncertainty. Accrual-based budgeting is said to be less objective and difficult to understand due to the technical nature of accruals. Instead of making the budget more transparent, detractors argue that the process of budgeting becomes less transparent and less comprehensible. The transaction process of accrual-based budgeting would involve restructuring of current reporting and budgeting, which could remain in place for considerable time. Connolly and Hyndman (2006), in the case of the Northern Ireland Department, noted that the management and employees of the department found

accrual-based resource accounting too complicated to understand. This situation rendered the benefits of accrual accounting to a limited level. This issue of complexity cannot be viewed lightly because it is the main factor why Germany and Sweden decided not to adopt accrual accounting (Blondal, 2004; Khan, 2013; Monteiro & Gomes, 2013).

Many scholars argue that there would be an increase in costs and capacity requirements. External consultants may have to be brought in, which would result in high costs (Athukorala & Reid, 2003; Khan, 2013). There would also have to be a substantial increase in training, sophisticated IT facilities and system upgrade costs. A register of government assets would have to be set up and assets evaluated (Blondal, 2004; Khan, 2013). New recruitment of staff, particularly accounting staff, with the technical know-how would need to be hired to train the Ministry of Finance, other ministries and politicians for the new system. Accountants and financial managers would have to be upskilled.

Due to uncertainty and inherent complexity in accrual-based budgeting, there are opportunities for manipulation in capitalising expenses, application of depreciation, valuation, revaluation, etc (Blondal, 2004; Khan, 2013). For instance, under accrual-based budgeting, fiscal estimates and assumptions about interest rates or tax arrears, other noncash items, discount rates, capitalisation of expenses, revaluation of assets could be adjusted and changed. Manipulation of accrual budgets is also harder to detect (Schick, 2007).

2.3 Implementation and challenges of accrual-based budgeting

Accrual budgeting is a recent development for the majority of countries that have implemented accrual accounting. A general public sector reform trend in Malaysia has seen the government need to adopt aspects of accrual accounting as the basis for its budgeting and reporting. Many practitioners and academics suggest that there are many advantages to accrual-based budgeting. In fact, many countries, particularly developed ones (New Zealand, Australia, Canada and the United States), have implemented accrual-based budgeting (OECD/IFAC, 2017).

In principle, accrual accounting has been fully implemented by the federal government since 1st January 2015, using the accrual-based IPSAS as standard in financial reporting (Azmi & Mohamed, 2014). However, the sole implementation of accrual accounting without the support of accrual budgeting for appropriation of budgetary revenue and expenses could limit the capacity of financial statements as decision-making tools and result in their usefulness solely for bureaucratic purpose (Monteiro & Gomes, 2013).

New Zealand was the first country to fully implement accrual budgeting and accounting simultaneously in government in 1995 (Van der Hoek, 2005). According to Athukorala and Reid, (2003) and Blondal (2004), by having both reforms in accounting and budgeting, the overall reforms improved sustainability of fiscal control, efficiency, allocation of expenditure with maintenance of public assets (Monteiro & Gomes, 2013).

Despite this, there are challenges in the form of resistance. For countries that have attempted to implement accrual-based budgeting, it was found that resistance from many has restricted their efforts to implement budgetary reform. Abdul Rashid, Sambasivan and Abdul Rahman (2004) have discovered that when information about a specific change is not communicated well, employees and managers may exhibit resistance or even become confrontational. Thus, there is a need to foster a cultural change among public servants from the focus on cash-based information to accrual-based information (Monteiro & Gomes, 2013). In fact, the environment in developing countries is known to be more hostile to successful reform when compared to developed countries due to constrained resources, inadequate skills and lack of reserves available should they encounter surprises and difficulties during their implementation (Athukorala & Reid, 2003). Resistance to change is another challenge to accrual-based budgeting implementation due to lack of cooperation and coordination between departments and agencies. Moreover, the workload of accounting staff and budget providers would increase and need to be carefully and efficiently managed as a working team. Resistance to change may also prevent implementation, especially among senior staff who may be set in their ways. Previous studies have indicated that some of the motivators of resistance to change include institutional power, ontological insecurity, trust, inertia, lack of knowledge, acceptance of routines and loose coupling (Angonese & Lavarda, 2014). Thus, management must understand the factors that may influence the success of accrual-based budgeting implementation in the future.

Before deciding on a move to accrual-based budgeting, governments should perform systematic analysis of the realities in their countries and make necessary changes. Among the prerequisites of successful implementation of accrual-based budgeting is strong political support, a good cash-based system and a phased approach towards implementation of accrual-based budgeting (Khan, 2013).

Athukorala (2003) highlighted various lessons from certain countries' implementation of accrual-based budgeting, among which include quality assurance, communication, accounting personnel, financial management information systems, information quality and timeliness, guidance and accounting policies, and consistent budget and reporting bases.

A phased approach to implementation would enable the move to accrual-based budgeting to run smoother. The first step of the approach is to improve capacity, infrastructure (including the system) and the institutional structure. It is not at all possible to solely adopt the private sector approach in implementing accrual-based budgeting within the public sector. Based on past experience, developed countries with sufficient skills were able to implement accrual-based budgeting within two to five years, however countries with constrained resources might need a longer time frame in order to adapt (Khan, 2013).

It is also crucial that accrual-based budgeting should have political support at the executive and legislative levels. This support should be backed up with a carefully laid-out plan such as change management and a communication programme. The framework and format of the

budget must be surrendered beforehand and should be communicated to the legislature and agencies before being adapted. Apart from political support, sound cash budgeting with a strong budgeting and accrual accounting process, and reliability of estimation are considered to be prerequisites of successful implementation of accrual-based budgeting (Khan, 2013).

In Malaysia, the International Public Sector Accounting Standards Board (IPSASB) has identified four main focal areas in order to ensure success in the implementation of accrual accounting, namely policies and standards, laws and regulations, process and technology and human resources. The scope of area includes data collection for assets and liabilities, preparation of an accrual accounting manual, a proposed and implemented change management plan, and implementation of data collection training and accrual accounting manual training (Mahadi, Noordin, Mail, & Sariman, 2014). Therefore, it is expected for accrual-based budgeting that the prerequisites for successful implementation are somewhat similar. To prepare employees for the change, intensive training must be provided to ensure organisations have employees equipped with advanced skills and strong technical capability. Not only must new staff be hired, but existing staff must be upskilled with proper knowledge and techniques. In the Malaysian public sector case, Nik Wan (2005) has indicated that the government needs to provide training for staff to ensure they are competent with the accrual-based accounting system. They need to keep abreast with knowledge and skills in handling the system. In addition, senior staff have also faced difficulty in using computers with this new system. Nik Wan (2005) has also argued that accountants in the government sector were not recognised as having the expertise or as specialists. Therefore, an allocation of funds is needed to organise training programmes.

An IT system would also be one of the major factors that could ensure the success of accrual-based budgeting implementation. The system would require substantial resources to integrate financial management with the accrual-based budgeting system. Other influential factors to successful accrual-based budgeting implementation are quality assurance, communication and early issuance of guidance and accounting policies. Last but not least, national professional accounting organisations, such as the Accountant General's Department of Malaysia, National Audit Department of Malaysia and Malaysian Institute of Accountants should be able to facilitate the smooth transition (Athukorala & Reid, 2003; Blondal, 2004; Khan, 2013; OECD/IFAC, 2017). In fact, similar to accrual accounting (Mahadi et al., 2014), the journey towards accrual-based budgeting is expected to be challenging whereby commitment, full support and cooperation from all parties involved are needed to make the implementation successful.

3.0 Research Method

This study uses the qualitative research approach to meet its objectives, which are to examine the awareness of budget preparers on accrual-based budgeting in the Malaysian public sector and their perception of the challenges regarding the implementation. Budget preparers in the public sector are the main respondents since they are the main key players to ensure

that a budget has been properly prepared. Data collections are based on in-depth interviews. The rationale for applying the multi-case study approach is to be able to gain beneficial and holistic material to be used as a comparison with previous studies (Sharma, Lawrence, & Lowe, 2010). Face-to-face and semi-structured interviews have been conducted with six (6) budget preparers that have been rigorously screened and selected previously. All possess between 6 to 15 years experience in their respective fields. Before the analysis could be performed, the verbatim transcription was obtained for all interview sessions by employing Computer Assisted Qualitative Design Analysis Software (CAQDAS), namely Atlas.ti version 8.0. The software was used to facilitate the process of transcribing interviews and data coding. The respondents were coded based on their group type and position so that the confidentiality of the data would be ensured. All interviewees remained nameless to ensure research participant anonymity.

Table 1 below presents a list of the respondents and their positions.

Table 1: Details of Interviewees

Code	Interviewee	Position
Interviewee No. 1	Audit Officer	Assistant Audit Director
Interviewee No. 2	Chief Executive Officer	Chief Executive Officer of a Government Foundation
Interviewee No. 3	Finance Officer A	Assistant State Finance Officer
Interviewee No. 4	Finance Officer B	Assistant State Treasurer
Interviewee No. 5	Finance Officer C	Senior Assistant State Finance Officer
Interviewee No. 6	Finance Officer D	Finance Officer

4.0 Findings and Discussion

Research Question 1: Are budget preparers aware of accrual-based budgeting? What are factors that could influence awareness of accrual-based budgeting?

From the interview with the Chief Executive Officer (CEO), it is solely budget preparers involved in accounting who are aware of the accrual-based budget concept, unlike other employees or staff who possess no hands-on experience in accounting. According to the CEO:

Knowledge is very important. Normally, they are not aware because they have insufficient knowledge. They don't know how to implement it. It would be a big headache for them. So first and foremost, we need to provide them with the knowledge, especially budget preparers.

This view is shared by Finance Officer C:

I don't think there is enough knowledge or understanding among our staff (regarding accrual-based budgeting). We as budget preparers are familiar with

the concept because we have the basic knowledge in accounting. Specifically, we learnt about it in during our studies. We also get the opportunity to put this knowledge into practice, so it is easier for us to master the concept.

Although budget preparers are aware of accrual-based budgeting, they still have a lack of understanding in relation to the concept, including upper management and heads of departments who are not aware of such a concept. Management should provide more initiatives to draw management and staff towards understanding the concept of accrual-based budgeting (Yusof & Jaafar, 2018). Similar to accrual accounting, accrual-based budgeting also faces a lack of management support. A top-down approach is anticipated to ensure the successful implementation of accrual-based budgeting. As suggested by the CEO:

The source of managerial power. This factor plays a crucial role. Formal instruction from upper management is important for budget preparers and employees. When there is no enforcement, they will give plenty of excuses for not doing so (implementing accrual-based budgeting). I think numerous awareness campaigns would have no effect if there is no enforcement. When upper management enforces budgetary reform, then by hook or by crook they must carry it out. To me, enforcement is another form of an awareness campaign.

In the same manner as accrual accounting (Mahadi et al., 2014), the journey towards accrual-based budgeting is also expected to be challenging, whereby one hundred per cent support would be required for accrual-based budgeting to become a reality.

In the implementation process of accrual accounting, Finance Officer A recognised that there is a campaign, but it is still insufficient. In the case of accrual-based budgeting, if it is to be implemented a holistic campaign and promotion covering the whole organisation must be actively put up on various media platforms.

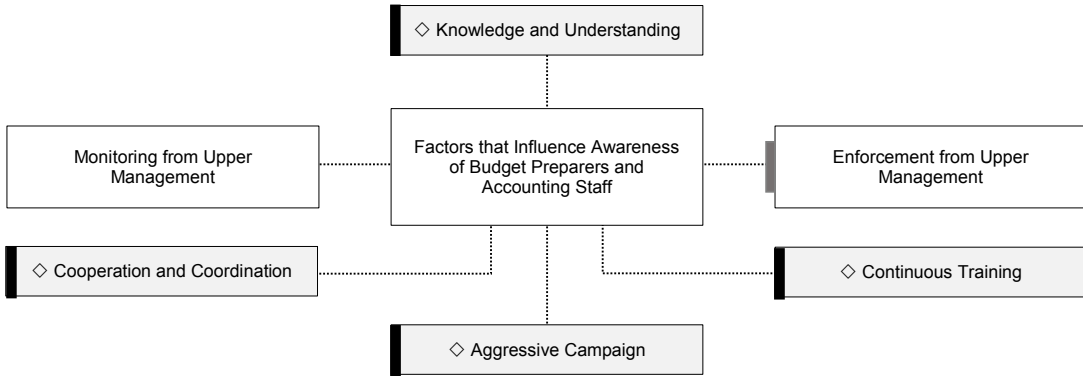
I think it should be done aggressively. Not only aimed at budget preparers and accounting staff, but also every member of the entire organisation. At the very least, them should all have a basic knowledge (regarding accrual-based budgeting). Of course, we should focus on budget preparers, but we must not exclude non-accounting staff in the campaign.

Finance Officer A added that training could also increase awareness of civil servants (Athukorala & Reid, 2003; Blondal, 2004; Khan, 2013; OECD/IFAC, 2017).

Of course, some of them (employees) will complaint because of the continuous training. Afterwards, when the system is implemented, they will understand the benefit of it. In fact, it is difficult to acquire new knowledge and skills. That is why we need a great deal of training and promotion.

Our interview results in relation to factors influencing awareness of accrual-based budgeting are illustrated in Diagram 1 below.

Diagram 1: Factors Influencing Awareness of Accrual-based Budgeting



Research Question 2: What are the challenges to be faced by the Malaysian public sector in the implementation of accrual-based budgeting?

4.1 Understanding

Our findings indicate inconsistencies in understanding about the objectives and importance of accrual budgeting between upper management and personnel in charge of preparation of annual budgets. Such inconsistencies lead to lack of motivation by upper management and budget preparers to spur the change and provide clear instructions to subordinates. This situation has the potential to retard organisational commitment to execute budgetary reforms and the momentum to produce high quality accrual information. Having a common understanding about the nature of accrual budgeting is vital in order to shape the transition and gain the necessary cooperation and sense of ownership within a public sector organisation (Mahadi et al., 2014). The need to comprehend the substance about accrual budgeting is emphasised by Finance Officer C:

I think the most important thing is understanding (of accrual-based budgeting). Understanding of the concept is the first step before we are able to develop the skills. Skills will be developed later at the implementation stage. Before that, they must understand it first.

Moreover, this study indicates the absence of sufficient technical expertise with regard to accrual budgeting and budgetary documentation guidelines to support implementation during the transition phase, in addition to the need for an integrated government IT system, which is currently considered to be obsolete and necessary to be upgraded. Production of a budgetary user manual accompanied by investment in well-functioning IT systems are essential to guarantee more reliable internal management information, proper human resource training

and recruitment, more efficient management of government assets, stricter controls over expenditure arrears and financial oversight of extra-budgetary entities (Athukorala & Reid, 2003; Blondal, 2004; Khan, 2013; OECD/IFAC, 2017). A further suggestion was made by Finance Officer C when she highlighted the need for a publicly accessible channel to expedite the process:

So if we want to implement the budget (accrual), we need to go all out in order to raise awareness at least two years before we implement it. In the future, we should develop a website dedicated to providing information (regarding accrual-based budgeting).

4.2 Cost increment

Overall, our interviews have revealed that implementation of accrual-based budgeting will increase cost, which may be divided into two factors: system and human factor. The increase in costs is due to the necessity of producing the new accounting system, such as equipment and software prior to implementation, and also to establish sustainable support for system operations. Previous studies indicate that building, modification and maintenance of a new accounting system and improving the support system is very important prior to the implementation of accrual-based budgeting (Athukorala & Reid, 2003; Khan, 2013; Mahadi et al., 2014).

Human factor, on the other hand, may be further divided into two sub-factors: external and internal. External refers to the consultants or training providers who advise the government on the implementation of accrual-based budgeting. Finance Officer C provided her opinion regarding cost:

I think that we the state government will incur unexpected costs (when implementing accrual-based budgeting). For example, we will have to appoint consultants such as architects, surveyors, whose professional fees are somewhat high.

The CEO agreed:

It will incur substantial costs. For example, in the case of transition from cash basis to accrual-based accounting in the MPSAS implementation, we will have to spend a great deal on training purposes in order that staff understand the accrual concept.

Internal human factor refers to budget preparers and accounting employees that need training to prepare themselves with the knowledge and skills of accrual-based budgeting. A systematic training module with real life examples should be developed because accounting employees come from different educational backgrounds and some of them lack knowledge in accounting.

According to Finance Officer B, most employees would need sufficient in-house training, seminars and workshops to enhance their understanding and skills during the implementation of accrual-based budgeting:

Knowledge and skills capacity for existing staff are not sufficient to implement accrual-based budgeting. Moreover, this type of budget (accrual basis) is more towards estimation, so they can come up with an appropriate estimation. So, there's a need for training.

Training on the accrual-based mode should be conducted continuously for budget preparers and accounting staff, as well as non-accounting support staff (Blondal, 2004; Khan, 2013). Previous studies indicate that without proper training and sufficient time, accounting employees would not be able to cope with the new accounting system (Connolly & Hyndman, 2006; Irvine, 2011).

4.3 Change

The CEO accordingly noted that resistance to change would be another challenge to accrual-based budgeting implementation due to a lack of cooperation and coordination between departments and agencies:

If there is no enforcement (from upper management), there will be no progress in the transition phase. Plus, there will be some problems in term of coordination among departments, because not all departments will implement it (accrual-based budgeting) simultaneously. The challenge is in terms of coordination.

Finance Officer C agreed, adding:

There would be a blame game for sure. For example, if we wanted to evaluate a building built by the Public Works Department on land owned by the District Office, it would create conflict due to a lack of cooperation and coordination among agencies.

In addition, the workload of accounting staff and budget providers would increase and have to be carefully and efficiently managed, as stated by both the CEO and Finance Officer C:

I think our staff would have to do OT (overtime). They would have to allocate additional hours after office hours to familiarise themselves with the new system. Therefore, there would be an increase in their workload.

Resistance to change may hamper the implementation, especially among senior staff as they may be set in their ways with the old system. The Audit Officer expressed that:

The transition (from cash based budgeting to accrual-based budgeting) will be difficult for the government sector. I believe there will be resistance to change because most of the accountants and accounting units (in the government sector) are already familiar with the cash basis method, which is easier to understand, especially for reporting and explaining the contents of reports to upper management. So for them to change to accrual-based budgeting voluntarily is not possible. Surely they will be reluctant.

Finance Officer A agreed:

It will be a struggle to change accounting concepts that have been in use for years; in my case 15 years. I think it would be easier for younger colleagues to adapt to the new system. Of course, there will be conflict. It will be hard for us senior staff to let go of the old concepts and replace them with a new one (accrual basis).

Finance Officer C added:

Of course, there will be resistance. Especially involving new changes. We (budget preparers) will be somewhat reluctant. Even now, if we want to change the daily work routine of staff, such as adding a new job scope, it is painfully difficult. I think that would also be the case if we were to implement accrual (based budgeting).

The findings are in line with previous studies that indicate some of the motivators of resistance to change include institutional power, ontological insecurity, trust, inertia, lack of knowledge, acceptance of routines and loose coupling (Angonese & Lavarda, 2014). Thus management must understand the factors (including change) that may influence the success of accrual-based budgeting implementation in the future.

4.4 Information and training

The process of collecting data in order to prepare the estimated budget is complicated, as because the documentation is not complete and not updated. Thus, the objective of financial reporting/budgeting issued by accountants/preparers to provide useful information may not be achieved. Budget preparers have to make their own adjustments to recognise budget information that better suits their objectives (Madah Marzuki, Abdul Rahman, Marzuki, Ramli & Wan Abdullah, 2021).

Finance Officer C claimed:

We would have to collect data such as details of land ownership, which is a set of documentation consisting of 10 individual documents. Could you imagine

the process we have to go through to cover all our (state government) assets especially real estate.

Finance Officer A stated that information regarding accrual-based budgeting is voluminous.

4.5 Training

Accountants need detailed planning to train staff. When we mentioned this to the interviewees, most of them agreed. Finance Officer A highlighted that:

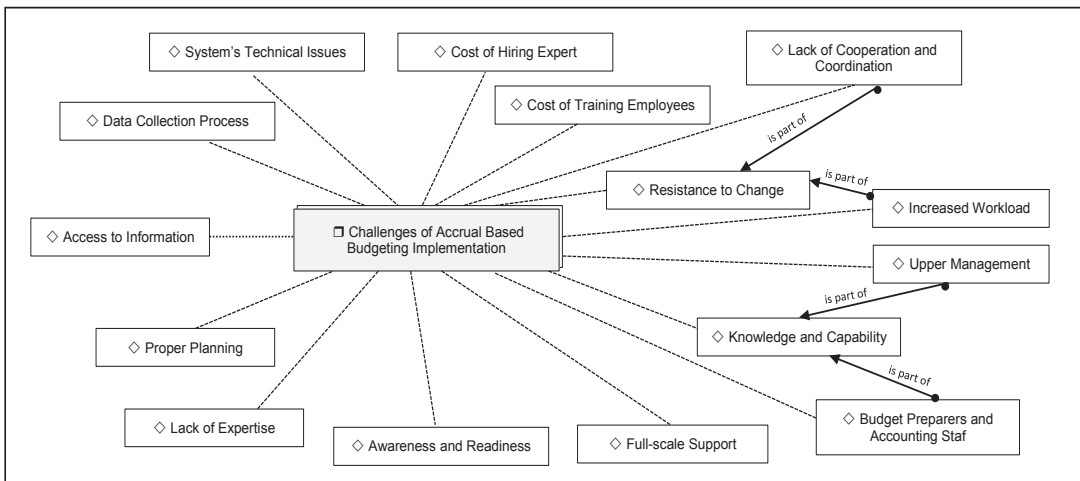
If we want to implement budget (accrual), we need to go all out in order to raise awareness at least two years before we implement it. In the future, we should develop a website dedicated to providing information (regarding accrual-based budgeting).

This was supported by Finance Officer B who expressed the following:

Let say we want to go live in April. Therefore, two years before we go live, we have to plan the transition properly. When to hold a workshop, what kind of training, what topic we want to discuss and so on.

According to Blondal (2004) and Khan (2013), providing continuous training on accrual-based budgeting is not only vital for budget preparers and accounting staff, but also for non-accounting support staff at departmental level. Our interview results in relation to the challenges in implementing accrual-based budgeting are illustrated in Diagram 2 below.

Diagram 2: Challenges in Implementing Accrual-based Budgeting



5.0 Concluding Comments

Accountability is considered to be the primary motivation for governments to shift to accrual budgeting as it is believed that accrual-based budgeting, together with accrual accounting, will improve accountability. This paper has discussed the views of budget preparers and attempted to shed light on the awareness and many challenges surrounding accrual-based budgeting implementation.

What clearly emerges from the interviews is the consensus of views among the budgeting community of the awareness of accrual budgeting. Budget preparers, particularly accountants, are aware of the concept but this is not the case with other employees who do not have hands-on practice in accounting. The interviews have also revealed that knowledge and understanding, upper management enforcement and aggressive promotion is important in determining the awareness of accrual budgeting. An examination of implementation challenges further reveals that understanding, increase in costs, resistance to change, information and training are major concerns in implementing accrual-based budgeting. The results are very similar to similar experiences in other parts of the world.

This survey of Malaysian public sector budget preparers has revealed that although the current budgeting reporting system is generally felt to have been able to meet its main objectives, there is also a clearly felt need for improvements, including a move to accrual-based budgeting. Such a move would require a new recruitment of staff, particularly accounting staff, with the technical know-how to train and advise policymakers, such as the Ministry of Finance, other ministries, departments, agencies and politicians, for the new system. Accountants and financial managers would be required to be upskilled. Given that costs are likely to be significant, it would seem reasonable to extend the scope of this survey and seek a broad range of authoritative opinions on the likely benefits as much as possible.

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Control of Corruption, Political Stability, Foreign Investors, Government Expenditure and Economic Growth Trends in the Southeast Asian Region

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<https://doi.org/10.58458/ipnj.v11.01.07.0073>

Received: 20 May 2021

Reviewed: 28 June 2021

Accepted: 08 November 2021

Abstract

Purpose: Corruption and lack of political stability had been affecting economic growth, especially after the 1997 Asian Financial Crisis, with all Asian regions facing an economic downturn. This study aims to examine the influence of the control of corruption, political stability, foreign investors, and government expenditure on economic growth in seven Southeast Asian countries from 1996 to 2018.

Design/Methodology/Approach: This study is undertaken fundamentally within the context of the theoretical arguments of the basic Solow Model and the extended Solow Model which incorporates the element of corruption. To ascertain the outcome of the variables, the researcher employed Panel Data Analysis, comprising Pool Ordinary Least Square Method (POLS), Fixed Effects Model (FEM), and Random Effects Model (REM). The Likelihood Test and the Hausman Test were conducted to determine the best models for verifying appropriateness among these models. This study analysed 23 years of data from seven Southeast Asian countries from 1996 to 2018.

Research Limitations: The study was limited to seven Southeast Asian countries. The remaining four countries in Southeast Asia, i.e. Myanmar, Timor-Leste, Cambodia, and Laos were excluded due to non-availability of data.

Findings: The findings revealed that control of corruption and political stability had no significant influence on economic growth in the seven Southeast Asian countries. Foreign investments and government expenditure, on the other hand, have a significant positive relationship with economic growth in those countries.

Practical Implication: Based on the findings, it is recommended that future research would emphasis on subcategories of government expenditures, such as education, agriculture, military, and health. Future researchers may also enhance the number of observations by diversifying the countries studied, while the current study only examined the Southeast Asian region.

Originality/Value: This study adds to the current literature on the knowledge of factors influencing economic growth in the Southeast Asian region.

Keywords: Control of corruption, political stability, foreign investors, government expenditure, economic growth

1.0 Introduction

Economic growth in Southeast Asia was heavily impacted by the 1997 Asian financial crisis, including loss of foreign direct investment (FDI), which strongly influenced the GDP of many of the countries. Consequently, the Southeast Asian economies went through economic reforms and structural changes after the crisis (Hsiao & Hsiao, 2006), by focusing on transparency as it is a driver of economic development, regardless of whether or not an economy was expanding or not (Tiwari & Mutascu, 2011).

Financial crimes have a harmful impact on the economy, security, and social well-being of the people (Okoye & Gbegi, 2013). In fact, corruption remains one of the dominant concerns in modern society (Hakimi & Hamdi, 2017). In the year 2019, Malaysia experienced a critical period when the country's ranking in the freedom from corruption index was almost at its lowest point, i.e. 61 out of 180 countries (Transparency International, 2020) with its level of corruption perception at a low 47 percent, indicating the existence of corruption in Malaysia. While the factors affecting corruption differ from one country to another, no country, however, is immune to corruption (Transparency International, 2020) as evident in the various corruption scandals, not only in developing countries such as Indonesia, Mexico, and the Philippines, but also in developed countries such as Japan and the United States. Such a situation has made corruption a global priority for international organisations such as Transparency International, Global Witness, and the Anti-Corruption International Association (Ghaniy & Hastiadi, 2017).

Corruption can cause changes to political, cultural, and economic structures (Ghaniy & Hastiadi, 2017), especially as democracy and political stability are regarded as crucial factors in most of these studies. In fact, the means of exposing and penalising those who conduct illegal practices are carried through the protection of civil liberties, an effective and open public administration, an operationally responsive judicial system, transparency, and fair elections (Turedi & Altiner, 2016). Therefore, politicians who do not want to risk their position and prestige are obligated to work efficiently without misusing their authority for private gains. For example, Turedi & Altiner (2016) researched 56 countries from 2002 to 2012 and reported

that democracy reduces corruption in countries where the per capita income is \$2,000 or higher, whereas the reverse is true in those countries where the per capita income is less than \$2,000.

Several countries have tried to control corruption. For example, the Malaysian government formed an Anti-Corruption Commission (MACC) to curb fraud cases among the public and organisations; however, the corruption perception index in 2019 with 47 percent indicates that corruption is still rampant. According to Freckleton et al. (2012), about US\$1 trillion are lost each year as a result of corruption, which approximates 5 percent of the world's gross domestic product (GDP). This indicates that corruption is the main crucial obstacles to social and economic development. This could happen also when unscrupulous individuals take improper advantage to increase foreign investment regardless of the country's policies and laws. They may run an underground economy to avoid paying taxes and beating the legitimate market competitors. In certain countries, the public or organisations will try to maximise profits with minimal taxation levels to offer attractive investment opportunities just to gain benefits.

According to Kasasbeh et al. (2018), Jordan had performed several economic systems such as its financial system, investments, and trade liberalisation that had been sustained over the last thirty years as an open economy. However, in the wake of the 2008 financial crisis, political instability in the Middle East had caused foreign investments to drastically decline up to US\$1,880.5 million from 2009 to 2011 and up to US\$1,665.7 million from 2012 to 2015 compared to the first decade of the millennium when Jordan attracted FDI inflows that increased from US\$770.9 million to US\$2,767.1 million from 2000 to 2004. They attributed the declining inflows in Jordan to the rise of corruption since 2008. The decline in FDI inflows and the corruption index in Jordan from 2000 to 2016 exemplifies the strong relationship between the level of corruption and foreign investment.

This study is undertaken fundamentally within the context of the theoretical arguments of the basic Solow Model and the extended Solow Model that incorporated the element of corruption. The aim was to examine whether institutional factors (control of corruption and political stability), and economic factors (foreign investors and government expenditure) might have influenced economic growth in the seven Southeast Asian countries in the study. Secondary data, spanning a period of 23 years, from January 1996 to December 2018, comprising a time series of 161 observations for each variable (Control of Corruption, Political Stability, Foreign Investors, Government Expenditure) were analysed.

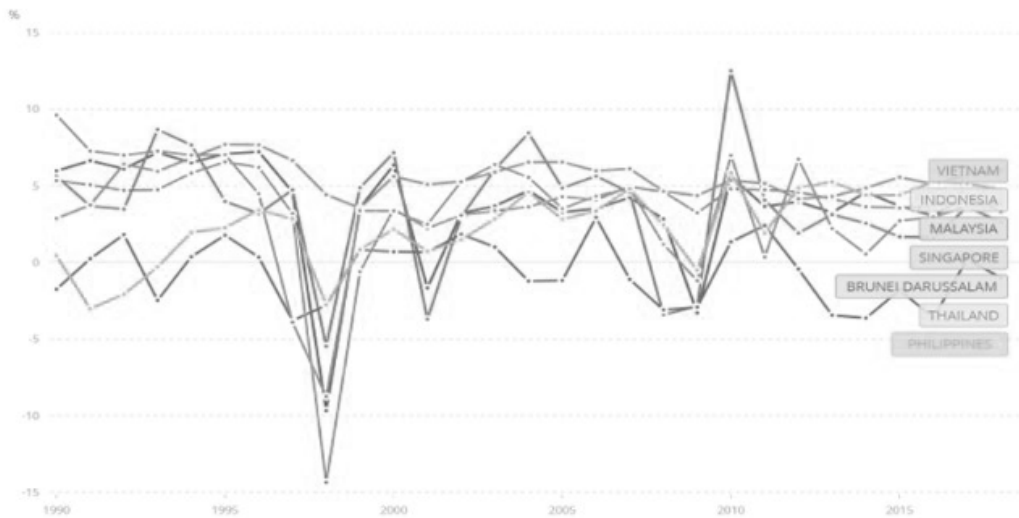
The following sections of the paper are organised as follows: Section 2.0 reviews the literature and hypotheses development, Section 3.0 discusses the research design, Section 4.0 explains the research analysis and provides a discussion of the findings, while Section 5.0 provides the conclusion and highlights the limitations and directions for future research.

2.0 Literature Review and Hypotheses Development

Economic Growth

Back in the 1960s, the Asian economy was known as the Asian Miracle and classified as following a flying geese pattern of development. This is because, during that era, Asia was experiencing a period of strong economic expansion with great development in Japan, followed by the 'Four Asian Tigers': Hong Kong, South Korea, Singapore, and Taiwan (Nakaso, 2015). In the early 1980s, Malaysia and Thailand joined these five nations on the great development path. China also picked up momentum and began recording double-digit growth after entering the World Trade Organisation in the early 2000s to become the driving force of the Asian economy (Nakaso, 2015).

Figure 1: The Trend of Economic Growth in Southeast Asia from the Year 1990 to 2018 [GDP per capita growth (annual %)]



Source: (World Bank, 2020a)

Figure 1 highlights the pattern of economic growth in the seven Southeast Asian countries in the study from 1990 to 2018. It shows that economic growth fluctuated between 1990 and 2015. In 1997, it experienced a huge drop, but the momentum reverted briefly, and then it continued dropping again in 2001. However, the economies rebounded after that, albeit not at the same rate. A period of high growth in the mid-1990s was accompanied by a deep recession which was related to the Asian Currency Crisis, and many Asian economies experienced a huge drop in their GDP as indicated in Figure 1. After the crisis, the Asian economy resumed on a relatively high growth path (Nakaso, 2015).

Control of Corruption and Economic Growth

Corruption is not a new phenomenon; it has existed throughout history even before the birth of recent civilisations (Quazi, 2014). It is, however, significantly crucial to the nation, especially when it involves political instability that affects economic growth. Financial crime occurs in all civilisations and has a huge impact on ethical and social issues due to corruption (Bayar, 2011).

Controlling corruption is a challenging mission because it requires instituting the most suitable and effective systems to combat several types of corruption. Examples of such a system are tightening anti-corruption laws and increasing the penalties to deter individuals from acting corruptly (Graycar & Sidebottom, 2012). In other words, it means the government must manage the reformation of its anti-corruption strategy, which includes increasing the supervision of the judiciary system and the audit system (Liu & Lin, 2012).

A study carried out to investigate the effect of corruption on economic growth in Ghana using the Wald Chi-Square test with lag terms in the independent variables, revealed that when economic growth increased by 1 percent, the control of corruption perception index value increased by 0.287 units (Forson et. al., 2015). Similarly, Abu et al. (2015) examined the effect of corruption on economic development in the Economic Community of West African States (ECOWAS) and they also concluded that corruption negatively influenced the growth of GDP per capita. A recent study by Grundler and Potrafke (2019) conducted in 175 countries from 2012 to 2018 found that corruption had a negative impact on economic growth and caused a significantly high decrease of 17 percent. It would be safe to say that the reverse would also be true, i.e. an increase in the control of corruption perception index would show an increase in economic growth, thereby indicating that corruption can influence economic growth.

Conversely, it has also been argued that corruption negatively affects economic development only in countries with high institutional quality, while the countries with low institutional quality will not experience any impact on economic growth, as suggested in a study on corruption in Indonesia (Ozsahin & Ucler, 2017).

Table 1 presents the corruption perception ranking for the seven countries in Southeast Asia in 2019. From the table, it is obvious that Singapore and Brunei appear to have the lowest level of corruption in Southeast Asia, while Malaysia was perceived to have a high level of corruption in comparison, despite the fact that it performed better than the other countries in the study, i.e., Indonesia, Thailand, the Philippines, and Vietnam. Vietnam was at the bottom of the ranking with the highest level of corruption (Transparency International, 2020).

Table 1: Corruption Perception Index in the Seven Southeast Asian Countries for the Year 2019

No.	Country	CPI
1	Singapore	85
2	Brunei	63
3	Malaysia	47
4	Indonesia	38
5	Thailand	36
6	Philippines	36
7	Vietnam	33

Source: (Transparency International, 2020)

Corruption occurs when power is misused by public officers for private purposes such as when they solicit, accept or extort bribes. Corporate representatives often knowingly manipulate public policies and procedures for competitive advantage and personal advantage through bribery and nepotism, corruption of state assets, or the diversion of state income. In fact, while corruption occurs in many governmental and political institutions, its effects on economic growth may differ from one country to another (Obamuyi & Olayiwola, 2019). According to Bardhan (1997), in order to obtain licenses or government permits to conduct businesses, foreign investors may be solicited to pay extra costs in the form of bribes that would in turn reduce the anticipated profitability of the project. Correspondingly, corruption creates risk because courts will not enforce corruption provisions in contracts. As such, foreign investors tend to avoid investing in highly corrupt countries (Craigwell & Wright, 2011).

As evident in Figure 2, Singapore and Brunei had the highest levels of control of corruption, i.e., the least level of corruption. In 2018, the indicator value for Singapore was at 2.17, the highest for control of corruption, whereas Philippines had the lowest indicator value at -0.54. Unexpectedly, Malaysia scored above the world median even though throughout 2015 to 2017, the Malaysian government was embroiled in the 1 Malaysia Development Fund Bhd (1MDB) corruption scandal, something which would have had the opposite effect in other comparable countries (Jones, 2019).

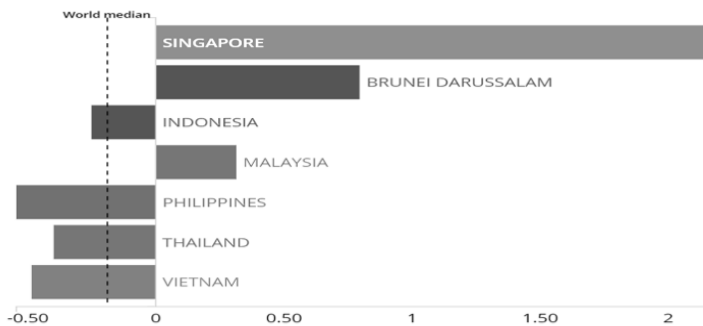
Political Stability and Economic Growth

Abdel-Latif et al. (2018) have suggested that political stability and the quality of the country's institutions and corruption are interdependent, i.e. a higher level of political stability indicates a lower level of corruption (high control of corruption). Political instability is classified as the tendency of a government to collapse due to conflicts among political parties that lead to negative effects on economic performance (Nazeer & Masih, 2017). Ghaniy and Hastiadi (2017) who conducted a study on the relationship between political stability and corruption by using a cross-country data set found a U-shaped relationship between the two variables, i.e., an inefficient government would be more willing to condone corruption. Therefore, an increase

in the acceptance of corruption activity would increase the level of corruption perception and a decline in political stability (Ghaniy & Hastiadi, 2017).

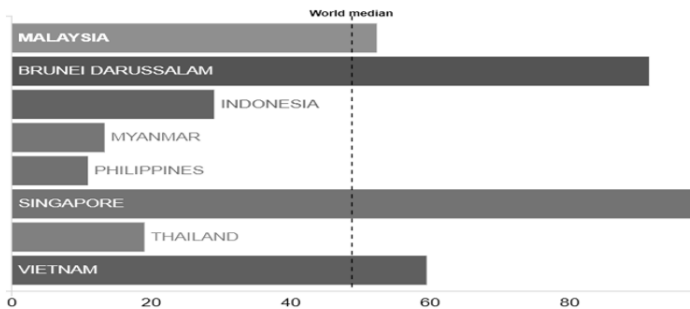
Meyera (2019) reported on the existence of a consistently significant relationship between economic growth and political stability, suggesting that good governance driven by political stability is a key to advancing economic growth. While most researchers reported that an increase in the control of corruption level and political stability can decrease the number of fraud cases, Meyera (2019) postulated that efficient and independent governance with an increase in freedom of expression will lead to a higher level of economic growth as well.

Figure 2: Control of Corruption in the Seven Southeast Asian Countries for the Year 2018



Source: (Worldwide Governance Indicator, 2020)

Figure 3: Political Stability in the Seven Southeast Asian Countries for the Year 2018



Source: (Worldwide Governance Indicator, 2020)

Not surprisingly, like the control of corruption outcomes (see Figure 2), Singapore and Brunei proved to have the highest levels of political stability, while the Philippines had the lowest level, indicating that political stability contributes to a lower level of corruption. Unexpectedly, as illustrated in Figure 3, Vietnam performed well in terms of political stability compared to Malaysia. This is because Malaysia, as mentioned before, was embroiled in the 1MDB scandal, involving the embezzlement and laundering of billions of US dollars from its bank accounts alongside bribery claims, culminating in investigations, not only in Malaysia, but also

in the other countries where the money laundering activities occurred (Jones, 2019).

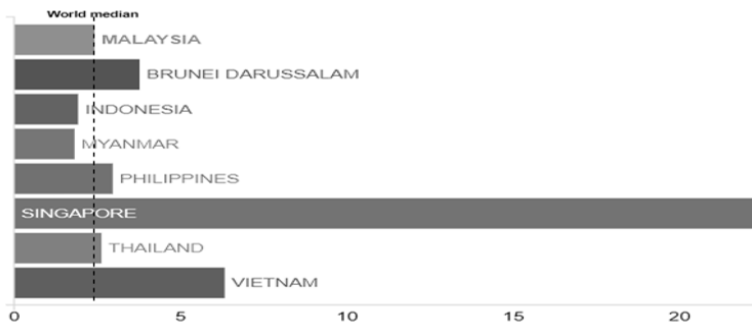
Foreign Investors and Economic Growth

Foreign direct investment (FDI) can be improved through a backward and forward relationship to balance payments, as well as increase the gross national income, help develop the infrastructure, and expand production for trade (I. U. et al., 2015). Asian countries such as China, Hong Kong, Indonesia, Malaysia, Singapore, South Korea, and Taiwan are known as the first and second generation newly developed economies that have experienced rapid economic growth over the past few decades through successful FDI. Success stories like these contribute significantly to the dialogue regarding the transformation thrust in political economy research (Woo & Heo, 2009).

According to Freckleton, Wright, and Craigwell (2012), FDI increased worldwide from US\$55 billion in 1980 to approximately US\$1,200 billion in 2010, showing an approximately 50 percent increase in FDI over 30 years. Evidently, it should have a significant impact on the GDP growth in the host countries. Craigwell and Wright (2011) analysed data from 42 developing countries to estimate the relationship between FDI, corruption, and economic growth. Their findings showed a lower level of corruption with an increase in the impact of FDI on economic growth. Freckleton et al. (2012) reported that foreign investors tend to avoid investing in countries with high levels of corruption.

Ofori, Ato-Mensah, and Jinsheng (2015), in a study of 58 countries, showed that corruption has a significant negative effect on the ratio of FDI to GDP, which is consistent with the view that corruption is harmful to economic growth as foreign investors would avoid investing in countries with a high level of corruption. In other words, corruption has a negative impact on the level of investment and economic growth (Ofori et al., 2015).

Figure 4: Foreign Direct Investment in the Seven Southeast Asian Countries for the Year 2018



Source: (World Bank, 2020b)

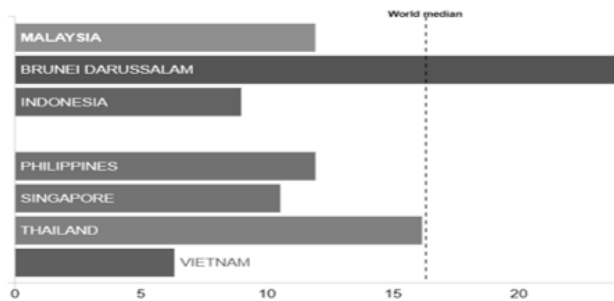
As can be seen in Figure 4, Singapore, one of the most advanced economies in Southeast Asia, was ranked the highest, while, Malaysia was on par with the world median. Generally,

FDI inflows and exports contribute to the growth of an economy, with some countries aggressively offering tax incentives and subsidies to spur their economic growth through FDI (Sultanuzzaman et al., 2018).

Government Expenditure and Economic Growth

According to the Keynesian theory of macroeconomics, government spending stimulates economic growth; so for decades, the scale of government spending, including its impact on the long and short terms of the country's economic development, has been a subject of interest, since it is viewed as an exogenous force that affects aggregate production (Loizides & Vamvoukas, 2005).

Figure 5: Government Expenditure in the Seven Southeast Asian Countries for the Year 2018



Source: (World Bank, 2020c)

As evident in Figure 5, Brunei was obviously ranked the highest among the other countries in terms of government spending as its main source of revenue was from its natural reserves of oil and gas, which was used to help small and medium-sized businesses through public procurement and increasing access to financial services (Arapova, 2018). Meanwhile, Malaysia's expenditure was below that of Thailand, probably due to government budget cuts in 2018.

Government expenditures have different economic effects that can support and promote economic growth (Van & Sudhipongpracha, 2015). This is because the fundamental determinant of public sector development is the expansion of the public and, especially, state activities.

Loizides and Vamvoukas (2005) conducted an empirical analysis on the causal relationship between government expenditure and economic growth in Greece, the United Kingdom, and Ireland. Their findings revealed that government expenditure caused economic growth in all the countries, thus proving that government expenditure increases the overall economic development.

Basic Solow Model and Extended Solow Model

The Basic Solow Model

The basic Solow model starts with a pure belief that the technology did not consist of progression in the development of the economy as the model believes in a closed-economy by using labour (L) and Capital (K). According to Hernandez (2003), the output is a factor of labour and capital when the function of output experiences constant returns to scale and declining returns to particular factors of production as well as having a unitary elasticity of factor-substitution as follows:

$$Y = F(K, L) \tag{1}$$

Where (Y) represents output, (K) capital stock, (L) labour or total employability.

However, since the basic version of the Solow model was developed to predict the growth of the economy in the long term, it focused on the relationship between inputs such as capital, labour, and technology, and output, the dynamic outcome only. It was deemed to be inadequate and it was further modified to factor in population behaviour. As such, the model describes some different ways to deliver output, which can be measured using two different concepts, either disconnected or continuous, in macroeconomics in which these two conditions are applied (Ramanayake, 2019).

The first model equation is based on the function of production that came from equation (1) into a new form as follows:

$$Y(t) = F(K(t), A(t) L(t)) \tag{2}$$

Where (Y) represents output, (K) capital stock, (L) labour or total employability, and (A) effectiveness of the labour or the level of technology which are the important inputs of this model, whereby L and A are specifically believed to expand exogenously, while F assumes as continues function (Ramanayake, 2019).

Shabbir et al. (2016) had explained that the elements of growth and development, i.e. the growth rates of inputs consisting of capital and labour, would impact economic development. At the same time, the factors of production comprising dynamic social and technological changes can decide the total factor productivity (TFP), when the TFP growth evaluates production differences due to technological advances, increases in performance, and all other non-input growth factors. However, Ramanayake (2019) has argued that this model's persistent state of the capital-labour ratio within the economy is rejected in Keynesian policies, as lower levels of unemployment and long-term economic growth will not continue to maintain a constant ratio of capital-labour, just as the matching or inconsistency between the creative exploration of new technology and market conditions that can lead to economic changes.

The Extended Solow Model by Incorporating Corruption

The model was subsequently modified and developed to test whether or not corruption might affect economic performance adversely if policy controls were added to examine whenever a growth-boosting or growth-dropping degree of corruption occurs. Mauro (1996) used the theory to extend the Solow (1956) approach to the growth accounting process, whereby the model's aggregate production function is as follows:

$$Y_{it} = A_{it} F(K_{it}, L_{it}) \quad (3)$$

Where (Y_{it}) is the aggregate output, (A_{it}) the total factor productivity (TFP), (K_{it}) the capital stock, (L_{it}) the number of workers in the country i.e. labour, F assumes as continues function, i denotes time, and period is denoted by t .

However, to empirically evaluate the impact of the indicators of institutional quality, corruption indicators, and other economic growth policy variables, the model has to increase productivity through the overall factor and assess corruption and institutional quality within the model. It was also agreed that government expenditures and corruption may contribute to the determination of the per capita growth and stable growth rates. These variables and GDP lag per capita growth (% annual) affect the quality by which an economy remains constant towards its dynamic equilibrium while influencing the growth rate (Ahmad et al., 2012).

The dynamic function of the model resulting from a lagged dependent variable to be included as follows:

$$\alpha_{it} = n_0 + \sum_{nj} X_{itj} + \sum_{nk} X_{itk} + n_{yi}(t-1) + n_{it} \quad (4)$$

Where,

α_{it} = Total factor productivity

i = Time

t = Period

n = Number of countries

y = Coefficients of lag GDP per capita growth (% annual)

$i(t-1)$ = Beginning of the time and the logarithm of GDP per capita growth (% annual)

X_j = set of j conditioning variables, consists of:

X_1 = Foreign direct investment (gross)

X_2 = Government expenditures (% of GDP)

X_k = set k variables measuring the level of corruption and institutional quality, which consist of:

X_3 = Control corruption index

X_4 = Political stability index

Hypotheses Development

Bohara, Mitchell, and Mittendorff (2004) stated that to prevent and curb corruption from spreading, the government must have an incentive to monitor and control the transaction

costs of corrupt practices to promote trade and investment in a clean way. If the result of corruption control is positive and statistically relevant, it would indicate that its regulation has a positive impact on economic development, but if the result is negative, it would prove that the corruption control is ineffective, resulting in inefficient economic growth (Omoteso & Mobolaji, 2014). As such, the following hypothesis was proposed:

H1: - There is a positive relationship between the control of corruption and economic growth in the seven Southeast Asian countries.

Countries with a higher degree of political stability have higher economic growth. This is because corruption reduces development, and it becomes more harmful with the deterioration in good governance or political stability. Therefore, in line with higher political instability, the impact on the corruption perception index for that country should be negative (Shabbir et al., 2016) and in regions with political stability and high regulatory quality, economic growth performance should trend in a significantly positive direction (Omoteso & Mobolaji, 2014).

Thus, the following hypothesis was proposed:

H2: - There is a positive relationship between political stability and economic growth in the seven Southeast Asian countries.

FDI plays a major role in the development dynamics of developed countries (Quazi, 2014). Zhang (2003) found that FDI inflows from 1992 to 2004 contributed to China's economic growth by boosting productivity and promoting exports and new advanced technology. The empirical field study by Tiwari and Mutascu (2011) of 23 Asian countries from 1986 to 2008, revealed that FDI and exports had boosted economic growth in the Asian region. Additionally, Sothan (2017) found strong evidence on the causal impact of FDI on the economic growth of Cambodia.

Hence, the following hypothesis was proposed:

H3: - There is a positive relationship between FDI and economic growth in the seven Southeast Asian countries.

Additionally, Gupta (2018) revealed a positive correlation between government expenditure and economic growth in Nepal, especially since the expenditure focused on its agricultural, non-agricultural, and industrial and service sectors. Pulok (2012) who conducted a similar study in Bangladesh reported that an increase in government expenditure of 1 percent with a 0.3 percent increase in the GDP. These studies indicate a relationship between government spending and political stability, which is significant to the country's GDP per capita.

As such, the following hypothesis was proposed:

H4: - There is a positive relationship between government expenditures and economic growth in the seven Southeast Asian countries.

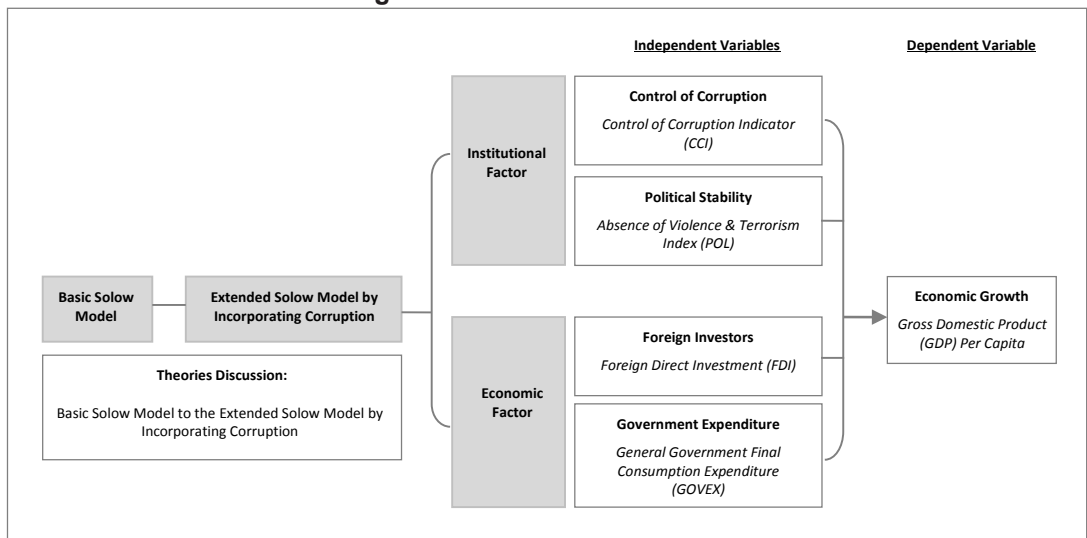
Overall, it can be deduced that good governance, effective government spending, corruption control, and political stability are the requirements for economic growth (Meyera, 2019).

3.0 Research Method

Research Framework

The research framework for this study is based on the theories from the basic Solow Model to the extended Solow Model, which incorporates corruption. This framework was adapted from basic solow model developed by Ahmad, Ullah, and Arfeen (2012). The research framework incorporates the independent variables: the institutional factors, comprising control corruption and political stability, and the economic factors, comprising foreign investors and government expenditures. These factors are the key determinants of the dependent variable: economic growth.

Figure 6: Research Framework



Population and Sample

In this study, the sample population constituted seven (7) out of a total of eleven (11) Southeast Asian countries, since the four (4) countries that were excluded, viz. Myanmar, Timor-Leste, Cambodia, and Laos had limited viable data. Therefore, the study only focused on seven countries, viz., Malaysia, Singapore, Brunei, Indonesia, Vietnam, the Philippines,

and Thailand. The unit of analysis entailed a sample size of one hundred and sixty-one (161), which comprised data from the seven countries over a twenty-three (23) year period from 1996 to 2018.

Dependent and Independent Variables

a) Dependent Variable

Economic Growth

Economic growth in this study was the cumulative percentage growth in Gross Domestic Product (GDP) per capita over the 23-year period. The GDP per capita can be defined as the gross domestic product divided by the mid-year population of the nation. It represents the percentage of annual per capita GDP growth based on a constant local currency (World Bank, 2020a).

b) Independent Variables

Institutional Factors

i. Control of Corruption

The control of corruption indicator in Southeast Asian countries was proxied by the Control of Corruption Indicator (CCI) (Worldwide Governance Indicator, 2020). The estimation of a country's score on the aggregate metric varies from around -2.5 to 2.5 in units of a standard normal distribution. The CCI values were determined by using information extracted from the Worldwide Governance Indicator 2020.

ii. Political Stability

The measurement for political stability includes an absence of Violence or Terrorism. The POL that represents the Political Stability Index extracted from The Global Economy 2020 as the proxy. The test expectations of the possibility of illegality or violence refer to politically motivated violence and terrorism that could destabilise or overthrow the government. The values range from -2.5 (weak) to + 2.5 (strong).

Economic Factors

i. Foreign Investors

The Foreign Investors is proxied by Foreign Direct Investment (FDI). Foreign direct investment is measured by net inflows as a percentage of gross domestic product (GDP). FDI refers to net inflows, according to the value of the inward direct investment made in the reporting economy by foreign investors. Inward Direct Investment, also referred to as a direct investment in the financial economy, involves all exchanged liabilities and resources between resident direct investment companies and direct investors (World Bank, 2020b). The measures of new

investment inflows entail less disinvestment in the reporting economy from foreign investors and are divided by the GDP.

ii. Government Expenditures

The measurement for government expenditures includes the general government final consumption expenditure, which covers all current government expenditures on goods and services (including employee compensation) as a percentage of the GDP. It also covers national defence and security expenditure but excludes military government spending that is part of the construction of state assets (World Bank, 2020c). Table 2 summarises the measurement of the variables.

Table 2: Summary of the Description of the Variables

Variable	Measurement	Prevailing Literature
Dependent Variable: Economic Growth [GDP]	GDP per capita growth (% annual)	World Bank, 2020a
Independent Variable: Control of Corruption [CCI]	Control of Corruption Index. Ranging from approximately (-2.5% to 2.5%).	Worldwide Governance Indicator, 2020
Independent Variable: Political Stability [POL]	Political stability index is an absence of Violence or Terrorism. Ranging from approximately (-2.5%; weak to +2.5%; strong).	Worldwide Governance Indicator, 2020
Independent Variable: Foreign Investors [FDI]	Foreign direct investment net inflows (% of GDP)	World Bank, 2020b
Independent Variable: Government Expenditures [GOVEX]	General government final consumption expenditure (% of GDP)	World Bank, 2020c

Regression Model

The aim of this study was to examine the effect of control of corruption, political stability, foreign investments, and government expenditures on economic growth. As such, the model consisted of one dependent variable, i.e., economic growth in Southeast Asia (Y), and four independent variables, i.e., Control of Corruption (CCI), Political Stability (POL), Foreign Investors (FDI), and Government Expenditures (GOVEX). These variables were denoted by X1, X2, X3, and X4, respectively, as shown in the equation below.

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \epsilon_i$$

Where:

Y (Dependent Variable)= Economic Growth (GDP)

X1 to X4 = Independent Variables

β_0 = intercept of the slopes

β_1 = coefficient of X1 (CCI)

ϵ_i = stochastic error term

β_2 = coefficient of X2 (POL)

it = time series

β_3 = coefficient of X3 (FDI)

β_4 = coefficient of X4 (GOVEX)

4.0 Data Analysis and Discussion of Results

Descriptive Analysis

Descriptive Statistics of the Control of Corruption, Political Stability, Foreign Investors, Government Expenditures, and Economic Growth for Seven Countries in Southeast Asia

Table 3 (below) presents the descriptive statistics analysis for the seven Southeast Asian countries in the study.

Table 3: Descriptive Statistics of Control of Corruption, Political Stability, Foreign Investors, Government Expenditures, and Economic Growth for Seven Countries in Southeast Asia

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
GDP (%)	2.775104	3.555440	3.480437	-14.35055	12.51431
CCI (%)	0.447024	0.416667	0.157484	0.166667	0.833333
POL (%)	0.761648	0.777462	0.122166	0.492424	0.954545
FDI (%)	5.010717	3.166133	6.119185	-2.757440	28.01695
GOVEX (%)	12.22263	10.84043	5.503173	5.465202	29.86726

Notes: GDP = Gross Domestic Product per Capita Growth (% Annual); CCI = Control Corruption Index (%); POL = Political Stability Index (%); FDI = Foreign Direct Investment Net Inflows (% of GDP); GOVEX= General Government Final Consumption Expenditure (% of GDP)

As far as the GDP per capita growth is concerned, the mean is recorded at 2.775%, followed by the median at 3.556%, with a standard deviation of 3.480%. The minimum is -14.350% while the maximum is 12.514%. These results indicate huge differences in terms of GDP per capita as a proxy variable of economic growth in the seven Southeast Asian countries. This could be due to the fact that the majority of the selected countries were considered developing economies, with their situation being made worse by the 1997 Asian financial crisis, while some of the other countries had undergone economic reform that resulted in volatile trends of growth (Hsiao & Hsiao, 2006).

With reference to Table 3, the mean and maximum values for Control of Corruption (CCI) stand at 0.447% and 0.833% respectively. The median is approximately 0.416% whilst the minimum value is 0.166% and the standard deviation is 0.157%. These results indicate an output gap in terms of the control of corruption in the seven countries as the highest reported value is 0.833%, with the lowest at 0.166%. This is because many countries in Southeast Asia were grappling with corruption issues, the outcomes, successful or otherwise, depended on the reasons and the actions taken by the governments to combat corruption.

The analysis also illustrates that the average and maximum values of Political Stability (POL) are equal to 0.761% which is within the -2.5%; weak to +2.5%; strong category and 0.954% respectively. The minimum value is 0.492% and the standard deviation is 0.122%. This result highlights the possibility that government reforms had influenced the standard of governance, thereby promoting political stability (Abeyasinghe, 2004).

The average of Foreign Direct Investment (FDI) is equal to 5.01%; the maximum and minimum are 28.016% and -2.757% respectively, while the median is 3.166% and the standard deviation is 6.119%. FDI is the proxy variable of foreign investments in the seven countries. The big difference in results indicates that the 1997 Asian Financial Crisis had a tremendous negative impact on the FDI inflows into Southeast Asia. A crisis occurred in the information and technology industry in the early 2000s, which contributed to a temporary decrease in FDI inflows, which, however, started to grow again in 2003. This was followed by the global financial crisis crash that resulted in a new decrease in the FDI inflows between 2008 and 2009, but they rebounded again in Southeast Asia (Sjoholm, 2013).

Descriptive Statistical Analysis for Economic Growth

Table 4 shows a summary of the statistics of GDP per capita as the proxy variable of economic growth in the selected Southeast Asian region.

Table 4: Summary of Statistics for Economic Growth from the Year 1996 to 2018

	Malaysia	Singapore	Brunei	Indonesia	Thailand	Vietnam	Philippines
Mean (%)	2.96	3.08	-0.77	2.98	2.65	5.43	3.09
Std. Deviation (%)	3.52	4.07	2.08	3.98	3.56	0.96	2.13
Minimum (%)	-9.67	-5.46	-3.79	-14.35	-8.74	3.55	-2.76
Maximum (%)	7.23	12.51	2.95	6.22	6.99	7.68	5.85

Notes: GDP = Gross Domestic Product Per capita Growth (% Annual)

The overall average values for Malaysia, Singapore, Brunei, Indonesia, Thailand, Vietnam, and the Philippines are 2.96%, 3.08%, -0.77%, 2.98%, 2.65%, 5.43%, and 3.09% respectively. This indicates that Vietnam and Brunei had the highest and lowest mean GDP per capita level of 5.43% and -0.77% respectively. As per Table 4, Malaysia, Singapore, Indonesia and Thailand reflect higher standard deviation, which is within 3.52% to 4.07%. This indicates that the GDP for the four countries was spread out highly between the period 1996 to 2018.

Normality Test

The normality test [Jarque-Bera test] was carried out for skewness and kurtosis on the variables: economic growth, control of corruption, political stability, foreign investors, and government expenditures to determine whether the sample data had been drawn from a normally distributed population. The findings from the normality test illustrate that the skewness value is negative at -0.413, which suggests that the distribution has a long left tail. Meanwhile,

the kurtosis value is less than three at 2.833, which implies a platykurtic distribution or a distribution that is flat relative to normal. The p-value of the Jarque-Bera test is 0.091681, which is greater than 0.05, indicating a normal distribution. The normality of residual refers to a normal result after conducting an adjustment for the standard error test. Based on these results, the data could therefore be considered to be normally distributed. This study used a panel data model starting with correlation analysis, and heteroscedasticity test in the following analysis.

Correlation Analysis

The Pearson Correlation matrix is used to measure the presence of a multicollinearity problem among the variables. The results can show either a positive or negative correlation among the variables.

The matrix was used to examine the correlation between the variables: economic growth (GDP), control of corruption (CCI), political stability (POL), foreign investors (FDI), and government expenditures (GOVEX). The results of the analysis for the seven countries are presented in Table 5.

Table 5: Correlation Matrix

	GDP	CCI	POL	FDI	GOVEX
GDP	1.0				
CCI	.038389 .6525	1.0			
POL	-.084494 .3209	.476001** .0000	1.0		
FDI	.200007** .0178	.738648** .0000	.452343** .0000	1.0	
GOVEX	.415427** .0000	-.037167 .6629	.201271** .0171	-.230027** .0063	1.0

Notes: **significant at the 0.05 level.

The values of correlation in Table 5 show a mixed result among the variables. It indicates that FDI and economic growth had a small positive weak relationship ($r = 0.200$; $p < 0.05$). Meanwhile, government expenditure and economic growth showed a positive moderate relationship ($r = 0.415$; $p < 0.05$). Only the control of corruption and political stability had no correlation with economic growth.

Heteroscedasticity Test

A heteroscedasticity analysis is used to identify the existence of heteroscedasticity. The error variance can be either homoscedastic or heteroscedastic and there will be no consistent difference between the errors (Studenmund, 2014). Studenmund also suggested that to encounter heteroscedasticity, the Generalised Least Squares (GLS) is the alternative method of estimation.

The null and alternative hypotheses are as follows:

Null hypothesis: Homogeneity is present

Alternative hypothesis: Heteroscedasticity is present

The assumption of heteroscedasticity is that the null hypothesis is rejected if the probability (p -value) is significant.

The heteroscedasticity test results are presented in Table 6.

Table 6: Heteroscedasticity Test for the Seven Southeast Asian Countries

Heteroscedasticity Test			
F-statistics	29.82151	Probability	0.0000**
Prob(F-statistics)	0.000000	R-squared	0.469102

Notes: **significant at the 0.05 level.

Table 6 shows that the p -value in the seven countries is 0.0000 ($p < 0.05$). Since the F-statistics is significant at the 5 percent level, the alternative hypothesis is accepted, indicating that heteroscedasticity is present.

Panel Data Analysis

Panel data analysis was used to verify the relationship between the variables: control of corruption, political stability, foreign investors, government expenditures, and economic growth in the seven Southeast Asian countries.

The estimation of regression analysis was tested using the Generalised Least Square (GLS) technique. The time series in this research covered 23 years of annual data from 1996 to 2018, and the total observation was 161. The total balanced panel data of observation was 140 upon the estimation of the regression analysis. This regression included the Durbin-Watson (d) test to detect the existence of autocorrelation in the regression.

The results from the panel data analysis for the seven countries are presented in Table 7.

Table 7: Panel Data Analysis

	Pooled Regression Model	Fixed Effects Model	Random Effects Model
Intercept	7.143 (0.001)	-5.438 (0.097)	7.143 (0.0001)
CCI	-3.785 (0.173)	-0.654 (0.820)	-3.785 (0.115)
POL	-3.072 (0.296)	3.966 (0.307)	-3.072 (0.227)
FDI	0.198 (0.007)	0.329 (0.001)**	0.198 (0.002)**

GOVEX	-0.102 (0.047)	0.340 (0.000)**	-0.102 (0.022) **
Likelihood Test		3.453 (0.003)**	
Hausman Test		20.275 (0.000)**	
R ²	0.119	0.439	0.119
Adj. R ²	0.093	0.425	0.093
F-statistic	4.559 (0.002)	30.549 (0.000)	4.559 (0.002)
Durbin-Watson Stat	0.627	1.777	0.627
Observations	161	161	161

Notes: *p*-value in the symbol (**) represents significance at the 5% level. Standard errors are given in parentheses.

First, the likelihood test was used to test the fixed effects versus the pooled regression models. The assumptions of the hypotheses are as follows:

Null hypothesis: All are dummy parameters, except for the one that has been dropped ($\mu = 0$)

Alternative hypothesis: Fixed effects model is preferred ($p < 0.05$)

Based on Table 7, the value of the likelihood test in the chi-square statistics is equal to 3.453 with the probability value of 0.003. This result indicates significance ($p < 0.05$). Consequently, the null hypothesis is rejected at the 5 percent significance level. The result shows that the pooled regression model is not appropriate to evaluate the influence of control of corruption, political stability, foreign investors, and government expenditures on economic growth in seven countries. This result indicates that the fixed effects model is preferred and it can be used to measure suitable valuations of slope coefficients.

Second, the Hausman test was conducted to check the appropriateness of the model selection to choose the best model between the fixed effects and the random effects models. The assumptions of the hypotheses are as follows:

Null hypothesis: Random effects model is appropriate ($p > 0.05$)

Alternative hypothesis: Fixed effects model is appropriate ($p < 0.05$)

Table 7 shows that the value of the Hausman test is equal to 20.275 and the probability value is 0.000. This result indicates significance ($p < 0.05$). Therefore, the null hypothesis is rejected at the 5 percent significance level. The result indicates that the model for random effects is not appropriate to be used. Therefore, both the Likelihood and Hausman tests show that the fixed effects model is the most appropriate model to evaluate slope coefficients.

Table 7 also shows the fixed effects model estimation of the regression results for the variables in this study, i.e., control of corruption (CCI), political stability (POL), foreign investors (FDI), and government expenditures (GOVEX) on economic growth in the seven Southeast Asian

countries. The adjusted R-square in the fixed effects model is 0.425. The value of R-square for the fixed effects model shows an explanatory power of 0.439, indicating that 44% of the variation in economic growth can be explained by the variation in the four variables, i.e. control of corruption, political stability, foreign investors, and government expenditures. The probability value is 0.00 (significant at a 5 percent level), indicating that this model is a good fit.

The assumption of the null hypothesis for the Durbin-Watson test shows that there is no serial correlation. The Durbin-Watson result (d) for the fixed effects model is approximately 1.77, which lies between $du = 1.633$ and $4-du = 2.367$, indicating that the null hypothesis should not be rejected. Therefore, there is no serial correlation detected.

The result of the CCI for the fixed effects model for the seven countries shows a delay in economic growth. It statistically proves that there is an insignificant relationship between CCI and economic growth, with a probability value equal to 0.820 and the coefficient at -0.654. The value of the coefficient for the CCI indicates that, for every 1 unit increase in CCI, the economic growth (GDP) in the seven Southeast Asian countries would decrease 0.65 percent. This finding is supported by Abu, Abd Karim, and Aziz (2015), who mentioned that control of corruption is not significant for economic growth because the Southeast Asian countries are still believed to be in the state of 'sand in the wheels' growth, where the economic development can be influenced by the level of corruption. Corruption greatly stimulates economic development in East Asia, especially in industrialising economies, including China, Indonesia, Thailand, and Korea. Conversely, the results indicate that economic growth is the strongest economic factor influencing corruption (Freckleton et al., 2012). Besides, Ishola Mobolaji and Omoteso (2009) have pointed out that the negative value in the control of corruption is due to the government having a huge problem in solving the country's management. Obamuyi and Olayiwola (2019) agreed that India and Nigeria could be classified as having corruption because their policies and regulations were difficult to control. This is also consistent with the study by Appiah, Yaw Idan Frowne, and Idan Frowne (2019), which mentioned that corruption is out of control when the government's power is used for personal benefits. The power abuse is across both small and spectacular forms of abuse, and even controlling the nation through insiders and corporate interests. Thus, control of corruption in these circumstances must address the government's involvement in combating corruption and its related operations. Hence, the H1 hypothesis is not accepted as there is a negative and insignificant relationship between control of corruption and economic growth.

The results of the fixed effects model for the POL of the seven countries shown in Table 7 statistically prove that there is no significant relationship between POL and economic growth. The probability value for this relationship is 0.307, while the coefficient is 3.966. These results indicate that for every 1 unit increase in POL, the economic growth (GDP) in the seven Southeast Asian countries would increase by 3.97 percent.

According to Shabbir et al. (2016), the impact of political stability on economic performance is positive at 0.14 percent in eight developing Muslim countries, such as Nigeria and Pakistan.

The positive direction should be in line with the control of corruption. However, because the majority of the Southeast Asian countries are developing countries, this outcome is not in sync with the results for the CCI. Political stability in a country is very important to influence more investors to invest in their countries. However, according to Awan, Akhtar, Rahim, Sher, and Cheema (2018), political stability in Bangladesh and Nepal had no effect on their economic growth, and the probability value was insignificant. The results in this study are inconsistent with many previous studies. Hence, the H2 hypothesis is not accepted as there is no significant relationship between political stability and economic growth.

The results in Table 7 for the fixed effects model of the FDI indicate that foreign investors have a probability value of 0.001 which is significant at a 5 percent level ($p < 0.05$). The value of the coefficient for the FDI indicates that for every 1 percent increase in FDI, the economic growth (GDP) in the seven countries would increase by 0.33 percent. The result proves that the attractiveness of the economic performance would encourage FDI inflows into the Southeast Asian region, which have a huge potential to expand their markets, thus leading to higher levels of economic growth. The result is consistent with the findings by Li and Liu (2005), who researched 63 developed countries from 1970 to 1999 and found that the effect of FDI by domestic or foreign investors on development is very important in order to support economic growth. The finding is also consistent with Lin and Yu (2014), where the panel regression with the fixed effects model in their study also reported that FDI has a positive and significant effect on economic growth. The positive significance at the 5 percent level between FDI and GDP has also received great attention from policymakers in numerous Southeast Asian countries, given that the majority of the sampled Southeast Asian countries are developing countries. Based on the above discussion, the H3 hypothesis is accepted.

The results in Table 7 also indicate that government expenditures (GOVEX) for the fixed effects model have a probability of 0.000, significant at the 5 percent level ($p < 0.05$). The value of the coefficient for government expenditures (GOVEX) indicates that for every 1 percent increase in GOVEX, the economic growth (GDP) in the seven countries would increase by 0.34 percent. Thus, it can be pointed out that government expenditure final consumption helps in the allocation of resources for effective expansion of the Southeast Asian economy. The positive direction of political stability leads to government stability, which in turn will encourage foreign investors to invest in Southeast Asia. The reason for the positive direction in the relationship between government spending and GDP is to increase political stability. The absence of violence and terrorism would then spur a higher growth rate as a bigger share of the government spending can be expended on welfare and fiscal expansionary (Barra et al., 2020). Therefore, the H4 hypothesis is accepted since there is a significant positive influence of government spending on economic growth in the seven Southeast Asian countries, even though there is a decline in the CCI.

5.0 Conclusion

This study was conducted to investigate the behaviour and influence of the independent variables of control of corruption, political stability, foreign investors, and government expenditures on economic growth in seven selected Southeast Asian countries within the context of the theoretical arguments of the basic Solow model and the extended Solow model incorporating corruption.

This study found that the countries with the highest and lowest average GDP per capita were Vietnam and Brunei respectively, which is in line with the findings by Huang (2016) regarding Vietnam and Anaman (2004) on Brunei. Vietnam had the largest GDP per capita growth rate because its industrial development accelerated its economic growth and helped over 45 million residents to be pulled out of poverty. Meanwhile, Anaman (2004) attributed Brunei's the lowest average to the severe recession that had weakened the economy at the peak of the Asian financial crisis and thereafter every year after 1991.

In conclusion, the negative association between control of corruption and economic growth revealed that the extend of control of corruption in Southeast Asia contributes to the discouragement of economic growth. Another reason for decreased control of corruption can be explained by Igiebor (2019), who revealed that the lack of effective corruption in Nigeria was due to behavior of the political leadership that leads to a decline in economic growth. The empirical results revealed a positive relationship between political stability and economic growth, but without a significant influence on economic growth in Southeast Asia. Shabbir et al. (2016) supported that countries with political instability will be increased in corruption with a negative influence on economic growth.

The findings of the present study provide insightful information to the foreign investors in Southeast Asia. FDI have a significant positive relationship with economic growth. The positive significance between FDI and economic growth has received a great deal of attention from policymakers in numerous Southeast Asian countries with majority of SEA regions coming from developing countries (Lin, 2014). Ultimately, in this study found that government expenditures are positively significant to economic growth in Southeast Asian countries. This finding supported by Barra et al. (2020) that increasing government expenditures with positive direction towards GDP would yield a higher growth rate, which tends to increase the share of government expenditure in national income, expanding welfare, and finance.

This study would add to the current literature on the knowledge pertaining to factors influencing economic growth in the Southeast Asian region. Moreover, the findings could motivate policymakers, especially economists in the Central Bank, on the importance of having a new strategy to curb the underground economy by designing additional wide-ranging guidelines.

The study had certain limitations, specifically with data availability. The analysis was carried out using secondary data obtained from the World Bank and World Governance Indicator.

While it was possible to access the data from the database, data pertaining to all the Southeast Asian countries for the years 1996 to 2018 were not fully accessible to be included in this study. Hence only seven out of the eleven Southeast Asian countries were included as the data for the remaining countries, viz., Laos, Myanmar, Timor-Leste, and Cambodia could not be found in the database.

It is recommended that future studies focus on the subcategories of government expenditures, such as expenditures on education, agriculture, military, and health, as this could yield fruitful outcomes concerning which expenditures are mostly correlated with corruption, which has a profound influence on economic growth in Southeast Asia. Besides, future researchers can also increase the number of observations by expanding the selection of countries to make it more diverse as the current study focused only on the Southeast Asian region.

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