INDIVIDUAL AND ORGANISATIONAL INFLUENCES ON MANAGERS' USE OF ACCRUAL ACCOUNTING FOR DECISION MAKING IN INDONESIAN PUBLIC SECTOR

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Declaration of Originality

I hereby declare that this thesis is my original work and that, to the best of my knowledge, it contains no material previously published or written by another person, except where due acknowledgement is made in the thesis.

Signed: _____ On: 19 / 4 / 2020

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In the name of God, the Most Gracious, the Most Merciful.

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Abstract

The thesis examines the factors influencing the use of accrual accounting for decision making by managers in the Indonesian public sector. The Supreme Audit Board of Indonesia and the Indonesian Vice Minister of Finance have raised concerns regarding the slow progress of the adoption of full accrual accounting in Indonesia and its low level of use for decision making, which prompt the need to examine which factors may influence the use of accrual accounting for decision making by Indonesian public sector managers. Such concerns also echo the calls for more research on the factors influencing the use of accrual accounting for decision making. Drawing on the theory of planned behaviour and relevant public sector accounting and administration literature, this thesis examines the role of individual factors and organisational characteristics in influencing the use of accrual accounting for decision making.

This thesis employs a two-stage mixed-methods research approach. Stage 1 involves semi-structured, in-depth interviews with 45 participants from 11 Indonesian central government ministries. Stage 2 entails a questionnaire survey conducted with a sample of 507 respondents from 34 ministries. The interview findings provide input into the development of the questionnaire survey, and the questionnaire data are analysed using the partial least squares method. The analysis reveals a low level of accrual accounting for decision making by managers. The findings indicate that individual factors and organisational characteristics influence managers' intention to use and actual use of accrual accounting for decision making. Specifically, managers' attitudes, perceptions of stakeholder pressures and perceived abilities to control their use of accrual accounting (perceived behavioural control) influence their use of accrual accounting for decision making. Perceived behavioural control is found to have the strongest effect on managers' intention to use accrual accounting for decision making, as well as having a direct effect on their actual use. Further, organisational characteristics (comprising

structure, culture and strategy) influence both intention and behaviour, and moderate the relationship between managers' intention to use and behaviour in using accrual accounting for decision making. Among the three characteristics, actual use is largely driven by organisational culture. The results also reveal differences in managers' use of accrual accounting for decision making between managers who use the International Public Sector Accounting Standards and managers who use the Government Finance Statistics.

This thesis contributes to the theoretical literature relating to the public sector accounting by integrating the behavioural perspectives and organisational influences to examine managerial decision making in the public sector. The findings of this thesis highlight the importance of integrating individual and organisational factors in understanding which factors may encourage public sector managers in Indonesia to use accrual accounting for decision making. The thesis also provides empirical evidence to inform Indonesian policymakers and the central government in improving accrual accounting system in general, and increase its use for decision making in particular.

List of Abbreviations

ANU	Australian National University
ASEAN	Association of Southeast Asian Nations
AVE	Average Variance Extracted
CR	Critical Ratio
EU	European Union
GFS	Government Finance Statistics
IMF	International Monetary Fund
IT	Information Technology
IPSAS	International Public Sector Accounting Standards
IPSASB	International Public Sector Accounting Standards Board
LRD	Location-Related Differences
MD	Mahalanobis Distance
MGA	Multi-group Analysis
PBC	Perceived Behavioural Control
PCA	Principal Component Analysis
PLS	Partial Least Squares
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UK	United Kingdom
US	United States
VIF	Variance Inflation Factor

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Chapter 1: Introduction

1.1 Introduction

This thesis examines the factors influencing the use of accrual accounting for decision making by managers in the Indonesian public sector.[1] To do so, it employs the theory of planned behaviour and draws on relevant public sector accounting and administration literature to investigate how individual and organisational factors may influence managers' use of accrual accounting for decision making. The remainder of this chapter is organised as follows. Section 1.2 explains the background and research problem of the study, while Section 1.3 discusses the justification and contributions of the study. Section 1.4 explains the analytical framework and research method. Finally, Section 1.5 provides an overview of the thesis structure.

1.2 Background and Research Problem

1.2.1 Background: Accounting Reform in Indonesian Public Sector

Since the 1980s, accounting reforms have been a key element in the new public management practices (Hood 1995). The movement from cash-based accounting to accrual-based accounting began to occur in the late 1980s and 1990s in developed economies—most notably in New Zealand, Australia and the United Kingdom (UK). The former became the first country to fully implement accrual accounting at both central and local levels by the early 1980s, and is regarded a success story in adopting the private practice in the public sector context (Carlin 2005). Australia and the UK also moved rapidly and are considered early adopters of the accrual accounting system within their public sectors (Guthrie 1998; Carlin 2005; Buhr 2012).

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[1] In this thesis, the term 'accrual accounting' refers to 'accrual accounting information' in the context of the use of accrual accounting for decision making.

Subsequent to the widespread adoption of accrual accounting in the public sector in developed and emerging economies, Indonesia began the migration to accrual accounting for its public sector after the financial reform in 2003. In general, the accounting practices in the Indonesian public sector consisted of three phases. The first phase occurred from the independence of Indonesia in 1945 until 2003, when the country implemented a traditional bookkeeping system. During this period, Indonesia used cash-based accounting and a single-entry system, without any accounting standards put in place. The only accountability report was the State Budget Calculation, which showed the budget and its realisation. This report was prepared manually by the government to be submitted to the parliament every year. Nevertheless, there was a long time lag of two to three years for the submission after the fiscal year ended.

The second phase of accounting practices ran from 2004 to 2014, when the Indonesian government introduced partial accrual accounting, called 'cash towards accrual'. During this phase of reforms, the government embarked on a more modern accounting approach with a double-entry system. The partial accrual accounting system was the transition method from a cash-based approach to full accrual accounting, where the balance sheet was prepared on the basis of the accrual accounting system, while other reports (i.e. the operating statement and cash flow statement) were conducted through a cash basis. In this stage, the financial statements were produced using the accounting standards, with a combination of manual and computerised systems, audited by the Supreme Audit Board (the Indonesian audit office), and submitted to the parliament within a period of six months after the fiscal year ended. The Indonesian Accounting Standards Board was formed for the first time in 2005, and their task was to set the public sector accounting standards that must be applied when preparing financial statements at central and local government levels. The partial accrual accounting standards were issued based on *Government Regulation 24/2005*.

According to *Law 17/2003 on State Finance* and *Law 1/2004 on State Treasury*, the government had to prepare financial reports based on a full accrual accounting system by 2008 at the latest. However, the implementation of full accrual accounting was postponed until 2015, without obvious reasons. To avoid breaking the law, the government formed an agreement with parliament in 2008 to extend the transition period of partial accrual accounting for seven years. The government then promulgated *Government Regulation 71/2010 on Government Accounting Standards* to replace *Government Regulation 24/2005*, which stated that financial statements for the fiscal year of 2015 had to be prepared using the full accrual accounting system.

The third phase of accounting reforms started in 2015, when the government eventually moved to full accrual accounting and produced its first full accrual-based financial statements.[2] In this period, the government prepared two types of full accrual-based reports with reference to the International Public Sector Accounting Standards (IPSAS) and Government Finance Statistics (GFS). The IPSAS and GFS are the principal and most widely recognised international financial reporting standards for the public sector (IMF 2014; Cavanagh et al. 2016; IPSASB 2018). The IPSAS is set by the IPSAS Board (IPSASB) for use by public sector entities for general purpose financial reporting (IFAC 2014; IPSASB 2018), while the GFS is an accounting framework developed by the International Monetary Fund (IMF) to specifically provide governments with financial information for fiscal analysis purposes (IMF 2014). Previous studies investigating accrual accounting in the Indonesian public sector largely focus on the 'cash towards accrual' (partial accrual accounting) period prior to 2015 (e.g. McLeod and Harun 2014; Harun et al.

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[2] The terms 'accrual accounting' and 'full accrual accounting' are used interchangeably in this study. 'Full accrual accounting' is used to distinguish from 'partial accrual accounting' in the Indonesian context.

2015; Hassan 2015; Prabowo et al. 2017; Mir et al. 2019). In contrast, this thesis examines the full accrual accounting system after 2015.

1.2.2 Issues Associated with the Use of Accrual Accounting for Decision Making in Indonesian Public Sector

The Indonesian government accounting standards based on *Government Regulation 71/2010* state that accrual-based financial statements provide useful information for decision making. However, despite the implementation of full accrual accounting, there are some indications in the country's actions that suggest that Indonesian public sector entities may be reluctant to use accrual accounting for decision making. First, in contrast to other countries that switched rapidly from the cash method to the accrual accounting system with a short transition (Carlin 2005; Buhr 2012), Indonesia has had a long period of transition (11 years). This lengthy transition triggered a plea letter by the chairperson of the Supreme Audit Board (auditor-general) to the president, as a reminder of the government's obligation to comply with the laws[3] to implement accrual accounting in 2008, and recommending a new timeframe for the implementation, given the absence of the government initiatives for the accrual accounting reforms (BPK 2008). Although the government finally secured a seven-year moratorium with parliament to extend the period of transition and defer accrual accounting to 2015, the slow progress of accrual accounting (BPK 2017; Skalanews 2017) may indicate the government's reluctance to use accrual accounting, particularly for decision making.

Second, the government continues maintaining a cash-based budget without preparing an accrual one, which does not align with the original plan for accrual budgeting, as mandated by

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[3] *Law 17/2003 on State Finance* and *Law 1/2004 on State Treasury.*

the laws.[4] The same plea letter from the auditor-general also asked the government to change the budgeting and bookkeeping systems from a cash basis to an accrual system (BPK 2008). Despite the mandates and audit office's recommendation, the government has continued preparing a cash-based budget after the implementation of full accrual accounting.[5] Given that the budget is the key management and most fundamental document in the public sector (Blöndal 2003; OECD 2010), the accounting system used for the budget is crucial for decision making, specifically for the availability of resources and evaluating the accomplishment of programs related to objectives (Carlin 2005; Arnaboldi and Lapsley 2009). The government's persistence in using a cash-based budget may suggest the country's preference for a cash-based system over accrual accounting for budgeting and resource allocation decisions. In addition, the support of information technology (IT) is a prerequisite for the successful use of accounting system (Khan and Mayes 2009). Previous studies suggest that IT is an important factor that influences managers' choice of what accounting system to use when making decisions (Caccia and Steccolini 2006; Cavanagh et al. 2016). Further, operating different accounting systems—that is, a cash-based budget and accrual-based financial statements—in parallel creates inconsistencies between the budget and financial statement information (Blöndal 2003). This practice can result in doubt among users regarding which numbers in a set of documents should be used to make decisions, and difficulty in linking the use of accrual accounting information to specific phases in the budgets (Paulsson 2006). According to the IPSASB (2018), the financial statements and budget should be on the same basis of accounting to avoid these problems.

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[4] Accrual budgeting is required by *Law 17/2003*, Articles 32 and 36 regarding state finance, and *Law 1/2004*, Article 70 regarding state treasury.

[5] The government made a deal with parliament in 2008 to have flexibility in using a cash- or an accrual-based budget after the accrual accounting implementation. This option is stated in the government accounting standards based on *Government Regulation 71/2010*. The retention of a cash-based budget may suggest a lack of enforcement by the Indonesian government, and a complication in laws and regulations in Indonesia, as *Laws 17/2003* and *1/2004* are still in effect.

Third, the Indonesian government implemented a dual system of accrual accounting (IPSAS and GFS) simultaneously in 2015. The GFS system consolidated all the public sector transactions at the national (whole-country) level, while the IPSAS system was applied for the individual departments (commonly called ministries/agencies) and their consolidated financial statements. Operating a dual system of accrual accounting may result in different preferences for IPSAS and GFS because of their different formats and coverage. For example, although GFS is required by Indonesian regulations to be used for fiscal policy decisions,[6] Indonesian public sector entities may prefer IPSAS-based reports over GFS-based reports, since they are more familiar with the IPSAS presentations that have been used for much longer than the GFS formats.[7] Running a dual accrual accounting system may also cause confusion for the users of accrual-based reports because of substantially different results (Barton 2007, 2011).

Prior Indonesian studies suggest that the delay and complication in the implementation of accrual accounting may be attributed to a resistance to accrual accounting (Harun and Robinson 2010; McLeod and Harun 2014) and to government managers not considering accrual accounting useful for decision making (McLeod and Harun 2014; Prabowo et al. 2017; Mir et al. 2019). The country's resistance to accrual accounting is indicated by the low commitment of top managements towards accountability (Harun and Robinson 2010) and the insistence on continuing to use cash-based financial statements (McLeod and Harun 2014), which hinder the successful implementation of accrual accounting (as reflected in the lengthy transition). Moreover, partial accrual-based contents in financial statements are considered less useful for decision making because of doubts about the benefit of using accrual accounting information for management decision making (McLeod and Harun 2014). In addition, the requirement to

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[6] The use of GFS for fiscal matters is based on the *Minister of Finance Regulation 275/2014 Regarding Indonesian Government Finance Statistics* and the *Minister of Finance Regulation 238/2011 Regarding General Guidelines for Government Accounting Systems.*

[7] IPSAS was used as a reference in the preparation of balance sheet during transition (2004-2014).

use a cash-based accounting system alongside partial accrual accounting during the transition has created confusion and inefficiency, which has led to government managers' preference for the traditional and more familiar cash accounting system and the underuse of partial accrual accounting for decision making (Prabowo et al. 2017; Mir et al. 2019). However, there is little knowledge about whether the underuse of accrual accounting persists following the implementation of full accrual accounting. The Indonesian audit office and Indonesian Vice Minister of Finance have raised concerns about the slow progress in adopting full accrual accounting in Indonesia and its low level of use for decision making (BPK 2017; Skalanews 2017). These concerns prompt the need to examine the factors that may influence the use of accrual accounting by managers for decision making.

1.2.3 Research Question

Given Indonesia's lengthy transition and the concerns regarding the government's reluctance to move from a cash-based accounting system to an accrual-based accounting system, it is unclear whether Indonesian public sector managers use accrual accounting for decision making and what factors may shape their use. Therefore, this study seeks to explore the factors that may influence managers' behaviours to use accrual accounting for decision making. To that end, this study explores the following research question:

> What are the factors influencing the use of accrual accounting for decision making by managers in the Indonesian public sector?

In exploring this research question, this study also provides an analysis of the level of use of accrual accounting by managers in making various decisions. This provides an understanding of the extent to which accrual accounting is used in the Indonesian public sector. Individual factors and organisational characteristics that may influence the use of accrual accounting are examined.

1.3 Justification and Contribution

According to the Indonesian government accounting standards prescribed by *Government Regulation 71/2010*, one of the main objectives of financial statements based on accrual accounting is to provide useful information for decision making.[8] However, thus far, there is no substantial evidence of the extent of use of full accrual accounting for decision making in the Indonesian public sector. Prior public sector accounting studies in Indonesia mainly focus on the partial accrual accounting system (e.g. Prabowo 2015; Mir et al. 2019). For example, Prabowo (2015) conducts a historical analysis of the adoption of accrual accounting in Indonesia and finds that financial statements based on partial accrual accounting do not have decision usefulness because government managers perceive that accrual accounting has no benefits and its adoption is seen as a process of seeking legitimacy. He concludes that government managers prefer cash-based financial reports over partial accrual-based ones. He further calls for research to examine the actual use of full accrual accounting in the Indonesian public sector and to explore government managers' views regarding accrual accounting. Similarly, Mir et al. (2019) find that cash-based reports are preferred by local governments for decision making, compared with partial accrual ones, and suggest that future research should examine the use of full accrual accounting information for decision making, particularly at the central government level. The current study addresses these calls. Given that prior public sector accounting studies in the Indonesian context were largely conducted prior to the implementation of full accrual accounting, this thesis contributes to research in this area by extending the focus to the post–full accrual accounting implementation period.

This paper is also motivated by calls for more research on the factors influencing the use of accrual accounting for decision making in the public sector (Ter Bogt and van Helden 2000;

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[8] The other objective of accrual accounting information is accountability purposes (i.e. financial reporting).

Connolly and Hyndman 2006). Previous empirical studies investigating the use of accrual accounting in the public sector suggest that there is a gap between the intended accounting change and the actual use of accrual accounting for decision making (e.g. Ter Bogt and van Helden 2000; Connolly and Hyndman 2006; Cohen et al. 2013). However, little is known about the factors influencing public sector managers' use of accrual accounting for decision making. Public sector managers are the primary internal users of financial reports and are expected to use accrual accounting information when making key decisions (IPSASB 2018). According to the conceptual framework of the IPSAS, public sector managers are responsible 'for the efficient and effective use of resources, the achievement of specified service delivery objectives, and compliance with relevant budgetary, legislative and other requirements' (IPSASB 2018, pp. 48–49). Given that public sector managers have the responsibility for making crucial decisions, it is relevant to explore the individual factors that motivate managers to use accrual accounting in their decisions.

Understanding the reasons for the limited use of accrual accounting for decision making is important to bridge the discrepancy between the intended and actual use of accrual accounting (Scapens 1994; ter Bogt and van Helden 2000). Previous empirical studies on the use of accrual accounting for decision making in the public sector focus on developed countries, such as the Netherlands (ter Bogt and van Helden 2000), the UK (Arnaboldi and Lapsley 2009) and Switzerland (Bergmann 2012), while research on developing countries is scarce. Studying accrual accounting adoptions for decision making in the context of developing countries is important to better understand the effect of accrual accounting on the public sector in developing countries and to ascertain the extent to which decision makers use accrual accounting to make decisions in specific contextual settings (Connolly and Hyndman 2006; Pollanen and Loiselle-Lapointe 2012). This study is conducted in a unique research context—a developing country with a lengthy transition towards full accrual accounting (11 years) that

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has implemented a dual accrual accounting system (IPSAS and GFS) in parallel. Moreover, prior public sector accounting research in Indonesia focuses on local governments implementing a partial accrual accounting system (Mir et al. 2019), largely because of the difficulty in data collection at the central government level. Therefore, this study not only fills the gap in the literature, but also provides evidence of the Indonesian central government's use of accrual accounting for decision making.

Further, previous studies largely focus on institutional factors, which emphasise the importance of organisational routines and institutional rules in shaping processes of accounting change (e.g. ter Bogt and van Helden 2000; Caccia and Steccolini 2006), yet there is limited research on managers' individual factors. While institutional influence is an important factor, there is a need for a new theoretical basis to gain better insights into the low level of use of accrual accounting for decision making in the public sector (Jacobs 2016; Bergmann et al. 2019). As such, this thesis adds to the public sector accounting literature by examining the influences of individual factors, together with organisational influences, to address the research question regarding the factors influencing Indonesian public sector managers' use of accrual accounting for decision making.

1.4 Analytical Framework and Research Method

This thesis draws on the theory of planned behaviour (TPB) (Ajzen 1985, 2005) and relevant public sector accounting and administration literature (e.g. ter Bogt and van Helden 2000; Ashworth et al.2009) to examine the individual factors and organisational characteristics that may influence the use of accrual accounting for decision making. Ajzen's (2005) TPB framework is adopted to analyse the individual factors influencing the use of accrual accounting for decision making. The TPB is a well-recognised framework to examine individual behaviour and is extensively used in various disciplines (Armitage and Conner 2001; Ajzen 2011; De

Leeuw et al. 2015). According to the TPB, human behaviour is directly determined by behavioural intention. Intention is influenced by three factors: individual attitude towards the behaviour (attitude), perceived social pressures from significant referents to perform the behaviour (subjective norm) and perceptions of the ease or difficulty of performing the behaviour (perceived behavioural control) (Ajzen 1991, 2005). When applying the TPB to the accrual accounting issue, the extent to which accrual accounting information is used by managers for decision making can be influenced by their intention to use accrual information. Managers' intention can in turn be influenced by their personal attitudes towards accrual accounting, their perceptions of the stakeholder pressures that they face from inside and outside the organisation, and their perceptions of the control they have over the decisions. The combination of these three components (attitude, subjective norm and perceived behavioural control) form the key features of the TPB, with intention as a mediator between these three factors and behaviour.

In addition to individual factors, this thesis draws on relevant public sector accounting and administration literature (e.g. ter Bogt and van Helden 2000; Ashworth et al. 2009) to incorporate organisational characteristics in explaining managers' decision-making behaviour. Ashworth et al.'s (2009) concepts of organisational characteristics, including structure, culture and strategy, are applied to identify and analyse organisational characteristics. Underlying Ashworth et al.'s (2009) argument is that public sector organisations are subject to different levels and types of institutional pressures, and this institutional influence is typically reflected in organisational structure, culture and strategy. In other words, differences in organisational structure, culture and strategy represent different organisational responses to institutional influences. Therefore, according to Ashworth et al. (2009), institutional influences should be visible in these organisational characteristics. These organisational characteristics are pertinent to the analysis in this thesis, given that Indonesian public sector organisations are highly

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institutionalised and subject to institutional pressures. Thus, it is relevant to examine public sector managers' behaviour under such organisational characteristics. This thesis also draws on relevant literature (e.g. ter Bogt and van Helden 2000) to analyse the effect of organisational characteristics on managers' use of accrual accounting for decision making. Hence, this study examines the effects of individual and organisational factors on managers' behaviours to use accrual accounting for decision making. The TPB is applied to explain the underlying motivations behind managers' use of accrual accounting for decision making, while organisational characteristics provide the organisational context in which individual managers are acting.

To address the research questions, this thesis uses a mixed-methods research approach. The research is conducted in two stages. In the first stage, interviews are conducted to provide insights and additional information on the managers' perceptions of accrual accounting in Indonesia, given the limited literature on this issue in the Indonesian context. The findings from the first stage provide input into the development of the questionnaire instrument for the next stage. In the second stage, the research question is examined by using a questionnaire survey of Indonesian government managers' views. Data collected from the questionnaire are used to test the hypotheses in this study.

1.5 Structure of the Thesis

This thesis is structured as follows. Chapter 2 reviews the literature on the factors influencing the use of accrual accounting for decision making. The literature review comprises two major parts. The first part reviews the literature on the use of accrual accounting for decision making. The second part discusses prior research investigating the factors that potentially influence accounting change in the public sector in general and accrual accounting in particular. These factors include managers' attitudes, stakeholder pressures, implementation barriers and

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organisational characteristics and their interaction with institutional influence and organisational behaviour in the public sector. Chapter 3 presents the theoretical framework of this thesis and develops the research hypotheses related to the factors that may affect the use of accrual accounting for decision making. Chapter 4 describes the research method used to collect data and test the research hypotheses. This study uses a mixed-methods approach to data collection comprising interviews and a questionnaire survey. Chapter 5 reports and discusses the results of the interview findings. Chapters 6 and 7 provide an analysis of the results from the questionnaire survey and hypotheses testing using the partial least squares method. Finally, Chapter 8 concludes this thesis.

Chapter 2: Literature Review

2.1 Introduction

This chapter reviews the literature regarding accrual accounting in the public sector. Section 2.2 provides a review of the use of accrual accounting for decision making in the public sector, while Section 2.3 discusses the prior research investigating the factors that may influence accounting change in the public sector in general and accrual accounting in particular. Section 2.4 presents the chapter summary.

2.2 Use of Accrual Accounting for Decision Making

The move from a cash method to an accrual accounting system in public sector entities is discussed widely in the literature (Lapsley et al. 2009; Hyndman and Connolly 2011). Concerns are raised regarding both the benefits derived from and the difficulties associated with accrual accounting practices, particularly regarding the potential for this system to provide informational benefits to decision makers of public sector entities (Adhikari and Gårseth-Nesbakk 2016; Anessi-Pessina et al. 2016). The literature on the controversies of accrual accounting for the public sector largely focuses on normative arguments. Supporters of accrual accounting claim that accrual accounting is relevant for decision making since the financial statements based on accrual accounting produce better information on which to base decisions (Kober et al. 2010, 2013; Cavanagh et al. 2016). In line with this, the importance of accrual accounting for decision making is expressed in the financial reporting standards for the public sector, given that the objective of the IPSAS is to provide comprehensive information for public sector decision making (IPSASB 2019) and the goal of the GFS is to produce comprehensive data for fiscal policy decisions (IMF 2014). However, opponents raise concerns that accrual accounting is a problematic system (Lapsley et al. 2009) that is adopted for legitimacy purposes

(Pollanen and Loiselle-Lapointe 2012), and the effect on decision makers' decisions is unclear because of the lack of empirical evidence to support the claim of accrual accounting relevance to decision making (Carlin 2005; Christensen 2007). This controversy raises doubt regarding whether accrual accounting is actually used for decision making in the public sector.

Various prior empirical studies on the use of accrual accounting for decision making in the public sector suggest that a wide gap exists between the formal requirements of accrual accounting and its actual implementation, and its use for decision making is limited compared with the time and cost invested (ter Bogt and van Helden 2000; Caccia and Steccolini 2006; Connolly and Hyndman 2006; Paulsson 2006; Arnaboldi and Lapsley 2009; Pina et al. 2009; Bergmann 2012; Cohen et al. 2013). These studies largely focus on developed countries. In the Netherlands, an early study by ter Bogt and van Helden (2000) examines accounting changes from the traditional cash-based accounting method to the accrual accounting system, and finds a substantial gap between the desired formal accounting changes, including accrual accounting, and the actual implementation and application of the change in the central and local government organisations. These researchers develop a broad framework to understand the reasons for this gap and identify a number of factors, such as the lack of budgetary constraints, political pressure and a lack of commitment by top management.

In the UK, Connolly and Hyndman (2006) assess the benefits and drawbacks of accrual accounting using semi-structured interviews with key actors involved in the implementation, maintenance or oversight of accrual accounting in Northern Ireland. Their findings indicate that the actual implementation of accrual accounting is very different to the government's expectations in terms of cost and timing, and accrual information is rarely understood by the public sector managers who are meant to use it for daily decision-making purposes. Arnaboldi and Lapsley (2009) also examine the implementation of accrual accounting and managers'

perceptions of accrual accounting information in Scotland. They find that the intended aim of enhancing accountability from accrual accounting has not materialised and there is scepticism over the use of accrual accounting information for decision making, with the finance officers in this study having little or no interest in accrual accounting information. While Connolly and Hyndman (2006) raise the issue of a lack of understanding of accrual accounting by public sector managers, Arnaboldi and Lapsley (2009) reveal the ambiguity of implementation, confirming the need for the approach to be seen to be legitimate, rather than actually using accrual accounting information for making decisions.

In Italy, Caccia and Steccolini (2006) analyse the accounting change using multiple data collection methods, including in-depth semi-structured interviews with key actors and reviewing government documents. Their findings indicate that a significant gap exists between the intended purpose and the actual implementation of accrual accounting, including its use for decision making in Italian local governments; however, the reasons for the gap are unknown. Hence, they suggest further research to explore the factors that can explain the gap in accounting change. In Sweden, Paulsson (2006) assesses the use of accrual accounting by sending questionnaires to central government agencies and conducting interviews with senior advisors in those organisations. His findings support earlier studies that there are large variations in the use of accrual accounting. He suggests that the use of accrual accounting is largely linked to organisational characteristics, such as the size and financial situation of the individual agency. Further, Pina et al. (2009) seek to measure the degree of accrual accounting implementation in European Union (EU) local governments by comparing the accrual accounting legal requirements in force in each country and their implementation on the published financial statements. Their results show a gap between rhetoric changes and reality, and indicate that accrual accounting reform is introduced in public administrations for symbolic value, rather than for decision making.

More recently in Switzerland, Bergmann (2012) raises concerns about the limited use of accrual accounting for decision making, which is often seen as the second objective after accountability. He investigates the use of accrual accounting for a small scope of decision situations (i.e. fiscal policy) after its long adoption at both state and local levels of government in the 1980s and at federal level in 2007. He discovers that, although accrual accounting is used for fiscal decisions, its implementation alone does not immediately lead to its increased use for decision making. He argues that accrual accounting systems require some time to be implemented and the employment of accrual-based measures for fiscal policy targets and key performance indicators is needed to increase the use of accrual accounting for decision making at all three levels of Swiss government.

In Greece, Cohen et al. (2013) investigate the actual use of accrual accounting information for decision making by surveying financial managers from 106 Greek municipalities. They find a disparity between the formal requirements and actual use of accrual accounting, where cash accounting still dominates in the major functions of decision making. They suggest that a secondary role of accrual accounting is due to the deficiency of accrual accounting institutionalisation in local governments, including a lack of experience and familiarity, whereas cash-based accounting is preferred because it has been embedded in the organisational process for a long time and is favourable for stakeholders who do not understand accrual accounting.

The above studies suggest a gap between the formal requirements of accrual accounting and its actual implementation. These studies also highlight the ongoing problems related to the limited use of accrual accounting for decision making across various developed nations, and managers' preference of cash-based accounting in making their decisions. However, little attention is given to examining the factors that influence the use of accrual accounting for decision making.

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Moreover, prior studies on the use of accrual accounting for decision making are conducted in developed countries, while research on developing countries is scarce. Full accrual accounting has recently been implemented in the Indonesian public sector. Thus, the following section provides a review of the literature examining a similar issue in the Indonesian context.

2.2.1 Indonesian Context

In the Indonesian public sector, prior research on the use of accrual accounting for decision making has been scant. Previous studies in the Indonesian context largely examine the change from cash-based accounting to partial accrual accounting—that is, the period prior to the adoption of full accrual accounting—and examine a local government context (Harun and Robinson 2010; McLeod and Harun 2014; Prabowo et al. 2017; Mir et al. 2019). Harun and Robinson (2010) examine the main problems with respect to the public sector accounting reforms in Indonesia during the transition, and find that the resistance of the government to implementing a more informative accounting system (partial accrual accounting) is indicated by the government's reluctance to embrace a greater level of responsibility for reforming public sector accounting and low commitment towards accountability. McLeod and Harun (2014) investigate the challenges encountered in reforming public sector accounting at three local jurisdictions in Indonesia. They find that the financial report information based on partial accrual accounting is less useful for decision making, and there is resistance from local governments to accrual accounting change. Prabowo et al. (2017) examine the stimuli in the partial accrual accounting adoption in Indonesia, and find that seeking legitimacy is the stimulus behind adoption, and that financial statements under partial accrual accounting do not have decision usefulness. A recent study by Mir et al. (2019) examines the implications of partial accrual accounting system in five Indonesian local governments. They find that the partial accrual-based contents of the financial reports are underused for decision making because the

majority of the respondents prefer cash-based information for their decisions, and partial accrual accounting is considered less useful for decision making. They suggest that extensive training and a significant increase in funding associated with accrual accounting are needed to improve its use for decision making.

In summary, prior Indonesian studies provide indications that the Indonesian public sector may not use partial accrual accounting for decision making, as shown by the government's resistance and the government managers not considering partial accrual accounting useful for decision making. However, these studies are conducted prior to the implementation of full accrual accounting. As such, the extent to which full accrual accounting is actually used for decision making in the Indonesian public sector and which factors may influence this use remain to be seen. Indeed, Mir et al. (2019) call for more research to examine the use of accrual accounting for decision making, and suggest that research focus on the central government level in future studies. Therefore, the current study examines the use of accrual accounting for decision making by central government managers in the Indonesian public sector following the implementation of accrual accounting in 2015.

Overall, previous public sector accounting studies find substantial discrepancies regarding the actual use of accrual accounting and the use expected by governments across developed countries. A similar experience appears to extend to the use of partial accrual accounting in Indonesian local governments. There is little knowledge of the use of full accrual accounting in the Indonesian central government. Prior studies also suggest that this gap can be attributed to different factors in different developed countries and various levels of government (central, federal, local and department). However, it is unclear whether the Indonesian central government may experience similar influencing factors. Understanding the reasons for the limited use of accrual accounting for decision making is important to bridge the discrepancy

between the intended and actual use of accrual accounting (Scapens 1994; ter Bogt and van Helden 2000; Caccia and Steccolini 2006; Connolly and Hyndman 2006). Given the importance of public sector managers in making key decisions and the limited understanding of why accrual accounting may be used for decision making in the Indonesian public sector, this thesis seeks to investigate the factors influencing managers' use of accrual accounting for decision making in the Indonesian public sector. The following section provides a review of the relevant public sector accounting and administration literature, from which insights about the potential factors that may influence the use of accrual accounting for decision making can be drawn.

2.3 Factors Influencing Accounting Change

This section reviews the literature that focuses on the factors influencing accounting change in general and accrual accounting in particular. This literature can be broadly categorised into two areas:

1. the individual, internal and external factors influencing the implementation and use of accrual accounting; of particular relevance to this thesis are managers' attitudes, stakeholder pressures and implementation barriers

2. organisational characteristics and their interplay with institutional influence and organisational behaviour.

2.3.1 Managers' Perceptions and Attitudes towards Accrual Accounting

A number of public sector accounting studies have been conducted to determine the perceptions and attitudes of public sector managers towards accrual accounting, particularly for decision making. These studies are largely conducted in developed countries using quantitative and/or qualitative research methods. The developed countries include Australia (Jones and Puglisi 1997; Mack and Ryan 2006; Andriani et al. 2010; Kober et al. 2010), the UK (Connolly and

Hyndman 2006), Sweden (Paulsson 2006), the United States (US) (Frank and Gianakis 2010), Canada (Pollanen and Loiselle-Lapointe 2012), Spain (Brusca and Montesinos 2013), Japan (Kobayashi et al. 2016), Portugal (Nogueira and Jorge 2016, 2017) and countries in the EU (Pina et al. 2009). Most prior research is conducted at the local or state government level, except for the studies by Jones and Puglisi (1997), Paulsson (2006), Kober et al. (2010) and Pollanen and Loiselle-Lapointe (2012), who examine federal or central government managers.

Some studies suggest that managers possess positive attitudes towards accrual accounting, particularly regarding its use for decision making. For example, Pina et al. (2009) compare the implementation of accrual accounting in EU countries and find that local government managers in the EU are interested in implementing accrual accounting because they believe that accrual information is useful for decision making. Andriani et al. (2010) ascertain the usefulness of accrual accounting information for decision making from directors-general and senior and middle-level managers of 24 government departments in Western Australia in 2003, and also discover that accrual accounting is perceived to be more useful than cash accounting in most decision situations. Similarly, using a different sample in Australia, Kober et al. (2010) find that accrual accounting is perceived to be more useful than cash accounting for most decisions. They conduct a survey of Commonwealth and state government senior departmental managers, financial statement preparers and external statement users from treasury and finance departments, as well as public accounts committee members, to examine their perceptions of the usefulness of various accounting systems for decision making. Likewise, Nogueira and Jorge (2016, 2017) analyse the perceived usefulness of accrual-based financial reports for decision making by financial managers in Portuguese municipalities, and also discover that accrual accounting information is perceived to have a high degree of usefulness. In a recent study, Kobayashi et al. (2016) assess the usefulness of accrual accounting for decision making in a dual system, where accrual accounting coexists with cash accounting, in the Japanese local

government. They conduct a survey of managers in finance departments who prepare financial statements and make decisions, and also discover that accrual information is perceived as useful for decision making.

In terms of decision contexts, the above studies find that accrual accounting is useful for different areas. Some studies find that accrual accounting is considered useful by public sector managers for performance evaluation (Andriani et al. 2010; Kober et al. 2010; Kobayashi et al. 2016). Other studies investigate a smaller coverage of decision situations, without mentioning specific decision situations, and find that accrual accounting is perceived as useful for financial decisions (Pina et al. 2009; Nogueira and Jorge 2017) and internal decisions (Nogueira and Jorge 2016). Andriani et al. (2010) and Kober et al. (2010) also discover that accrual accounting is useful for efficiency and effectiveness assessment, discharging accountability, budgeting, investment decisions, resource allocation, cost of goods/service and asset and liabilities management. In contrast, they find that, for cash flow evaluation, accrual accounting is considered less useful by public sector managers. These studies indicate that managers' beliefs about the benefits of accrual accounting for decision making, such as the full cost implications of decisions and better financial performance indicators—are the main reasons for their positive attitudes (Kober et al. 2010; Kobayashi et al. 2016).

However, other studies report a negative attitude towards the use of accrual accounting for decision making (Jones and Puglisi 1997; Connolly and Hyndman 2006; Mack and Ryan 2006; Paulsson 2006; Frank and Gianakis 2010; Pollanen and Loiselle-Lapointe 2012; Brusca and Montesinos 2013). For instance, Mack and Ryan (2006) survey Queensland government departments in Australia to determine the decision usefulness of accrual-based financial reports, and find that accrual accounting information is perceived as not useful for decision making by all users, including internal government central agencies and line departments. A negative

attitude towards accrual accounting for decision making is also found by Frank and Gianakis (2010), who conduct a national survey of local government chief financial officers from 407 municipalities in New Jersey, US. Pollanen and Loiselle-Lapointe (2012) conduct interviews with 10 senior government officials to investigate the adoption of accrual accounting in Canada, and also discover that the officials perceive accrual information as less useful and confusing for decision making, compared with cash accounting, leading to managers' preference for the old system of cash basis for decision making. In addition, Brusca and Montesinos (2013) analyse the usefulness of accrual accounting in the Spanish public sector by sending questionnaires to 130 local government managers, and discover that the main focus of accrual-based financial reports is accountability, rather than decision making, and cash-based budgets continue to be considered more useful by financial directors. Similar negative attitudes are also revealed by Jones and Puglisi (1997), Connolly and Hyndman (2006) and Paulsson (2006). Prior studies highlight a number of reasons for managers' negative attitudes towards the use of accrual accounting, including that it is less relevant for decision making, as profit and loss and financial position are not so critical in government departments (Jones and Puglisi 1997); it is an expensive and complex system (Connolly and Hyndman 2006); it is difficult to understand, compared with the cash system (Paulsson 2006; Pollanen and Loiselle-Lapointe 2012); and it provides little information for decision makers, as it is mainly used for accountability purpose, rather than decision making (Frank and Gianakis 2010; Brusca and Montesinos 2013).

In developing countries, prior public sector accounting studies focus primarily on the implementation issues of accrual accounting and do not examine managers' attitudes towards the use of accrual accounting for decision making. For example, Awasom (2018) investigates the drivers of accrual accounting adoption in the Cameroon local government. Ferry et al. (2018) examine the adoption of accrual accounting by the Malaysian government. Other studies examine the implementation of accrual accounting reform in Sri Lanka, Nepal, Bangladesh,

Pakistan and Egypt (Wang and Miraj 2018; Adhikari et al. 2019; Dissanayake et al. 2020; Lokuwaduge and De Silva 2020).

Taken together, the literature highlights that the attitudes of public sector managers towards the use of accrual accounting are mixed. Their attitudes could be influenced by their beliefs about whether accrual accounting is useful or not useful for particular decision situations, such as performance assessment or budgeting decisions. Their attitudes could also be shaped by their consideration of whether the benefit of using accrual accounting information outweighs the costs, including implementation costs. However, these studies do not specifically examine the relationship between managers' attitudes and their use of accrual accounting for different decision situations; hence, the effect of attitude on the use of accrual accounting for decision making needs to be investigated. The current study aims to fill this gap in research.

2.3.2 Stakeholder Pressures

Apart from managers' attitudes, prior public sector accounting research also examines the influence of stakeholder pressures on the adoption and use of accrual accounting (Barrett 1993; Pallot 1997; Brorström 1998; Ryan 1998; Christensen 2002; Mattison et al. 2004; McPhee 2006; Paulsson 2006; Jorge et al. 2007; Wynne 2007, 2008; Arnaboldi and Lapsley 2009; Pina et al. 2009; Rahaman 2009; Sharma and Lawrence 2009; Frank and Gianakis 2010; Buhr 2012; Liguori et al. 2012; Brusca and Montesinos 2013; McLeod and Harun 2014; Kobayashi et al. 2016; Eulner and Waldbauer 2018). The findings from these studies suggest that the use of accrual accounting particularly for decision making is influenced by a number of stakeholder groups.

In respect to government pressure, various studies highlight the significant pressure from the central government in the adoption of accrual accounting for government decision making (Pallot 1997; Mattison et al. 2004; Paulsson 2006; Jorge et al. 2007; Buhr 2012; Kobayashi et

al. 2016). For example, Jorge et al. (2007) emphasise the significant role of the government in the use of accrual accounting for decision making in the Portuguese public sector by promulgating the laws concerning the passage from a traditional (cash basis) system to a modern governmental accounting (accrual) system. Kobayashi et al. (2016) also find that accrual-based financial reporting and its use for decision making in the Japanese public sector are mainly triggered by pressure from the central government, which indicates a strong hierarchical relationship between central government and local governments.

With regard to pressure from the audit office or Supreme Audit Board, Ryan (1998) finds that the auditor-general is one of the main actors involved in the use of general purpose financial reports in the Australian public sector by promoting accrual accounting to improve government decisions on the allocation of resources and management performance. In this regard, the Commonwealth auditor-general (Barrett 1993; McPhee 2006) has emphasised the importance of accrual accounting for decision making in the Australian public sector. Wynne (2007, 2008) also stresses the importance of the National Audit Office in adopting accrual accounting in the UK, by providing recommendations and publishing reports regarding the benefits of accrual accounting for improving financial resources and assets and liabilities decisions. Similarly, Buhr (2012) suggests that the auditor-general was among the early advocates of accrual accounting in the New Zealand public sector, with the 1978 Shailes Report. In Europe, the involvement of supreme audit institutions as a relevant stakeholder of the European Public Sector Accounting Standards also played an important role in the implementation of accrual accounting to improve the quality of decision making (EUROSTAT 2013). However, Eulner and Waldbauer (2018) highlight that the supreme audit institution questioned the move from cash to accrual accounting in the German public sector from a cost–benefit perspective because of high resource-intensive change and expensive reform.

In the context of influence from the accounting profession, Mattison et al. (2004), Arnaboldi and Lapsley (2009), Pina et al. (2009) and Buhr (2012) find that the professional body of accountants influences the use of accrual accounting information, particularly for decision making, through their involvement in preparing accounting legislation and accrual accounting training. A recent article by Eulner and Waldbauer (2018) discusses the application of accrual accounting in the German public sector and concludes that the support from the German Institute of Public Auditors is important in using accrual accounting to handle public monies because it provides more comprehensive and relevant information to support complex decision making, compared with cash accounting.

Several studies suggest that social pressure from citizens influences the use of accrual accounting for decision making. Arnaboldi and Lapsley (2009) find that the use of accrual accounting by local government finance managers in Scotland is influenced by their belief in the need to comply with symbolic or formal tasks to be seen as legitimate to citizens. Similarly, Pina et al. (2009) discover that local governments' decisions to implement accrual accounting in European countries is related to the democratic demands of citizens for improved transparency and accountability. They highlight that accrual accounting is used to provide an image of modernisation and to secure constituents. That is, accrual accounting is used in the pursuit of legitimacy, instead of being based on a true interest in using accrual information for decision making. Likewise, Eulner and Waldbauer (2018) conclude that the public demands transparency and citizens have a vested interest in accrual accounting information, such as debts, to be borne by future generations, which cannot be provided by cash accounting.

In respect to pressure from the parliament or politicians, Liguori et al. (2012) find that politicians are in favour of and support accrual accounting in the Italian public sector to enhance their image as innovators and as a symbol of modernisation. According to Christensen (2002),

one of the stimuli for the use of accrual accounting information in the Australian public sector is politicians who encourage the adoption of accrual-based financial reporting in New South Wales. Nevertheless, Brorströım (1998) concludes that politicians have not interfered in the accrual accounting reform in the Swedish public sector. Other studies highlight the influence of accounting standard setters, consultants, international organisations and creditors, and best practice (benchmarks) from peer countries on the adoption of accrual accounting in the public sector and its use for decision making (Rahaman 2009; Sharma and Lawrence 2009; Frank and Gianakis 2010; Timoshenko and Adhikari 2010; Adhikari and Mellemvik 2011; Brusca and Montesinos 2013; McLeod and Harun 2014).

In Indonesia, prior studies on partial accrual accounting indicate that stakeholder pressure from international donor organisations (the World Bank/IMF) for more accountable and transparent government, as well as the intervention of the central government through the Ministry of Finance by issuing rules and regulations, are instrumental in accounting reform (Harun and Robinson 2010; Harun and Kamase 2012; Harun et al. 2012; Hassan 2015). In addition, Prabowo (2015) underlines the strong influence of the audit office during the transition from cash basis to accrual accounting in Indonesia by reminding the government to comply with the laws to implement accrual accounting without further delay.

In summary, the literature suggests that the use of accrual accounting is influenced by various groups of stakeholders. A group of stakeholders may have a strong influence on the use of accrual accounting in one country, yet not in other countries. In some countries, the use of accrual accounting information could be influenced by pressure from the central government and audit office. In developing countries, pressure from international donor organisations could determine the government's use of accrual accounting. While prior studies have highlighted various important stakeholders, little is known about the extent to which stakeholders' views

are important to managers in their consideration of whether to use accrual accounting for decision making. This study explores this aspect.

2.3.3 Implementation Barriers

In addition to managers' attitudes and stakeholder pressures, the prior literature highlights the importance of factors relating to the implementation of accrual accounting, which could inhibit the use of accrual accounting for decision making. Several key implementation issues have been highlighted by former auditors-general in Australia and Canada (Barrett 2004; OAG 2004; McPhee 2006). These include knowledge about accrual accounting; the availability of financial resources, including budget funds; leadership commitment; linking financial reporting to the budget; and the alignment of different financial reporting systems.

Accounting knowledge and training are important factors that facilitate the use of accrual accounting for decision making. Human resources with sufficient accounting knowledge play a huge role in accrual accounting reform. Training is needed to enhance accounting knowledge to make the reform successful in general and to increase the use of accrual accounting for decision making in particular, as Luder (1992) argues that accrual accounting training is required to improve the knowledge and skills of government officers, given that the lack of certain general skills in the accounting field may create implementation barriers that cause failure in the use of accrual accounting for decision making in the public sector. Similarly, Jones and Puglisi (1997) find that the ability to use accrual accounting information depends on the training given to staff and management. Guthrie (1998), Likierman (2000) and Mulgan (2000) share a similar view and argue for the importance of accrual accounting-related training to achieve formal accounting change and managerial decision making in the public sector to ensure that managers understand and are able to use accrual accounting information. The need to equip employees with accounting skills is also evident in other studies to ensure the

successful use of accrual accounting for decision making in the public sector (Athukorala and Reid 2003; Blöndal 2003; Caccia and Steccolini 2006; Connolly and Hyndman 2006; Cohen et al. 2007; Wynne 2007; Khan and Mayes 2009; Pina et al. 2009; Lande and Rocher 2011; Adhikari and Gårseth-Nesbakk 2016).

Another relevant consideration of accrual accounting is the cost to implement and use it, since demand for accrual information is limited by the availability of funds to implement a new system (Luder 1992). According to Connolly and Hyndman (2006), accrual accounting is an expensive system, and its successful implementation depends on the budget allocation to cover the new system (Boyne and Law 1991). Therefore, the availability of financial resources (budget allocation) is a major incentive in decision makers' ability to use accrual accounting for decision making (Luder 1992; Jones and Puglisi 1997; Athukorala and Reid 2003; Connolly and Hyndman 2006; Christensen 2007; Gårseth-Nesbakk 2011; Lande and Rocher 2011; Adhikari and Gårseth-Nesbakk 2016). In contrast, lack of financial resources to cover the costs of producing such reports can be a major constraint on decision makers' ability to use accrual information. Athukorala and Reid (2003), Connolly and Hyndman (2006) and Christensen (2007) find that implementing accrual accounting is expensive, which causes slow progress and impedes the use of accrual accounting for decision making. Similarly, Gårseth-Nesbakk (2011), Lande and Rocher (2011) and Adhikari and Gårseth-Nesbakk (2016) suggest that one of the prerequisites for applying accrual accounting for decision making in the public sector is the availability of financial resources. They contend that the high cost of accrual accounting means that some countries (such as Germany and Norway) tend to leave the traditional budget and accounting system unchanged.

A number of public sector accounting studies identify the need for leadership commitment and support from top management to use accrual accounting for decision making. Jackson and

Lapsley (2003) and Lapsley and Wright (2004) argue that government department managers sometimes resist change to accounting practices, and senior management can reduce the possibility of resistance by providing support during the implementation of a new system. These researchers suggest that a lack of senior management support during the implementation of accrual accounting may result in delays or even rejection of the accounting change. Ridder et al. (2006) contend that the top management, such as the chief financial officer, has the responsibility of successfully implementing a new system within the organisation by enhancing the awareness of managers and employees about the usefulness of accrual accounting for decision making. According to Khan and Mayes (2009) and Cavanagh et al. (2016), support from the highest level of management in the public sector organisation (such as the minister) is essential to endorse the accounting change and ensure that accrual accounting information is used for decision making.

The lack of adequate technologies and information systems within an organisation can be a main impediment to successful implementation of accrual accounting, which in turn prevents the use of accrual information for decision making. Based on experiences in various countries, the implementation of accrual accounting is accompanied by a major investment in information systems and equipment (Cavanagh et al. 2016). According to Khan and Mayes (2009), a new financial management information system is a prerequisite for the adoption of accrual accounting to cope with the increased complexity and reporting requirements. They recommend that governments implement accrual accounting with the aid of a modern government financial management information system. In the context of emerging countries, the adoption of accrual-based standards, such as the IPSAS, is used as an opportunity by public sector entities to install a new government financial management information system and upgrade their equipment (PWC 2012). Blöndal (2003) suggests that emerging countries should opt for commercial

software available on the market, instead of building their own information systems, given the potential problems and costs that may arise.

Another factor that can facilitate the use of accrual accounting for decision making is the existence of rules and regulations. Khan and Mayes (2009) highlight that establishing the appropriate regulations and guidelines is essential for successful adoption of accrual accounting, particularly for decentralised government organisations, where the detailed accounting and reporting processes will be consolidated to the central government. In the context of government organisations, accounting standards promulgated through laws are especially important in an accrual environment, since specific rules and regulations tightly prescribe the format and use of accrual accounting for decision making (Athukorala and Reid 2003; Blöndal 2003). In addition, previous studies suggest the existence of a familiarity effect—that is, managers or users who have gained experience with an accrual accounting system or have been exposed to the potential benefits of accrual accounting information, over time, tend to use accrual accounting for decision making, in contrast to those who are yet to learn about the system (Kober et al. 2010; Cohen et al. 2013; Kobayashi et al. 2016; Eulner and Waldbauer 2018).

The above discussion highlights the importance of factors relating to the implementation of accrual accounting, which could enable or inhibit the use of accrual accounting for decision making. While the above literature does not directly address managers' perceptions, the overall findings from these studies provide an indication of the potential impediments encountered by public sector managers, which potentially shape managers' perceptions of their ability to control their use of accrual accounting for decision making. Such barriers can arise not only from internal organisational factors—such as a lack of qualified accounting staff, insufficient financial resources, an inadequate information system and equipment, and the absence of top

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management support—but also from external factors, such as the need for accrual accounting standards, rules and regulations. In Indonesia, prior studies indicate that implementation problems during the transition from a cash to accrual accounting system—such as legal issues, a shortage of qualified accounting staff and a lack of penalties—have been the main barriers to the successful financial reform since 2003 (Harun and Robinson 2010; Harun and Kamase 2012; Harun et al. 2013; McLeod and Harun 2014). However, little is known about whether these issues remain following the implementation of full accrual accounting in 2015, and their implications for managers' sense of control over the use of accrual accounting.

2.3.4 Organisational Characteristics

Prior research in public sector accrual accounting has largely examined institutional factors in shaping accounting change, including the implementation of accrual accounting. These studies are largely informed by institutional theory, which underlines the significance of organisational structures, rules and routines for accounting change. Therefore, this section initially discusses the key aspects of the institutional perspective that underpin the role of organisational characteristics in shaping organisations' actions, and set the scene for reviewing the literature in relation to the role of organisational characteristics.

According to the institutional perspective, organisations exist in highly institutionalised contexts and the institutional environment can strongly influence the development of formal structures in an organisation (Meyer and Rowan 1977; DiMaggio and Powell 1983). Organisations facing institutional pressures are likely to conform to social expectations and norms to secure resources and maintain their legitimacy (Meyer and Rowan 1977; DiMaggio and Powell 1983; Tolbert and Zucker 1983; Scott 2014). To adhere to expectations, organisations tend to become homogenous or similar to each other in form and in practice.

These pressures towards institutional isomorphism are identified by DiMaggio and Powell (1983) as coercive, mimetic and normative forces.

Coercive pressures are defined as formal or informal pressures exerted on organisations by other organisations or powerful stakeholders upon which they are dependent and by cultural expectations from society (DiMaggio and Powell 1983). Coercive pressures are sometimes explicitly written as rules and sanctions, which regulate behaviour and force compliance through fear of sanctions for disobedience (Scott 2014). Mimetic pressures emerge under conditions of uncertainty and force organisations to imitate other successful organisations (DiMaggio and Powell 1983). In the case of accrual accounting in the public sector, mimetic pressures can be seen when some countries follow other countries that recognise accrual accounting as the best accounting practice for public sector entities (Baker and Rennie 2006), or developing countries that imitate the accounting system used in developed countries where its application has been successful. Alternatively, mimetic pressures can derive from internal adoption of the recommended accounting practices of other public sector entities (Frumkin and Galaskiewicz 2004; Ashworth et al. 2009). Normative pressures, associated with professionalisation, refer to pressures caused by collective expectations in a community (DiMaggio and Powell 1983). Normative pressures set shared values and norms for the appropriateness of organisations' behaviour among the members of their social networks. Organisations are more likely to adjust their behaviour based on the views of members in the same social context regarding the correct way to act (DiMaggio and Powell 1983).

While institutional theory suggests that organisations conform to institutional pressures, it is criticised by Oliver (1991) for its inability to elaborate on organisations' responses to institutional pressures. Oliver argues that organisations vary in their response to institutional environment, and may comply with or resist institutional pressures. For example, organisations

subject to higher levels of legal coercive pressures are likely to conform to the legal requirements because the consequences of non-compliance could be severe. In contrast, where institutional enforcement is weaker, organisations may tend to compromise. In addition, organisations facing higher levels of environmental uncertainty are likely to imitate other organisations, and tend to be less resistant to institutional pressures in order to attain stability in their future operations.

Meyer and Rowan (1977) argue that there is a distinction between the formal structure of institutions or practices and their actual day-to-day activities. Organisations are driven to adopt practices or routines to achieve legitimacy. However, the actual activity may be decoupled from the formal structure. The reason for the gap between the formal structure and actual activity is because of conflicts between the institutionalised pressures and the actual needs of the organisations. Thus, the formal structure serves as a powerful institutionalised myth for legitimacy purpose. Other studies in the public sector (e.g. Carpenter and Feroz 2001; Frumkin and Galaskiewicz 2004; Ashworth et al. 2009; Curristine et al. 2007; Dolnicar et al. 2008) also highlight that organisations subject to different levels and types of institutional pressures are likely to react in different ways. As such, the above studies suggest that institutional pressure is likely to shape various organisational characteristics, which may affect organisational practices. The role of organisational characteristics is discussed in the next section.

2.3.4.1 Role of Organisational Characteristics

Various public sector studies have examined the effect of organisational factors on organisational behaviour and practices (e.g. Frumkin and Andre-Clark 2000; Hooijberg and Choi 2001; Curristine et al. 2007; Willem and Buelens 2007; Moynihan and Pandey 2010; Van de Walle and Van Dooren 2010; Bysted and Hansen 2015). These studies suggest that organisational behaviour and practices are influenced by various organisational factors,

including leadership role (Hooijberg and Choi 2001), decentralisation, workforce structure, size, procedures (Curristine et al. 2007), coordination mechanisms (formal, informal and lateral structures), social identification, trust (Willem and Buelens 2007), autonomy, expectancy clarity, room for innovation (Bysted and Hansen 2015), goal clarity, executive status (George et al. 2019), structure, culture and strategy (Frumkin and Andre-Clark 2000; Curristine et al. 2007; Moynihan and Pandey 2010; Van de Walle and Van Dooren 2010). Of particular relevance to this thesis are studies that examine organisational characteristics, including structure, culture and strategy, which are linked to institutional influences and organisational behaviour.

Prior public sector administration studies have investigated the role of organisational characteristics in relation to institutional pressures and organisational practices and behaviour (Frumkin and Galaskiewicz 2004; Ashworth et al. 2009; Dolnicar et al. 2008; Andrews 2011; Dimitrijevska-Markoski and French 2019; George et al. 2019). Some studies examine the degree of institutional influences on organisational characteristics (e.g. Ashworth et al. 2009; Andrews 2011). Based on data from standardised Public Expenditure and Financial Accountability assessments in 31 African countries, Andrews (2011) indicates that some peripheral organisational characteristics (such as upstream budget execution, de jure practices and concentrated interventions) are amenable to institutional pressure, whereas other organisational attributes (such as downstream budget execution, de facto practices and de-concentrated interventions) are more unsusceptible to institutional pressure. Likewise, Ashworth et al. (2009) conclude that the effect of institutional pressures on organisational characteristics differs across organisations. Some organisational characteristics, such as organisational culture and strategy, may be more resistant to institutional pressures because they represent the organisation's core identity and value system. In contrast, other organisational characteristics, such as structure and process, may be less resistant to

institutional pressures because they are considered peripheral attributes of the organisations. The findings from Ashworth et al. (2009) suggest that institutional pressures influence organisational characteristics (structure, culture, process and strategy) in a different way.

Other studies examine the effect of organisational characteristics on organisational practices and behaviour under institutional pressure (e.g. Frumkin and Galaskiewicz 2004; Dolnicar et al. 2008; Dimitrijevska-Markoski and French 2019; George et al. 2019). Frumkin and Galaskiewicz (2004) suggest that not all organisations respond to institutional pressure in the same way, depending on their organisational characteristics, such as structures, strategies and processes. Using data from the National Organizations Study in the US, they conclude that government organisations are more vulnerable to institutional forces because their decision-making structures are more bureaucratised and centralised. Similarly, using qualitative and quantitative data from Bushcare New South Wales, Dolnicar et al. (2008) find that organisations in Australia choose a variety of responses to institutional pressures, depending on their organisational culture, structures and routines. In a recent study, Dimitrijevska-Markoski and French (2019) evaluate the determinants of the use of performance information by local government administrators in the US. They find that the institutionalisation of performance measurement into the rules, procedures and routines of an organisation affects the use of performance information for decision-making purposes. George et al. (2019) also find that organisational practices in the public sector differ depending on organisational characteristics.

In addition to the above studies investigating the role of organisational characteristics on organisational behaviour, Pillay et al. (2017) examine the effect of institutional pressures on whistle-blowing intention and the relationship between organisational culture and whistle-blowing in public sector organisations. They find that institutional pressures shape whistle-blowing intention, while organisational culture constrains whistle-blowing intention. This

finding is comparable with those of private sector studies regarding the influence of organisational characteristics on individuals' and organisations' intentions and the moderating effects of organisational characteristics (e.g. structure, culture and strategy) on the intention–behaviour relationship (Teo et al. 2003; Son and Benbasat 2007; Liu et al. 2010).

Overall, prior public sector administration studies suggest that organisational characteristics, such as structure, culture and strategy, play a role in influencing organisational behaviour. While these studies are not conducted in the public sector accrual accounting context, they provide insight into the role of organisational characteristics when applied to the accounting context.

A limited number of public sector accounting studies examine the effect of organisational characteristics on organisational response to accounting change (e.g. ter Bogt and van Helden 2000; Carpenter and Feroz 2001). An early study by ter Bogt and van Helden (2000) provides a framework to explain accounting change in the Dutch government. They suggest that institutional pressures to use accrual accounting influence organisational characteristics (such as organisational structure, culture, strategy and process), which could influence organisations' action to use accrual accounting. They argue that organisations' responses to the accounting change pressure could be influenced by organisational structures, such as the existing rules and procedures, and suggest that 'if the participants in an organization are satisfied with the existing rules (standard operating procedures), there will be no incentive to change' (ter Bogt and van Helden 2000, p. 272). Further, organisational culture, which refers to employees' mindset, beliefs and values, is 'beneficial to workers' motivations and commitment, and ultimately to the performance of the organization' (ter Bogt and van Helden 2000, p. 271). In addition, the development of strategy and increased attention to the change process are necessary to avoid

the gap between the ideal concept of formal accounting change and its actual application (ter Bogt and van Helden 2000).

Carpenter and Feroz (2001) investigate the influence of institutional pressures on the US government's decision to use accrual accounting for financial reporting in the four states of New York, Michigan, Ohio and Delaware. Using Oliver's (1991) strategic response model, they find that the state governments are subject to institutional pressures, and organisational factors—such as organisational politics, financial condition and participation in accounting professional organisations—can significantly influence the states' decisions to adopt or resist the use of accrual accounting for decision making.

In summary, prior studies highlight that organisations subject to different levels and different types of institutional pressures are likely to react in different ways. The findings from these studies suggest that institutional pressures can have a diverse effect on organisational characteristics, such as structure, culture and strategy, which can shape organisational behaviour. These studies largely focus on the organisational level and there are limited studies examining the influence of organisational characteristics on individual managers' action in the public sector. Little is known about how organisational characteristics influence managers' intention to use accrual accounting for decision making and actual use. This thesis seeks to address this gap.

2.4 Summary of Review

This chapter reviews prior research examining the use of accrual accounting for decision making in the public sector, and the factors that may influence its use by decision makers. Despite the importance of accrual accounting information in the public sector, previous studies find a gap between the formal requirements of accrual accounting and its actual implementation,

and its use for decision making is minimal compared with the time and money invested. These studies also focus on developed countries, while empirical research on developing countries is scarce. Further research on the factors influencing the use of accrual accounting for decision making has been suggested by prior literature to better understand which factors may drive the use of accrual accounting for decision making. In addition, there has been no empirical research examining the extent to which accrual accounting is used by Indonesian managers for decision making and the factors influencing its use, particularly at the central government level.

Insights into the potential factors influencing the use of accrual accounting for decision making in the public sector is drawn from prior research focusing on factors influencing accounting changes. This literature is largely conducted in a piecemeal fashion and does not integrate different factors to shed light on managers' use of accrual accounting for decision making. The majority of studies focus on institutional factors, which emphasise the importance of organisational routines and institutional rules in shaping processes of accounting change. However, little attention is devoted to developing an analytical framework of the individual factors that influence the use of accrual accounting for decision making. While various studies focus on the effect of institutional pressures on organisational characteristics, there is limited research on how organisational characteristics may influence managers' use of accrual accounting for decision making. Also absent from the literature is empirical evidence of the effects of both individual factors and organisational characteristics on the use of accrual accounting for decision making in the public sector. Thus, this thesis seeks to extend prior literature by developing an analytical framework to empirically examine the factors that influence the use of accrual accounting for decision making in the public sector by incorporating individual and organisational influences through the use of the TPB and literature on the role of organisational characteristics. This framework is discussed in the next chapter.

Chapter 3: Theoretical Framework and Hypotheses Development

3.1 Introduction

This chapter presents the theoretical framework of this thesis and develops the research hypotheses related to the factors that affect the use of accrual accounting for decision making. Chapter 2 reviews the prior research on the implementation of accrual accounting for the public sector, suggesting a gap between the government expectations of accrual accounting and its actual use for decision making. As discussed in Chapter 2, research has not provided much evidence on the factors affecting the limited use of accrual accounting by decision makers. To understand the factors that affect the use of accrual accounting for decision making, this thesis uses the TPB as the theoretical lens of this study and combines it with organisational characteristics drawn from public sector accounting and administration literature. The TPB is adopted to examine how individual factors influence the use of accrual accounting for decision making, and the theoretical concepts of organisational characteristics enrich the analysis by exploring how the organisational environments in which government managers are working may influence their actions. The incorporation of the TPB and organisational factors in this study is extended by examining the additional variables of accrual accounting knowledge, the usefulness of accrual accounting for decision making and location-related differences between organisations. These additional variables are explained in Chapter 4.

This chapter is organised as follows. Section 3.2 discusses the justification for adopting the TPB and integrating it with organisational characteristics. Section 3.3 describes the TPB, which provides a framework to explain individuals' intention to engage in a given behaviour based on three components: their attitudes towards the behaviour, their perceptions of stakeholder pressures and their perceived control over the behaviour. The TPB further suggests that these

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three components are a function of individuals' underlying beliefs related to behaviour—namely, behavioural, normative and control beliefs (Ajzen 1991). The discussion of the TPB leads to the development of Hypothesis 1. Section 3.4 discusses organisational characteristics and explains how these characteristics may influence managers' intentions and actions, leading to the development of Hypotheses 2a and 2b. The final section concludes the chapter.

3.2 Justification for Adopting the Theory of Planned Behaviour and Its Integration with Organisational Factors

There are several justifications for adopting the TPB and integrating it with organisational characteristics to examine the research question for this thesis. First, prior studies mainly use institutional theory to explain how organisations develop and apply new accounting methods (i.e. accrual accounting), which highlights the importance of organisational routines and institutions in shaping the process of accounting change (e.g. ter Bogt and van Helden 2000; Burns and Scapens 2000; Caccia and Steccolini 2006; Pina et al. 2009; Cohen et al. 2013). However, public sector accounting research has been criticised for lacking a solid theoretical basis to explain the lag in the current implementation of accrual accounting across countries (Bergmann et al. 2019). Bergmann et al. (2019, p. 560) comment that '[s]o far, most researchers have drawn from various streams of theoretical perspectives with often unsatisfactory results'. These theories include institutional theory, accountability theory, new public management theory and critical theory. Therefore, there is a need for a new theoretical base (Jacobs 2016; Bergmann et al. 2019). In adopting the TPB, this study responds to Bergmann et al.'s (2019) call for the use of new theoretical approaches in public sector accrual accounting research by integrating the TPB with organisational factors. Drawing from this integrated perspective, this study examines the effects of both individual and organisational factors on managers' behaviours towards using accrual accounting for decision making. The TPB can explain the

underlying motivations behind managers' use of accrual accounting, whereas organisational factors provide the context in which individual managers are acting.

Second, the TPB is one of the leading theoretical models for predicting and explaining behaviour (Ajzen 2011; Fishbein and Ajzen 2011). Past studies highlight the applicability of the TPB to predict managers' behaviour in various contexts of business decision making.[9] The TPB suggests that individuals' behaviour is influenced by their intention to perform the behaviour, and their intention is driven by three factors: their attitudes, their perceptions of stakeholder expectations and their sense of control over their behaviour. The theory's focus on individuals' intention and behaviour is relevant to investigating the individual factors influencing managers' behaviour in using accrual accounting for decision making. Managers' sense of control could be a relevant factor, given the need for the requisite skills and resources to use accrual accounting to perform their tasks (i.e. perceived behavioural control). Its attitude variable captures managers' consideration of the expected costs and benefits of using accrual accounting for their decision making. Additionally, this study investigates the decision processes that occur in a constrained environment where social variables—such as the pressure felt from social referents or stakeholders (e.g. the audit office, central government and parliament)—are also salient. Thus, managers' perceptions of stakeholders' pressure could also be an important factor. A number of studies in the public sector use the TPB as a theoretical framework to investigate various topics, including the use of performance information (Moynihan and Pandey 2010; Kroll 2015), whistle-blowing intention (Pillay et al. 2017) and

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[9] These business decisions include investment decisions (East 1993; Cucinelli et al. 2016), corporate environmental preferences (Cordano and Frieze 2000; Flannery and May 2000), management accounting control changes (Glandon 2003), fraudulent financial reporting (Carpenter and Reimers 2005), incorporation of ethics codes into strategic decision making (Stevens et al. 2005), company internalisation (Sommer 2011) and sustainability reporting (Thoradeniya et al. 2015).

training participation (Ho et al. 2011), thereby suggesting the applicability of the TPB to public sector research.

Third, the TPB is open to the inclusion of additional variables that may increase the predictive efficacy of the model (Ajzen 1991). As with any framework, there are limitations and it is accepted that the TPB model is not likely to account for all determinants of intentions and behaviour (Armitage and Conner 2001). Drawing on prior relevant studies, organisational characteristics (ter Bogt and van Helden 2000; Ashworth et al. 2009) and other variables— including accounting knowledge (Ajzen 2005, 2011), the usefulness of accrual accounting information (e.g. Kober et al. 2010) and location-related differences (Cooper and Robson 2006; Spanos 2019)—could be additional factors that may improve the efficacy of the TPB model to explain and predict managers' use of accrual accounting for decision making.

Fourth, organisational characteristics are found by previous studies to be a significant factor affecting the degree of institutional influence on organisational practices in public sector organisations (Carpenter and Feroz 2001; Frumkin and Galaskiewicz 2004; Andrews 2011; George et al. 2019). In particular, past studies find that institutional pressures influence organisational characteristics (ter Bogt and van Helden 2000; Ashworth et al. 2009) and organisational characteristics influence organisational practices (Hooijberg and Choi 2001; Willem and Buelens 2007; Moynihan and Pandey 2010; Bysted and Hansen 2015). While these studies focus on the organisational level, rather than individual managers' behaviour, prior research in the private sector provides some insight that organisational characteristics influence managers' behavioural intention and moderate the relationship between managers' intention and behaviour (Teo et al. 2003; Son and Benbasat 2007; Liu et al. 2010). Given that Indonesian public sector organisations are subject to institutional influence, and in light of the above studies, integrating organisational characteristics with the TPB is relevant to explore the factors

that may influence managers' use of accrual accounting for decision making in the Indonesian public sector.

Fifth, prior studies in the Indonesian context mainly focus on institutional theory as a theoretical lens to examine the adoption and implementation of the partial accrual accounting system (Harun and Kamase 2012; Harun et al. 2012; Prabowo et al. 2017; Mir et al. 2019). The findings from these studies suggest that institutional pressures play a role in shaping the adoption of partial accrual accounting in local governments, and there is an indication of limited use of partial accrual-based reports for decision making. However, little is known about the factors affecting the low level of use, and how individual and organisational factors might influence the use of accrual accounting for decision making by managers in Indonesia. The use of the TPB and concepts of organisational characteristics enable this study to address this issue.

3.3 Theory of Planned Behaviour

The TPB provides a framework that explains individuals' intention to engage in a behaviour based on their attitudes towards the behaviour, their perceptions of stakeholder pressures and their perceived control over the behaviour. The TPB is a well-established social-psychological theory that has been supported by empirical research (Ajzen 2011). It is one of the most influential and widely-cited models used to understand intentions and behaviours, and has been adopted in various disciplines to study the determinants of human behaviour in a wide range of situations (Armitage and Conner 2001).

The TPB posits that an individual's behaviour is driven by his or her intention to perform the behaviour (Ajzen 2005). The TPB is the successor of the theory of reasoned action (TRA). According to the TRA, intention is influenced by two independent components: attitude towards the behaviour and subjective norm (Fisbein and Ajzen 1975; Madden et al. 1992).

Attitude towards the behaviour refers to the individual's attitude towards performing the behaviour, while subjective norm refers to perceived stakeholder pressure to perform the behaviour. The TPB extends the TRA by including another factor that may influence intention and would increase its predictive ability. This factor is perceived behavioural control (PBC), which refers to an individual's perception of his or her ability to enact the desired behaviour. The TPB considers that individuals may not have complete control over their behaviour. As such, the PBC is added to the TPB to cover non-volitional (not a matter of free choice) control over the behaviour of interest, whereas the TRA is applicable to predict a behaviour that is entirely volitional (free choice). The combination of these three components (attitude towards the behaviour, subjective norm and PBC) forms the key features of the TPB, with intention as a mediator between these three factors and behaviour.

The TPB further suggests that these three components are a function of an individual's underlying beliefs relevant to behaviour (Ajzen 1991, 2005). A person's attitude towards behaviour is determined by his or her behavioural belief, which is belief about the consequences of the behaviour. Normative belief refers to belief about the normative expectations of others in engaging in the behaviour, and is the underlying belief of subjective norm. Control belief, as the antecedent of PBC, is defined as belief about the existence of factors that may enable or inhibit performance of the behaviour. Figure 3.1 presents the relationship between attitude, subjective norm, PBC, intention and behaviour in the TPB.

As illustrated in Figure 3.1, intention is theoretically an antecedent of behaviour in the TPB model. The TPB posits an intrinsic association between behavioural belief and attitude, normative belief and subjective norm, control belief and PBC. In combination, attitude, subjective norm and PBC are proximal determinants of a person's intention to perform a

particular behaviour. To better understand the effects of these interactions on actual behaviour, it is necessary to explore each component of the TPB below.
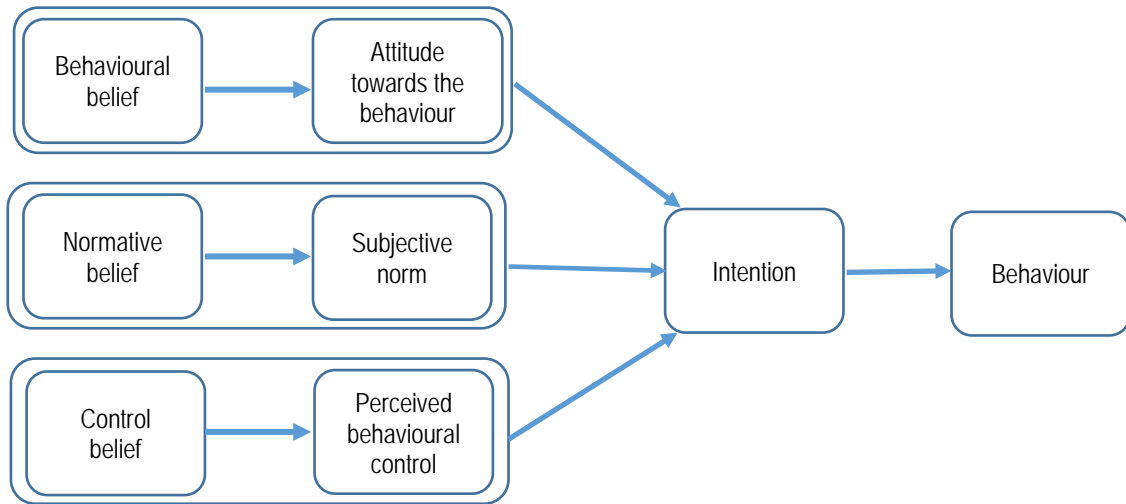

Figure 3.1: Theory of Planned Behaviour

Source: Adapted from Ajzen (2005).

3.3.1 Attitude and Behavioural Belief

Attitude is defined in the TPB as the perceived positive or negative evaluation of performing a behaviour (Ajzen 1991, 2005). The more positive the attitude, the stronger the intention to engage in a specific behaviour. Likewise, a person is less likely to perform a particular behaviour if she or he has a negative attitude towards the behaviour. Attitude can be categorised as instrumental (whether the behaviour achieves something, such as being worthwhile or useless) and experiential (how it feels to perform the behaviour, such as being pleasant or unpleasant) (Fishbein and Ajzen 2011; Ajzen n.d.-a).

Underlying the construct of attitudes is a person's behavioural belief about the likely outcomes of behavioural performance (behavioural belief strength) and the person's positive or negative evaluation of these outcomes (outcome evaluation) (Fishbein and Ajzen 2011). The stronger the behavioural belief (i.e. the greater the likelihood that a certain behaviour will produce a

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given outcome) and the more favourable the outcome, the stronger the effect of the behavioural belief on the attitude. To illustrate, a manager who believes that accrual accounting will improve the accuracy of his or her decision making would be more likely to evaluate positively the behavioural performance of using accrual accounting for decision making. In contrast, a manager who believes that accrual accounting will not improve the accuracy of his or her decision making would be more likely to hold a negative attitude towards the use of accrual accounting for decision making.

3.3.2 Subjective Norm and Normative Belief

The second construct underpinning intention is subjective norm. Subjective norm represents the individual's perception that important others think she or he should perform a given behaviour (Ajzen and Fishbein 1980). Depending on the behaviour in question, in professional fields, important others may be job supervisors, colleagues, employees or other stakeholders (Ajzen 2011). When an individual perceives that important others think she or he should engage in a behaviour, the individual is more likely to do so. Subjective norm can be classified into two different forms: what important people think a person should do (injunctive norms) and what important people actually do (descriptive norms) (Fishbein and Ajzen 2011; Ajzen n.d.-a).

Subjective norm is determined by the individual's normative belief concerning the likelihood that specific people or groups who are important to her or him would approve or disapprove of the behaviour (normative belief strength) and the extent to which the individual is motivated to comply with significant others (motivation to comply) (Fishbein and Ajzen 2011; Ajzen n.d.-a). For example, a manager may feel pressure to use accrual accounting for decision making because of her or his supervisors. While the manager's perception of this pressure from supervisors (normative beliefs strength) may be high, if she or he has little motivation to comply

with the referent (supervisors), theoretically, she or he will be less likely to use accrual accounting for decision making. Conversely, if she or he has high motivation to comply, it is more likely that such normative beliefs would influence the manager's intention and behaviour.

3.3.3 Perceived Behavioural Control and Control Belief

The third construct of the TPB is PBC. PBC is defined as a person's perception of how easy or difficult it is to perform a particular behaviour, and is used as a substitute for a measure of actual control (Ajzen 1991). In other words, PBC is about people's perceptions of how much control they have over the performance of behaviour. There are two aspects in PBC: capacity and autonomy (Fishbein and Ajzen 2011; Ajzen n.d.-a). Capacity reflects an individual's perceived difficulty and confidence in performing the behaviour, while autonomy is about the extent of control a person has to perform the behaviour.

PBC is a function of control belief of the likelihood that a factor that facilitates or prevents behaviour will occur (control belief strength) and the perceived power of the factor to actually facilitate or prevent the performance of a behaviour (control belief power) (Fishbein and Ajzen 2011; Ajzen n.d.-a). Thus, PBC is determined by the belief that certain factors can facilitate or impede the behaviour. These factors include internal factors (skills and abilities) and external factors (opportunities and barriers). For instance, a manager's PBC can be determined by her or his perceived availability of financial resources (belief strength) and the importance of financial resources for her or him in using accrual accounting for decision making (belief power). Additionally, a manager's understanding of accrual accounting can also have an effect on PBC, which is determined by her/his perception of the strength of accrual accounting knowledge and how important accrual accounting knowledge is for decision making.

3.3.4 Intention and Behaviour

Intention is an individual's perceived likelihood of performing a given behaviour in a certain timeframe and is determined by attitude towards the behaviour, subjective norm and PBC (Ajzen and Fishbein 1975, 1980). Based on the TPB, an individual's intention to perform a given behaviour is the immediate determinant of that behaviour and is considered a highly significant predictor of future behaviour (Ajzen 2005). Intention mediates the effect of attitude, subjective norm and PBC on behaviour. As a general rule, the more favourable the attitude towards the behaviour, the higher the subjective norm, and, the greater the PBC, the stronger an individual's intention to perform the behaviour and subsequent behavioural action.

Prior literature emphasises managers' attitudes towards the use of accrual accounting for decision making in the public sector, which could be affected by their beliefs in the usefulness of accrual accounting for particular decision contexts (Andriani et al. 2010; Kober et al. 2010; Kobayashi et al. 2016; Nogueira and Jorge 2017). Previous studies also highlight the influence of stakeholder pressures on the adoption of accrual accounting in the public sector, which could be exerted by the central government, audit office and accounting professions (Buhr 2012; Brusca and Montesinos 2013; Eulner and Waldbauer 2018). Through applying such reasoning to individual managers, it can be argued that managers' beliefs about important stakeholder expectations underpin their perceptions of the level of stakeholder pressures, which could influence their intention to use accrual accounting. Other studies address the implementation problems of accrual accounting in the public sector, such as lack of accounting knowledge and inadequate financial resources, which could inhibit the use of accrual accounting for decision making (e.g. Lande and Rocher 2011; Adhikari and Gårseth-Nesbakk 2016). While this literature does not directly address managers' perceptions, the overall findings from these studies indicate the potential impediments encountered by public sector managers, which

potentially shape managers' perceptions of their ability to control their use of accrual accounting for decision making.

In the Indonesian context, application of the TPB could be relevant to investigating managers' use of accrual accounting for decision making. As aforementioned, the delay in the implementation of accrual accounting in the Indonesian public sector from its initial target of 2008 to 2015 may be associated with managers' resistance to change to a new accounting system (Harun and Robinson 2010; McLeod and Harun 2014) and their perceptions of the low level of usefulness of partial accrual accounting reports for decision making (McLeod and Harun 2014; Prabowo et al. 2017; Mir et al. 2019). Other studies on the drivers of the adoption of accrual accounting in Indonesia highlight the pressures from international financing organisations, such as the World Bank and IMF, for increased government accountability; the intervention of the central government by issuing rules and regulations to comply with; and the strong influence of the audit office during the audit process, findings and opinions (Harun and Robinson 2010; Harun and Kamase 2012; Harun et al. 2012; Hassan 2015). Others outline the implementation problems during the adoption of the partial accrual accounting system, such as a lack of accounting knowledge and shortage of qualified accounting staff (Harun and Robinson 2010; Harun and Kamase 2012; Harun et al. 2013; McLeod and Harun 2014). These studies highlight the potential factors that may be associated with managers' attitudes, perceptions of stakeholder pressure and ability to control the use of accrual accounting for decision making.

Taken together, these studies highlight that managers' attitudes, managers' expectations about stakeholders' views and the factors that may facilitate or hinder managers' abilities to use accrual accounting may be important considerations to public sector managers that could influence their use of accrual accounting for decision making. Drawing on the public sector accounting literature above and the TPB's reasoning that individuals' intention to engage in a

behaviour plays a role in mediating various individual factors and the performance of a behaviour, the first hypothesis is proposed:

H1: Public sector managers' attitudes, perceptions of stakeholder pressures and perceived behavioural control, mediated by their intention, influence the managers' use of accrual accounting for decision making.

3.4 Organisational Characteristics

As with other theories, the TPB has limitations and does not account for all determinants of intention and behaviour. Considering the complexity in explaining intention and behaviour, the addition of other behavioural determinates may improve the efficacy of the model to explain and predict behaviour (Armitage and Conner 2001). One of the advantages of adopting the TPB as a framework is that it is open to additional variables if they can capture a significant portion of variance in intentions or behaviours after the theory's current variables have been considered (Ajzen 1991). As a consequence, a number of predictors have been introduced into the framework of the TPB.[10] To increase the efficacy of the TPB model to explain intention and behaviour, extensions have been made to the original model in the present study.

A major addition to the model in this thesis is organisational characteristics. This thesis adapts the organisational characteristics identified by Ashworth et al. (2009): structure, culture and strategy. Ashworth et al. (2009) suggest that the level of institutional influence is typically visible in these organisational characteristics, and argue that institutional pressures are expected to influence whole organisational fields; hence, the effect of institutional pressures would be

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[10] In the context of business decision making, the additional variables include past behaviour/experience (East 1993; Cordano and Frieze 2000; Cucinelli et al. 2016); personal norm (East 1993); financial literacy (Cucinelli et al. 2016); moral intensity and moral obligation (Flannery and May 2000); organisational size and accounting information system complexity (Glandon 2003); ethics code (Stevens et al. 2005); and background factors, such as managers' education and religion (Thoradeniya et al. 2015).

evident across all these organisational characteristics. Based on this argument, this study initially hypothesises the influence of organisational characteristics as one variable affecting public sector managers' intention and behaviour. Further analysis of each component of organisational characteristics (structure, culture and strategy) is then undertaken to identify the types of organisational characteristics that are more likely to influence managers' intention and behaviour. Each of the organisational characteristics used in this thesis is explained below.

Organisational structure outlines how organisations' rules are directed towards the achievement of organisational goals (Ashworth et al. 2009). Ashworth et al. (2009) argue that structure is more open to institutional pressures because it represents the peripheral attributes of an organisation, which is loosely coupled with the organisation's identity and values. Following Ashworth et al. (2009), in this study, organisational structure is reflected by written procedures in guiding the actions of employees in an organisation, particularly in using accrual accounting.

Organisational culture refers to the shared values and beliefs that contribute to the environment of an organisation (Barney 1986). According to Ashworth et al. (2009), culture can reflect institutional influences in two different ways. First, culture is relatively impervious to institutional pressures because it represents the core attributes of an organisation, which are less amenable to change. Second, Ashworth et al. (2009) find that culture displays a high level of compliance with institutional pressure in the UK public sector, thereby suggesting that culture could also reflect institutional influence. Following Ashworth et al. (2009), in this study, organisational culture is determined by employees' beliefs and perceptions regarding accrual accounting, and employees' norms conveyed through the accrual accounting education and training.

Organisational strategy is a strategic plan that specifies priorities and direction towards the realisation of an organisation's goals (Andrews et al. 2005). Ashworth et al. (2009) classify

strategy into strategy process and strategy content. Strategy process involves detailed planning and formulation of strategies, and may involve negotiation with stakeholders. Strategy content relates to the way activities are delivered. It is argued that institutional pressure is visible in organisational strategy (Ashworth et al. 2009). Following Ashworth et al. (2009), in this study, organisational strategy is determined by the development of a strategic plan to support accrual accounting.

Numerous studies in the private sector conclude that organisational characteristics influence organisational intention and moderate the relationship between organisational intention and behaviour (e.g. Teo et al. 2003; Delmas and Toffel 2004; Son and Benbasat 2007; Liu et al. 2010; Delmas and Toffel 2012; Colwell and Joshi 2013; Sadler 2016; Wijethilake et al. 2017; Shubham et al. 2018). However, prior research examining the influence of organisational characteristics on the use of accrual accounting is limited. Insight can be drawn from the public sector accounting and administration literature, which explores the link between organisational characteristics and organisational behaviour. Prior public sector studies suggest that organisational characteristics influence organisational behaviour (e.g. Frumkin and Andre-Clark 2000; ter Bogt and van Helden 2000; Carpenter and Feroz 2001; Hooijberg and Choi 2001; Curristine et al. 2007; Willem and Buelens 2007; Dolnicar et al. 2008; Moynihan and Pandey 2010; Andrews 2011; Bysted and Hansen 2015; George et al. 2019). Further, Pillay et al. (2017) suggest that organisational characteristics influence behavioural intention, in that organisational culture constrains whistle-blowing intention.

In the context of accounting change, ter Bogt and van Helden (2000) indicate that organisational behaviour, including decision making, could be conditioned by organisational structure, such as rules and operating procedures. Actual accounting change could also depend on organisational culture, such as employees' beliefs and values, and organisational strategy, such

as medium-term plans developed to reduce the gap between the ideal concept of formal accounting change and its actual application. Similarly, Carpenter and Feroz (2001) find that governments' decisions to adopt a new accounting practice are influenced by organisational strategy and culture.

In Indonesia, the influence of organisational characteristics on organisational behaviour can be observed from prior studies examining the adoption of partial accrual accounting. For example, Indonesian public sector organisations are considered highly institutionalised institutions with formal and rigid bureaucratic structures and strong involvement of central government (e.g. Harun and Kamase 2012; Harun et al. 2012; Harun et al. 2013), which could force public sector entities to use accrual accounting for accountability purposes to achieve better audit opinions for financial reports, rather than for decision making. Lack of coherent strategy during the implementation of partial accrual accounting (Harun and Robinson 2010) could also hinder the use of accrual accounting for decision making. Additionally, traditions and culture (based on a cash-based system) present long before accrual accounting (Harun et al. 2012) could hamper the use of accrual accounting for decision making in the Indonesian public sector. These studies highlight that organisational characteristics provide an important environment in which managers may consider whether to use accrual accounting for decision making.

Drawing on the above studies, it can be argued that the extent of individual managers' intention to use and actual use of accrual accounting could be conditional on organisational characteristics. Extending this argument to Indonesian public sector managers' behaviour, it is expected that Indonesian public sector managers' intention to act and the extent to which they put their intention into action may differ depending on their organisational characteristics, and the following hypotheses are proposed:

H2a: Organisational characteristics (namely structure, culture, and strategy) influence public sector managers' intention to use accrual accounting for decision making.

H2b: Organisational characteristics moderate the relationship between public sector managers' intention to use accrual accounting for decision making and their actual use.

Figure 3.2 illustrates the proposed conceptual framework of the use of accrual accounting for decision making, based on Ajzen's (2005) TPB combined with organisational characteristics, to examine the factors influencing managers' use of accrual accounting for decision making.
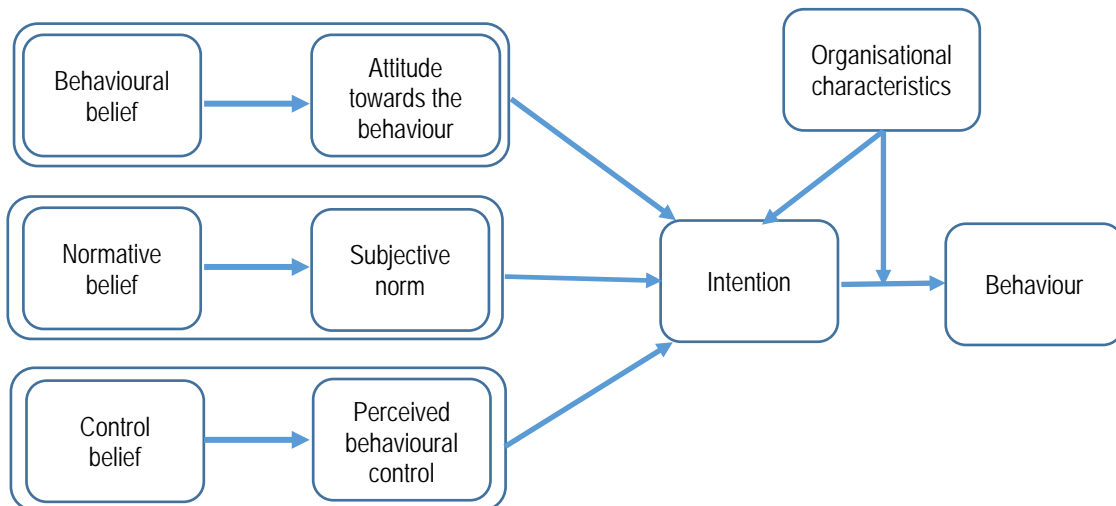

Figure 3.2: Conceptual Framework of the Use of Accrual Accounting for Decision Making

Source: Based on Ajzen (2005).

3.5 Chapter Summary

This chapter discusses the theoretical framework of the TPB and the literature on organisational characteristics used in this study to understand the individual and organisational factors that may influence managers' intention and behaviour towards using accrual accounting for decision

making. The TPB is a well-established theory in explaining and predicting human behaviour. The incorporation of the TPB and organisational characteristics shows the complementary nature of the individual and organisational factors influencing managers' use of accrual accounting for decision making. The TPB can explain the underlying motivations behind managers' use of accrual accounting for decision-making behaviours, while the organisational characteristics can provide the organisational context in which the individual managers are acting. The hypotheses of the study are developed based on the TPB framework and the role of organisational characteristics in managers' intention and behaviour. The next chapter discusses the research method used to collect data in this thesis.

Chapter 4: Research Method

4.1 Introduction

This chapter outlines the research method used to collect data and test the research hypotheses. This study employs a mixed-methods research approach. In doing so, data are collected using interviews and a questionnaire survey. The remainder of this chapter proceeds as follows. Section 4.2 describes the mixed-methods research design employed in this research. Section 4.3 discusses the interview design, including the development of the semi-structured interview protocol, data collection during interviews and use of computer-aided qualitative data analysis software. Section 4.4 discusses the questionnaire design, including the development of the questionnaire instrument, survey data collection, respondents' demographic information and use of the partial least squares method to analyse the survey data. Section 4.5 describes the quality of the research, while Section 4.6 discusses the ethical considerations relating to this research. The final section summarises the key elements of this chapter.

4.2 Mixed-methods Research Design

This thesis employs a two-stage mixed-methods research design. Stage 1 involves semi-structured, in-depth interviews, while Stage 2 involves a questionnaire survey. This section begins with a discussion of the major criticisms of and justification for using a mixed-methods approach. Given that the qualitative and quantitative phases of data collection in this study are conducted sequentially, this section also discusses the rationales for using the sequential mixed-methods design and the challenges associated with this approach.

A mixed-methods study refers to the use of more than one research approach by integrating qualitative and quantitative approaches in a single study for data collection and analysis

(Bergman 2008; Neuman 2014; Creswell and Clark 2018; Creswell and Creswell 2018). Selecting the most appropriate research design for a study depends on the nature of the research, including the research questions and samples for the study (Creswell and Creswell 2018). The selection of a mixed-methods design is prompted by the nature of the research problem of this study, which seeks to identify the factors that influence managers' use of accrual accounting for decision making. As discussed in Chapter 2, the factors that affect the use of accrual accounting for decision making in the public sector, particularly in the Indonesian context, are not systematically examined in the prior literature. A mixed-methods design is deemed fit for research in which there is insufficient empirical research or unexplored issues (Creswell and Creswell 2018).

Most of the literature on the adoption of accrual accounting in the public sector has employed either content analysis of government documents, interviews or questionnaire surveys. Despite the recent growth in mixed-methods research in the social sciences, 'there is still little evidence or sustained discussion of mixed methods research in the accounting literature' (Grafton et al. 2011, p. 5). Similarly, Dewasiri et al. (2018) find that only a minute number of studies have used a mixed-methods approach in the behavioural finance discipline, including accounting, and recommend future studies employing mixed-methods research. In particular, the application of a mixed-methods design is suggested by Malmi and Granlund (2009, p. 610) 'for enhancing the validity of research results'. Mixed-methods research has been getting increasing attention over the past few decades as a potential approach to better understand accounting issues (Tucker and Hoque 2017). As Grafton et al. (2011, p. 18) state:

> We see significant potential for the accounting literature to adopt mixed methods research strategies. Given the acknowledged strengths of mixed methods designs to enhance both theory testing and theory building through extension, convergence and contradiction of findings, the lack of use of such methods suggests missed opportunities.

Based on these arguments, a mixed-methods design is relevant to address the research questions in this thesis to examine public sector managers' behaviour in using accrual accounting for decision making and the factors influencing such use.

A mixed-methods design has the advantage of providing a better understanding of a research problem than either a qualitative or quantitative approach alone (Neuman 2014). The use of qualitative and quantitative research in combination tends to enable a richer and more comprehensive study as a result of their complementary advantages (Grafton et al. 2011). A qualitative approach can provide more detailed information or insights that cannot be obtained through a quantitative method, while a quantitative approach can generalise findings to a large population (Creswell and Clark 2018). In addition, one of the most advantageous characteristics of conducting mixed-methods research is that it is useful to examine the same phenomenon through several means to cross-validate or corroborate findings, which allows the researcher to identify aspects of a phenomenon more accurately by approaching it from different points of view using different methods and techniques (Neuman 2014). Therefore, this design provides flexibility and the ability to examine the research question in this study from different angles by embracing multiple perspectives of managers' perceptions about the factors that influence their use of accrual accounting for decision making, and encouraging unpredicted factors to emerge.

The fundamental criticism of mixed-methods design arises from philosophical concerns about combining qualitative and quantitative approaches. Critical comments are made about different assumptions (worldviews[11]) for quantitative and qualitative research; thus, combining qualitative and quantitative research is untenable. These assumptions derive from the premise

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[11] Creswell and Creswell (2018) discuss this issue in detail, and categorise philosophical worldviews into postpositivism, constructivism, transformative and pragmatism.

that 'qualitative research methodology is based on inductive logic of enquiry, which is considered to be diametrically opposed to the hypothetic-deductive logic that underpins quantitative methodology' (Grafton et al. 2011, p. 9). Quantitative research (stemming from positivism) assumes that reality is objective and research is conducted with no influence from the researcher (value-free) to develop generalisation (Hathaway 1995). In contrast, qualitative research (deriving from interpretivism and constructivism) assumes that there are multiple realities, including the views of the researcher and participants of the study; the researcher actively interacts with the participants (not value-free); and research is context-bound to explain the phenomenon being studied (Hathaway 1995). However, recent discussion has moved away from using one paradigm and 'researchers have the flexibility to use the worldview that best fits the context of their particular study' (Creswell and Clark 2018, p. 65). Further, the benefits of mixed-methods research, such as providing a better understanding than either approach alone, outweigh the debated philosophical conflicts (Creswell et al. 2008; Creswell and Clark 2018), and the use of mixed-methods research has been advocated as a priority agenda by many researchers (Greene 2008).

This thesis employs two research methods sequentially—first the qualitative approach and then the quantitative method. Initially, a qualitative phase of data collection is conducted through semi-structured, in-depth interviews. The interview method is undertaken to explore emerging themes in greater detail and to gain additional insights into the phenomenon of interest (Neuman 2014). For this study, interviews are conducted to provide insights and additional information on the factors influencing public sector managers' use of accrual accounting for decision making, given the limited literature on this issue in the Indonesian context. The findings from the interviews will provide input into the design of the questionnaire survey in the second stage. The questionnaire survey is undertaken to collect data to examine the structural relationships among the independent variables (i.e. individual factors), moderators (i.e. organisational

characteristics) and dependent variable (i.e. the use of accrual accounting for decision-making behaviour), as well as other relevant variables to test the hypotheses.

There are a number of challenges associated with using sequential mixed-methods research. This design requires considerable time to implement because of the employment of two approaches sequentially. According to Creswell and Clark (2018), the samples for qualitative and quantitative phases should differ, yet derive from the same population. Further, the number of participants in the quantitative stage should be larger than that in the qualitative stage. Following Creswell and Clark (2018), the individuals participating in this research differ in the qualitative and quantitative phases. A larger sample is also used in the second, quantitative stage, compared with the first, qualitative stage, to improve the representativeness and generalisability of the interview results. Another issue is to decide which results from the qualitative stage should be used to shape the development of the quantitative instrument. Creswell and Clark (2018) suggest applying a common qualitative data analysis, such as identifying useful quotations or information coding. Following this strategy, a typical qualitative data analysis is employed in this study to determine useful information to be used in the quantitative stage.

4.3 Stage 1 Interview Design

This section discusses the interview design employed in the first stage of data collection. It begins with the development of interview protocol, and then describes the process of interview data collection, including the interview sample and procedure. This section also discusses the primary means for interview data analysis, including interview transcriptions and the use of computer-aided qualitative data analysis software.

4.3.1 Development of Interview Protocol

The interview protocol is developed based on the TPB (Ajzen and Fishbein 1980; Ajzen 1985, 2005) theoretical framework regarding individual factors, the relevant public sector accounting and administration literature regarding organisational characteristics (e.g. ter Bogt and van Helden 2000; Ashworth et al. 2009) and other literature on the use of accrual accounting for decision making (e.g. Andriani et al. 2010; Kober et al. 2010). Holloway and Wheeler (2010) state that pilot tests for interviews are not essential; however, they are useful for researchers to refine data collection plans in regard to both the content of the data and the procedures to be followed. Following this suggestion, the interview protocol is pilot tested with an expert faculty member and a PhD candidate of the Research School of Accounting at the Australian National University (ANU) to assess the clarity and relevance of the questions and the time needed to conduct the interviews. The interview protocol is revised based on the feedback from the pilot tests.

A semi-structured, in-depth interview approach is used in this study by employing an interview guide containing a list of questions related to the research (Holloway and Wheeler 2010). This approach is useful to explore the in-depth experiences of the participants and ensure that the researcher collects similar types of data from all participants (Given 2008). A semi-structured interview is also suitable for conditions in which researchers need to use prompts or probing queries and open-ended questions to explore topics (Adams 2015). Following this, prompts or probing queries are used in the interviews. For example, during interviews, the researcher provides the examples of the decisions that the managers are making. The researcher also utilises the probing queries on the decision contexts in which the managers consider whether cash method or accrual accounting is preferred. The interview questions in this study are neutral

and open-ended to provide the opportunity for the participants to answer the questions in their own words and enable an in-depth understanding of the research issues.

To examine the factors that influence the use of accrual accounting for decision making by managers in the Indonesian public sector, the interviews focus on questions associated with the actual use of accrual accounting information for decision making and interviewees' views regarding these practices. These questions are necessary to ascertain the current status of the extent to which Indonesian public sector managers use accrual accounting for their decisions. To identify the factors influencing such use, the participants are asked to explain their intention and behaviour towards using accrual accounting, their perceptions about accrual accounting and relevant stakeholders who expect them to use accrual accounting, and the perceived factors that may inhibit or facilitate the use of accrual accounting for decision making, along with organisational characteristics relating to structure (such as organisations' policies and guidelines regarding the use of accrual accounting), culture (such as staff beliefs about the use of accrual accounting) and strategy (to support the use of accrual accounting for decision making). Introductory and demographic questions are included in the interview protocol to gain background information about the participants' role in the organisation, including their current position and work experience. The questions also ask about the participants' accrual accounting knowledge and training. A list of the interview questions used in this study is provided in Appendix 1.

4.3.2 Selection of Interview Participants

To select participants for interview, a dual sampling method is employed: purposive and snowball sampling. Purposive sampling involves the intentional selection of participants who can provide the necessary information on the key concept being explored in the study (Creswell and Clark 2018). Purposive sampling is also useful for in-depth investigation to gain a deeper

understanding of an issue (Neuman 2014). A key strategy in purposive sampling is selection criteria, which enable purposeful selection of individuals who are expected to hold different perspectives about a phenomenon (Creswell and Clark 2018). Snowball sampling is also used to select interview participants. Snowball sampling is a technique for recruiting research participants based on links or referrals from initial subjects (Neuman 2014). Snowball sampling is effective when the population under investigation is difficult to reach (Browne 2005). Therefore, this sampling technique is appropriate for this study to increase the sample size because the participants are government officials whose individual contacts are not publicly available, and who may not agree to participate in the study because of their employment positions and sensitive information concerns.

Given that this thesis focuses on exploring the factors that influence the use of accrual accounting for decision making in the public sector, the criteria used to recruit participants require the individuals to be decision makers in public sector organisations and involved in the use of accrual accounting for decision making. Accordingly, the target sample consists of top and middle-level management from the Indonesian central government ministries. Top managers are chosen as participants because they are heavily involved in setting, implementing or disseminating accrual accounting policies and standards. They also have knowledge of and participate in the use of accrual accounting for decision making, including fiscal and investment decisions. Middle-level managers are selected because they play a crucial role in representing the views of operational use of accrual accounting for decision making, such as budget implementation and asset management. Central government ministries are chosen based on the purpose of this study to fill in the literature gap, as prior Indonesian studies on accrual accounting mainly examine local governments (see Figure 4.1 regarding the structure of the Indonesian public sector).

The Indonesian public sector consists of general government and public corporations. As aforementioned, the Indonesian government began the implementation of full accrual accounting for central (i.e. line ministries) and local governments in 2015. This requirement is not applied to other public sector entities, such as public corporations and public service agencies, as they use a commercial-based accrual accounting system. Accordingly, the discussion of accrual accounting in the Indonesian public sector mostly refers to its implementation at central and local government levels. While prior Indonesian studies on accrual accounting in the public sector focus on local governments (provinces and districts), this study takes a different angle by examining central government organisations. Currently, there are 34 central government (line) ministries in Indonesia (see Appendix 2 for the list of ministries). Some ministries[12] have their regional offices spread across 34 provinces in Indonesia.

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[12] The ministries that deal with religious, justice and finance affairs.
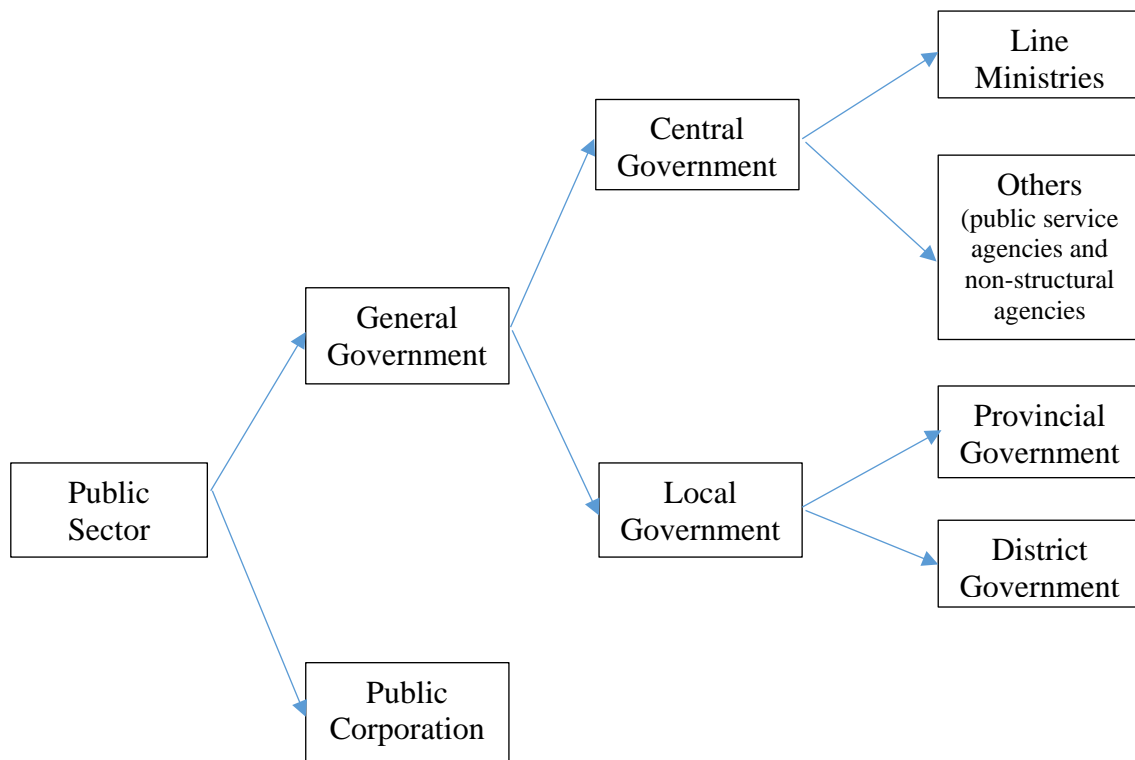
Figure 4.1: Structure of the Indonesian Public Sector

Source: Adapted from *Minister of Finance Regulation 275/PMK.05/2014 on Manual GFS of Indonesia.*

In this study, participants for interviews are taken from four provinces: Jakarta (71%), which is the capital city of Indonesia, and three other regional cities—Medan (11%), Bandung (9%) and Yogyakarta (9%).[13] The decision to include regional areas outside Jakarta is to assess the influence of location (Jakarta and non-Jakarta jurisdiction). As the capital city of Indonesia, Jakarta is home to organisations responsible for accrual accounting activities, including the accounting standard setter, auditor-general and parliament. All ministries' headquarters reside in Jakarta. Further, most policy settings, meetings and disseminations of accrual accounting are conducted in Jakarta. Therefore, government organisations located in Jakarta are expected to

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[13] The participants are taken predominantly from Java Island, covering Jakarta, Bandung, and Yogyakarta, which has the highest proportion of central government officers located there as compared to other islands (BPS 2017). Sumatera covers the second largest proportion of central government officers following Java (BPS 2017). The sample selection is in line with the focus of this research to examine the use of accrual accounting at the central government level, and it aims to minimise bias in interview results.

be more exposed to accrual accounting than other entities located outside Jakarta, making them leading exemplars.

The interviews are conducted with 45 participants comprising 15 top and 30 middle-level managers from 11 central government ministries, as follows: the Ministry of Finance (30 respondents), Ministry of Land and Spatial Planning (one), Ministry of Public Works and Public Housing (one), Ministry of Justice and Human Rights (one), Ministry of National Development and Planning (three), Ministry of Environment and Forestry (one), Coordinating Ministry of Maritime Affairs and Investment (two), Ministry of Energy and Mineral Resources (two), Ministry of Cooperatives and Small and Medium Enterprises (one), Ministry of Trade (one) and Ministry of Manpower (one). Most participants come from the Ministry of Finance to accommodate specific decision contexts that no other ministries have, such as fiscal and macroeconomic matters, investment management, budget allocation for other ministries and consolidating government financial statements.[14] Accordingly, the interview participants are also selected based on the decisions their organisations make, by referring to the decision situations examined from prior literature (e.g. Andriani et al. 2010; Kober et al. 2010).

The decision about the sample size for interviews is based on guidance from the literature on theoretical saturation. Saturation refers to data adequacy—that is, a point at which no new information to achieve the aim of the research is obtained from additional participants (Neuman 2014; Creswell and Clark 2018). However, sample saturation is limited by time constraints and other barriers; hence, 'it is not always appropriate to confirm saturation' (Holloway and Wheeler 2010, p. 147). In this study, the interview process is restrained by the limited time (approximately two months), funding to conduct the interviews and participants' availability for interview. Guest et al. (2006) suggest that saturation for interviews occurs at around 12

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[14] These decision authorities are mandated by *Law 17/2003 on State Finance* and *Law 1/2004 on State Treasury.*

participants, while Creswell (1998) recommends up to 30 people for interviews. In this study, based on guidance from the literature and analysis of the initial interview data, the researcher judges that saturation is reached after 45 interviews are conducted.

4.3.3 Interview Procedure

Face-to-face interviews are conducted from 20 August to 15 October 2018. Interviews are undertaken at the office of the interviewees. Initially, the invitation letters, along with the consent form and information sheet for the project, are sent to the heads of government organisations to obtain their consent for their staff to participate in the interviews and request them to nominate top/middle-level managers, including themselves, who are involved in the use of accrual accounting for decision making for participation in the project. The contact details of the government organisations can be obtained from publicly available sources (e.g. government websites); however, the individual contacts of managers are not publicly available. The information sheet outlines the purpose of the research; the tasks that participants are asked to undertake; and the risks and potential benefits of the research, including participant confidentiality and data storage. The consent form outlines written agreements to both participate in the project and audio-record the interviews. All interviewees sign an informed consent form before the interview, with the exception of one interviewee, who gives consent to participate in the interview, yet does not wish to be audio-recorded. For this subject, notes are taken during the interview to record the participant responses to the questions. Copies of the invitation letter, consent form and information sheet are provided in Appendix 3.

The nominated staff members are then invited directly by the researcher via email and/or telephone. In addition, the snowball sampling approach is used in Medan and Yogyakarta, with the existing participants nominating other potential participants from among their acquaintances, given the difficulty in finding potential participants in these areas. Overall, 41

participants are initially contacted to participate in the interviews, and four subjects are invited through the snowball approach.

The interviews are conducted in the English language (three participants) and Indonesian language (42 participants). The duration of interviews ranges from 11 minutes to one hour and 26 minutes. According to Mathers et al. (1998), the recommended time for an interview varies from 20 to 40 minutes. Four interviews in this study last less than 20 minutes; however, this study retains these interviews. While these interviews miss information on either the individual or organisational factors influencing the use of accrual accounting for decision making, they contain some information about the extent of such use. This information is needed to analyse the actual use of accrual accounting for decision making by Indonesian government managers. The interviewee profile and duration of each interview are presented in Table 4.1. In general, the interview participants have the knowledge and qualifications to answer the interview questions. Almost all participants (93%) have been working for over 15 years in the government ministries, while their current position is a top or senior manager, thereby suggesting strong working experience. In addition, most interviewees (80%) hold intermediate and advanced levels of accounting knowledge, indicating sufficient competency in the accounting field.

Table 4.1: Interviewees' Profile and Interview Duration

Interviewee	Position	Length of Position Held	Work Length	Accounting Training	Accounting Knowledge	Location	Duration (in Minutes)
A	Top manager	1 to 3 years	Over 20 years	No	Basic	Medan	60
B	Middle manager	Over 6 years	5 to 10 years	Yes	Intermediate	Medan	23
C	Middle manager	1 to 3 years	16 to 20 years	Yes	Basic	Medan	39
D	Middle manager	1 to 3 years	Over 20 years	Yes	Basic	Medan	31
E	Middle manager	1 to 3 years	Over 20 years	Yes	Intermediate	Medan	23
F	Middle manager	1 to 3 years	16 to 20 years	Yes	Advanced	Jakarta	32
G	Top manager	Less than 1 year	16 to 20 years	Yes	Advanced	Jakarta	86
H	Top manager	1 to 3 years	Over 20 years	No	Basic	Jakarta	45
I	Top manager	4 to 6 years	Over 20 years	No	Advanced	Jakarta	33
J	Top manager	Less than 1 year	Over 20 years	No	Intermediate	Jakarta	21
K	Top manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	40
L	Top manager	1 to 3 years	Over 20 years	Yes	Intermediate	Jakarta	11
M	Top manager	1 to 3 years	Over 20 years	No	Intermediate	Jakarta	20
N	Middle manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	52
O	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	51
P	Middle manager	Less than 1 year	Over 20 years	No	Intermediate	Jakarta	25
Q	Middle manager	4 to 6 years	16 to 20 years	No	Basic	Jakarta	25
R	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	27
S	Middle manager	1 to 3 years	Over 20 years	Yes	Advanced	Bandung	19
T	Middle manager	4 to 6 years	Over 20 years	Yes	Intermediate	Bandung	42
U	Top manager	Over 6 years	Over 20 years	Yes	Advanced	Bandung	13
V	Middle manager	1 to 3 years	Over 20 years	No	Intermediate	Bandung	21

Interviewee	Position	Length of Position Held	Work Length	Accounting Training	Accounting Knowledge	Location	Duration (in Minutes)
W	Middle manager	4 to 6 years	Over 20 years	No	Intermediate	Jakarta	33
X	Top manager	1 to 3 years	Over 20 years	No	Basic	Jakarta	51
Y	Middle manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	52
Z	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	45
AA	Top manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	22
AB	Middle manager	1 to 3 years	16 to 20 years	Yes	Advanced	Jakarta	24
AC	Middle manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	57
AD	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	16
AE	Middle manager	Over 6 years	Over 20 years	Yes	Advanced	Jakarta	31
AF	Middle manager	1 to 3 years	11 to 15 years	No	Intermediate	Jakarta	46
AG	Top manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	19
AH	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	19
AI	Middle manager	Less than 1 year	11 to 15 years	Yes	Intermediate	Jakarta	37
AJ	Middle manager	1 to 3 years	Over 20 years	Yes	Intermediate	Jakarta	48
AK	Middle manager	1 to 3 years	Over 20 years	No	Intermediate	Jakarta	38
AL	Middle manager	4 to 6 years	Over 20 years	No	Basic	Jakarta	26
AM	Middle manager	1 to 3 years	Over 20 years	Yes	Advanced	Jakarta	55
AN	Middle manager	4 to 6 years	Over 20 years	Yes	Advanced	Jakarta	54
AO	Middle manager	Less than 1 year	Over 20 years	Yes	Intermediate	Yogyakarta	47
AP	Middle manager	1 to 3 years	16 to 20 years	No	Intermediate	Yogyakarta	49
AQ	Middle manager	1 to 3 years	Over 20 years	Yes	Basic	Yogyakarta	30
AR	Middle manager	4 to 6 years	Over 20 years	No	Basic	Yogyakarta	63
AS	Top manager	Over 6 years	Over 20 years	Yes	Intermediate	Jakarta	21

4.3.4 Preparation of Interview Data for Analysis

The following steps are taken in this study prior to analysing the interview data—namely, the transcription of interviews and process of coding the interview data using computer-aided qualitative data analysis software.

First, the interviews in Indonesian language (42 of 45 interviews) are transcribed into Indonesian-language written forms using a professional transcription service. Employing professional transcribers is recommended to address the issue of trustworthiness and when large datasets need to be processed (Dressler and Kreuz 2000). However, Seidman (2006) suggest that the researcher should provide instructions about the research purpose and transcription requirements when a professional transcriber is used to ensure that the transcription is accurate. Creswell and Clark (2018) and Temple and Young (2004) also suggest the use of verbatim (word-for-word) transcription to ensure the accuracy of the transcripts. Following these suggestions, specific instructions of the aim of the study are provided and verbatim (word-for-word) transcription of the interview data is employed (Temple and Young 2004; Seidman 2006; Creswell and Clark 2018). These transcripts are then manually checked for the accuracy of the meaning of the words by listening to the audio-recordings.

After completing the transcription, the Indonesian-language transcripts are translated into English. The main concern with translation is that the meaning may become lost in the process of translating between languages (Davidson 2009; Van Nes et al. 2010). Therefore, a translator must understand the cultural meanings that language carries, as language is tied to local realities (Temple and Young 2004). Interviews in Indonesian language are conducted because this is the participants' first language and they need to be able to express their thinking authentically (Seidman 2006).

To overcome the issue of losing meaning in translation (Davidson 2009; Van Nes et al. 2010), a translator fluent in the language used by the participants during interviews should be used to capture culture-specific terminology (Seidman 2006). In this regard, researchers can act as translators if they are fluent in the language spoken by participants (Temple and Young 2004). Following this strategy, the researcher of this study—who is a native of Indonesia—translates the Indonesian-language transcriptions into English. To ensure the accuracy of the translation, an international professional translator is hired to translate a couple of transcriptions from Indonesia to English. The two sets of translations are compared and the results are similar. The remaining three interviews conducted in English are transcribed and manually checked against the audio-recordings.

Second, this study uses NVivo 11 for interview data analysis. NVivo is one of the most popular computer-assisted qualitative data analysis software programs (Leech and Onwuegbuzie 2011). NVivo is the world's most popular qualitative data analysis software (Edhlund and McDougall 2019) and is useful for researchers who require deep levels of analysis based on both small and large volumes of data (Fujita et al. 2017). Prior to using NVivo, a codebook is developed to code the interview data. Coding in qualitative research refers to an analytical process of categorising data to make them quantifiable. Codes can be a word, phrase or paragraph. In NVivo, coding is a process of organising scripts or references into a specific topic or theme, called a 'node'. Nodes are useful to find emerging patterns and ideas from various coding sources, including interviews.

Drawing on the theoretical framework and relevant literature in this study, the codebook developed follows the TPB constructs (attitude, subjective norm, PBC, intention and behaviour) and organisational characteristics (structure, culture, strategy process and strategy content) variables, including its related subtheme codes, which capture all the references that lead to the

theoretical constructs or variables. Free nodes are created to gather evidence emerging from the interview data that reflects additional insights. Thus, new categories are compared with existing categories for similarities and differences (Holloway and Wheeler 2010). This process enables the researcher to identify the individual and organisational factors that influence the government managers' use of accrual accounting for decision making from the predetermined codes, and to capture other country-specific issues from the emerging codes.

To ascertain the quality of coding, the following steps are taken: continuous comparison processes between the data and codes involving literature, writing memos about the codes and their definitions, and cross-checking the code (Holloway and Wheeler 2010; Creswell and Creswell 2018). Cross-coding and regular code-check meetings are conducted with an independent coder to compare the results and determine whether the codes (themes) are applied in the same or different ways (Creswell and Clark 2018). The independent coder is an expert faculty member from the Research School of Accounting at ANU. A final code-check meeting is conducted to discuss the results and resolve discrepancies in coding. All coders reach agreement on the final codebook.

4.4 Stage 2 Questionnaire Design

This section discusses the questionnaire survey approach used in the second stage of data collection. Specifically, this section describes the development of the questionnaire instrument and measures, questionnaire data collection process, respondent demographic information, and use of the partial least squares (PLS) method for questionnaire data analysis.

4.4.1 Development of Questionnaire Instrument and Measures

The questionnaire instrument is developed based on the theoretical framework, literature (e.g. Ajzen 2005; Ashworth et al. 2009; Kober et al. 2010) and interview findings. The results from

the interviews are helpful to clarify the use of accrual accounting for accountability purpose (i.e. financial reporting) and for other decisions. The findings from interviews are also helpful to develop individual variables in the questionnaire. For example, the concept of 'relevant' (i.e. accrual accounting is relevant for decision making) emerged from the interviews is used as one of the measures of attitude towards the behaviour in the questionnaire. Similarly, the important stakeholders (e.g. the ministry of finance and audit office) and the supporting and inhibiting factors (e.g. accounting knowledge and support from top management) mentioned by the interviewees are used in the questionnaire instrument. In addition, the interview outcomes are useful to develop organisational characteristic variables specific to the Indonesian context, which is discussed in the measurement section below. Further, the questionnaire instrument is pilot tested with three senior managers of Indonesian government agencies. The use of a small set of relevant practitioners for pilot testing is recommended to increase instrument reliability and validity (Neuman 2014). Feedback and comments from this pilot study are used to develop the final instrument. The feedback received leads to minor changes in wording to improve clarity. The final questionnaire instrument is provided in Appendix 4.

4.4.1.1 Attitude towards the Behaviour Measures

Questionnaire items for attitude towards the behaviours are developed by referring to the two aspects of attitude: instrumental (whether the behaviour achieves something, such as being worthwhile or useless) and experiential (how it feels to perform the behaviour, such as pleasant or unpleasant) (Fishbein and Ajzen 2011; Ajzen n.d.-b). In doing so, four questions based on the purpose of this study are developed to measure attitude, with two items applied for each aspect. For example, managers are asked to indicate the extent to which they agree with statements about whether 'accrual information is worthwhile for decision making' (instrumental) and 'it is rewarding to use accrual information for decision making'

(experiential). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure attitude, where higher scores indicate more favourable evaluation. The literature suggests that reliability is optimised with seven response categories (Nunnally 1978). An odd-number Likert scale is used to allow participants to indicate a neutral opinion (Neuman 2014). These questions are displayed in Appendix 4, Q3 Items 1 to 4.

4.4.1.2 Subjective Norm Measures

Questionnaire items for subjective norm are developed by referring to the two forms of subjective norm: injunctive (what important people think a person should do) and descriptive (what important people actually do) (Fishbein and Ajzen 2011; Ajzen n.d.-b). Following this approach, four questions based on the purpose of this study are set to measure subjective norm, with two items applied for each form. For example, managers are asked to indicate the extent to which they agree with the statements 'most of my stakeholders think that I should use accrual information for decision making' (injunctive) and 'most of my stakeholders use accrual information for decision making' (descriptive). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure subjective norm, where higher scores indicate a higher level of perceived stakeholder expectation. These questions are shown in Appendix 4, Q3 Items 5 to 8.

4.4.1.3 Perceived Behavioural Control Measures

Questionnaire items for PBC are developed by referring to the two aspects of PBC: capacity (individuals' perceived difficulty and confidence to perform a behaviour) and autonomy (the extent of control a person has to perform the behaviour) (Fishbein and Ajzen 2011; Ajzen n.d.-b). In doing so, four questions based on the purpose of this study are used to measure PBC, with two items applied for each aspect. For example, managers are asked to indicate the extent to which they agree with the statements 'it is easy to use accrual information for decision making' (capacity) and 'I have control over the use of accrual information for decision making'

(autonomy). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure PBC, where higher scores indicate a more favourable perception of the individual's capacity and control. These questions are shown in Appendix 4, Q3 Items 9 to 12.

4.4.1.4 Intention Measures

Questionnaire items for intention are developed by referring to the literature (Fishbein and Ajzen 2011; Ajzen n.d.-b). These items capture the individual's perceived likelihood (e.g. commitment or willingness) of performing a given behaviour. In doing so, two questions based on the purpose of this study are used to measure intention. For example, managers are asked to indicate the extent to which they agree with the statement 'I am willing to use accrual accounting information for decision making'. Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure intention, where higher scores indicate a more positive intention. These questions are shown in Appendix 4, Q3 Items 13 to 14.

4.4.1.5 Behaviour Measures

Eleven questions are used to measure managers' use of accrual accounting for decision making. The development of these items is based on prior studies examining public sector managers' perceptions of the usefulness of accrual accounting in various contexts of decision making (e.g. Andriani et al. 2010; Kober et al. 2010), adapted to the Indonesian situation. For example, managers are asked to rate statements about whether they use accrual information for budget planning, asset management and so forth. The types of relevant decisions are also gauged from the interview findings in Stage 1. An open-ended question is used to capture other tasks of decision making not listed in previous questions. An option of 'not applicable' is provided if the participants do not use accrual accounting information for the selected contexts of decision making. Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure

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behaviour, where higher scores indicate more frequency of use. These questions are shown in Appendix 4, Q1.

4.4.1.6 Behaviour Belief Composite Measure

Behavioural belief is formed by behavioural belief strength (the likely outcomes of behavioural performance) and outcome evaluation (individuals' positive or negative evaluation of these outcomes) (Fishbein and Ajzen 2011; Ajzen n.d.-b). Behavioural belief is measured by a cross-product of behavioural belief strength and outcome evaluation. The final measure of behavioural beliefs is the sum of the cross-product for all the consequences (composite measure). Behavioural belief is the underlying antecedent of attitude—a relationship expressed by Equation 1:

$$A_B \; \alpha \; \sum b_i e_i$$

(Equation 1)

In this equation, A_B is the attitude towards the behaviour B; b_i is the strength of belief about the anticipated outcome i; e_i is the evaluation of outcome i; and the resulting products are summed over the total number of referents.

Questionnaire items for behavioural belief are developed by reference to the advantages of performing a behaviour (Fishbein and Ajzen 2011; Ajzen n.d.-b). Prior studies on the benefits of accrual accounting for the public sector suggest that accrual accounting will produce better information that will lead to improved decisions made by managers (e.g. Guthrie 1998; Robinson 1998; Likierman 2000; Athukorala and Reid 2003; Blöndal 2003). In this study, eight questions are developed to measure behavioural belief based on the benefits of accrual accounting highlighted in prior studies and the interview findings, with four items each measuring behavioural belief strength and outcome evaluation. For example, managers are

asked to indicate how likely it is that accrual information will improve the accuracy of their decisions (strength) and which extent of accrual accounting information is needed to improve the accuracy of their decisions (outcome). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure behavioural belief, where higher scores indicate more favourable belief. These questions are shown in Appendix 4, Q4 (strength) and Q5 (outcome).

4.4.1.7 Normative Belief Composite Measure

Normative belief is formed by normative belief strength (belief concerning the likelihood that important others would approve or disapprove of a behaviour) and motivation to comply (the extent to which the individual is motivated to comply with significant others) (Fishbein and Ajzen 2011; Ajzen n.d.-b). Normative belief is measured by a cross-product of normative belief strength and motivation to comply. The final measure of behavioural belief is the sum of the cross-product for all stakeholders (composite measure). Normative belief is the underlying antecedent of subjective norm—a relationship expressed by Equation 2:

$$S_N \; \alpha \; \sum n_i m_i$$

(Equation 2)

In this equation, S_N is the subjective norm; n_i is the normative belief concerning referent i; m_i is the person's motivation to comply with referent i; and the resulting products are summed over the total number of referents.

Questionnaire items for normative belief are developed by reference to the influence of social referents in performing a behaviour (Fishbein and Ajzen 2011; Ajzen n.d.-b). Prior studies in public sector accounting suggest that the use of accrual accounting could be influenced by various groups of stakeholders, such as the audit office, accounting profession and parliament (e.g. Paulsson 2006; Arnaboldi and Lapsley 2009; Buhr 2012; Eulner and Waldbauer 2018).

Based on the findings from prior studies and the interviews, 28 questions are selected to measure normative beliefs, with 14 items each measuring normative belief strength and motivation to comply. An open-ended question is also asked to capture other stakeholders not listed in preceding questions. For example, managers are asked to indicate the likelihood that the audit office will expect them to use accrual accounting for decision making (strength) and the likelihood that they will comply with the audit office's expectation (motivation to comply). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure normative belief, where higher scores indicate a higher level of belief in the influence of various stakeholder groups. These questions are shown in Appendix 4, Q6 (strength) and Q7 (motivation to comply).

4.4.1.8 Control Belief Composite Measure

Control belief is formed by control belief strength (belief concerning the likelihood that a factor that facilitates or prevents behaviour will occur) and control belief power (perceived power of the factor to actually facilitate or prevent the performance of a behaviour) (Fishbein and Ajzen 2011; Ajzen n.d.-b). Control belief is measured by a cross-product of control belief strength and power. The final measure of behavioural belief is the sum of the cross-product for all control factors (composite measure). Control belief is the underlying antecedent of PBC—a relationship expressed by Equation 3:

$$\text{PBC} \ \alpha \ \sum c_i p_i$$

(Equation 3)

In this equation, *PBC* is the perceived behavioural control; c_i is the control belief strength; p_i is the control belief power; and the resulting products are summed over the total number of referents.

Questionnaire items for control belief are developed by reference to the presence of factors that may enable or inhibit performance of the behaviour (Fishbein and Ajzen 2011; Ajzen n.d.-b). Prior studies in public sector accounting highlight the importance of factors relating to the implementation of accrual accounting (e.g. Lapsley and Wright 2004; Connolly and Hyndman 2006; Ridder et al. 2006; Christensen 2007; Gårseth-Nesbakk 2011; Adhikari and Gårseth-Nesbakk 2016). While many of these studies do not directly examine the use of accrual accounting for decision making, insights can be drawn from this literature regarding the potential factors that could enable or inhibit the use of accrual accounting for decision making. Based on the findings from previous studies and interviews, 24 questions are selected to measure control beliefs, with 12 items each measuring control belief strength and power. An open-ended question is also asked to capture other factors not listed in preceding questions. For example, managers are asked to indicate the extent to which accrual accounting knowledge influences their ability to use accrual accounting for decision making (strength) and the importance of accrual accounting knowledge in facilitating their use of accrual accounting for decision making (power). Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure control belief, where higher scores indicate a higher level of belief in these factors. These questions are shown in Appendix 4, Q8 (strength) and Q9 (power).

4.4.1.9 Organisational Characteristics Measures

Nine questions are used to measure organisational characteristics. These items are mainly drawn from Ashworth et al. (2009) and adapted based on the interview findings (see Chapter 5) to measure the components of organisational characteristics: structure, culture and strategy. Three items are used to measure each component of organisational characteristics. For example, managers are asked to indicate the extent to which they agree that 'written procedures are important in guiding the actions of our employees' (structure); 'our employees use accrual

accounting in carrying out their jobs' (culture); and 'when we develop strategy, it is planned in detail' (strategy). These questions intend to capture the existence of formal procedures and guidance, the process of developing strategy to facilitate the use of accrual accounting, and whether there is an organisational culture that embraces the use of accrual accounting. An option of 'unsure' is also provided in case the participants are uncertain about their responses. Following Ajzen (n.d.-b), a seven-point Likert (1932) scale is used to measure organisational characteristics, where higher scores indicate a higher presence of these characteristics. These questions are shown in Appendix 4, Q10.

4.4.1.10 Additional Variables Measures

Previous studies suggest that the use of accrual accounting for decision making could be influenced by managers' perceptions of whether accrual accounting is useful or not for particular decision situations, such as performance assessment or budgeting decisions (e.g. Kober et al. 2010; Pollanen and Loiselle-Lapointe 2012). However, it is unclear which decision situations are useful or not in the Indonesian context, given the limited prior literature. Therefore, this study develops questions to measure the perceived usefulness of accrual accounting information in various contexts of decisions (called usefulness). Types of decisions to capture perceived usefulness are the same as the decision situations in the behaviour measurements; thus, 11 items are used to measure usefulness. An open-ended question is provided to capture other contexts of decision making not listed in previous questions. An option of 'not applicable' is also provided if the participants do not indicate the usefulness of certain decision situations because they do not use accrual accounting information for those situations. Consistent with other survey questions for this study, a seven-point Likert (1932) scale is used to measure the perceived usefulness, where higher scores indicate a higher perceived usefulness. These questions are shown in Appendix 4, Q2.

In addition to the organisational location (Jakarta versus non-Jakarta) as one of the control variables (as explained in the next section), this study examines further specific factors that may cause differences as a result of the location of organisations (called location-related differences). Prior studies suggest that local situations, such as lack of skilled employees and inadequate facilities and equipment, may affect organisations' practice and productivity (Cooper and Robson 2006; Spanos 2019). As aforementioned, Jakarta has the advantage of being the capital city of Indonesia and the centre of economic activities of Indonesia, including being home to many organisations (e.g. accounting professions and standard setters) responsible for accrual accounting activities. Therefore, organisations located in Jakarta are expected to be more exposed to accrual accounting than are other entities located outside Jakarta, leading to higher use of accrual accounting for decision making. In particular, the expected higher use of accrual accounting by organisations in Jakarta may result from more accrual accounting training, more skilled human resources and better infrastructure, compared with that outside Jakarta or in remote areas. Based on these factors, three questions are used to measure the managers' perceptions of specific differences arising from organisational location—namely, accrual accounting training, human resources who understand accrual accounting, and infrastructure to support accrual accounting—between Jakarta and remote areas. The questions are developed to indicate whether managers agree that government organisations in Jakarta have more training, human resources and facilities relating to accrual accounting compared with remote areas. An option of 'unsure' is provided in case participants are uncertain about their responses. A seven-point Likert (1932) scale is used to measure the managers' perceptions of location-related differences, where higher scores indicate a higher presence of these differences. These questions are shown in Appendix 4, Q11.

4.4.1.11 Control Variables

Two control variables are included when testing the conceptual framework of this study: organisational size (measured by number of employees) and organisational location (Jakarta versus non-Jakarta). Considering that some ministries have more employees than others, organisational size is used as a control variable. Prior studies suggest that the availability of skilled human resources plays a huge role in accrual accounting reform (e.g. Athukorala and Reid 2003; Khan and Mayes 2009; Lande and Rocher 2011). Large organisations indicated by a higher number of human resources are more likely to have more skilled human resources than are small organisations. Therefore, managers working in large organisations are expected to have greater use of accrual accounting than those who work in small organisations. As aforementioned, location is used to distinguish the place of organisations between Jakarta and outside Jakarta. As the capital city of Indonesia, Jakarta is the centre of economic activities of Indonesia and home to many organisations responsible for accrual accounting activities. Therefore, organisations located in Jakarta are expected to have greater use of accrual accounting for decision making than are organisations outside Jakarta.

4.4.1.12 Respondent Demographic Information

In the final section of the questionnaire, respondent demographic questions are included to determine the respondents' demographic and background information. According to Hughes et al. (2016), demographic information is necessary for the purpose of providing an accurate description of the research participants to better understand and draw conclusions about the samples. Yet, it is recommended to keep the questions basic and avoid questions of a sensitive nature to minimise asking personal information that could be considered invasive (Dillman et al. 2014). In this study, the demographic information includes current position, length of current position, work experience, organisational location and size, highest level of academic

qualification, accounting education and training, overseas education, member of accounting profession, IPSAS and GFS users, and accounting knowledge (see Appendix 4, Section B).

4.4.1.13 Pilot Test of Questionnaire Instrument

After formulating the questions, the questionnaire instrument is pilot tested. A pilot test is important to increase the validity and reliability of the survey instrument (Ruel et al. 2015). The use of a convenience sample (as large as possible) is the most common approach to questionnaire pilot testing (Converse and Presser 1986; Perneger et al. 2015). In this study, a pilot test of the questionnaire instrument is conducted with three relevant practitioners. Feedback and comments lead to revisions, including revising the wording and format of the questionnaire instructions and questions, to improve the clarity of the instrument. The final questionnaire instrument is then distributed to the sample of Indonesian managers.

4.4.2 Questionnaire Data Collection

A paper questionnaire is chosen to collect data because it is more suitable for the target audience of this study and to improve the response rate. As aforementioned, the individual contact details (e.g. email address or telephone number) of Indonesian government managers are not publicly available. As such, an online survey is not feasible. Therefore, the best way to reach these managers is through a paper mode of delivery directly to their offices. Thus, the researcher delivers the questionnaires to the government ministries and requests the assistance of the ministries to distribute the questionnaire to the relevant managers. The researcher later collects the completed survey.

4.4.2.1 Questionnaire Sample

To address the research objective, this study conducts a questionnaire survey to examine the factors influencing public sector managers' use of accrual accounting for decision making.

Accordingly, the survey targets those in central government organisations who are involved in the use of accrual accounting for decision making (see Figure 4.1 regarding the structure of the Indonesian public sector). In Indonesia, there are 34 ministers in charge of the government ministries, and they report directly to the president. Accordingly, the questionnaire respondents in this study are selected from 34 government ministries in Indonesia (see Appendix 2 regarding the list of government ministries in Indonesia). Specifically, government managers are chosen from each ministry and involved in the use of accrual accounting for decision making. Similar to the interview stage, the participants for the questionnaire survey are also taken from four cities—Jakarta, Bandung, Yogyakarta and Medan—to assess potential organisational differences between locations. The final sample includes 700 potential respondents.

4.4.2.2 Questionnaire Procedure

The questionnaire is printed in a A3 paper folded into a conventional (letter size) booklet, in portrait format, with no stapling in the upper left corner of pages, to make the questionnaire easy for respondents to use, as recommended by Dillman et al. (2014) (see Appendix 4). Each booklet consists of seven double-sided pages. The ANU logo and title of the questionnaire survey are printed on the cover page of the survey booklet to encourage respondents to complete the survey (Dillman et al. 2014). The first page of the booklet provides an introduction and brief instructions for respondents, followed by a glossary relating to the use of accrual accounting for decision making. The questionnaire consists of two sections: A and B. Section A contains questions with multi-item scales. The final page of Section A invites respondents to provide comments regarding the use of accrual accounting for decision making. Section B is devoted to gathering the respondents' demographic information.

The questionnaires are delivered directly by the researcher to the potential respondents' offices. In doing so, the researcher gives questionnaires to the heads of organisations or representatives

from those offices to be distributed to the potential participants. The questionnaire set comprises the invitation (cover) letter and information sheet (describing the importance and other relevant information of the study) (see Appendices 5 and 6) and a return envelope in which to place the individual questionnaire, as recommended by Dillman et al. (2014). In addition, an invitation letter to the heads of the organisations (Appendix 7) is included to ask for their consent to distribute the questionnaires in their office, as the individual contacts of participants are not publicly available. Collection bags are provided to each organisation to be taken by the researcher at the collection time.

The questionnaires are distributed and collected during June and July 2019. The first batch of questionnaire surveys is conducted with participants from government ministries in Jakarta city during 10 to 14 June 2019, and the questionnaires are collected during 17 to 21 June 2019, with 500 questionnaires distributed and 392 received. Next, 50 questionnaires are distributed in Medan city from 24 to 26 June 2019, and 48 questionnaires are collected from 27 to 28 June 2019. The third batch of 50 questionnaires is delivered in Bandung city from 1 to 3 July 2019, and 37 are collected from 4 to 5 July 2019. Following this, 50 questionnaires are distributed in Yogyakarta city from 8 to 10 July 2019, and 21 questionnaires are collected from 11 to 12 July 2019. The final batch of 50 questionnaires is distributed in Jakarta city from 15 to 17 July 2019, and 33 questionnaires are collected from 18 to 19 July 2019. Overall, of 700 questionnaires distributed, 531 total responses are received, resulting in a response rate of 76% (see Table 4.2). This response rate is higher than those indicated in recent management accounting studies, ranging from 23% to 31% (Thoradeniya et al. 2015; Appuhami 2017; Tashakor et al. 2019), and public sector accounting studies, ranging from 21% to 58%[15] (Frank and Gianakis 2010; Kober et al. 2010; Cohen et al. 2013; Kobayashi et al. 2016).

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[15] Given that the questionnaires are distributed by the organisations and all the completed questionnaires are returned to the collection bags, which are physically collected by the researcher at a time arranged with the

Table 4.2: Response Rate

Initial sample	**700**	
Questionnaires received		
• Medan	48	
• Bandung	37	
• Yogyakarta	21	
• Jakarta	425	
Total responses received	**531**	
Response rate		**76%**
Questionnaires removed	(24)	
Final usable sample	**507**	
Usable response rate		**72%**

Eleven questionnaires are eliminated because of a high level of incompleteness (ranging from 13% to 64%). Another 13 questionnaires are removed from the dataset, as they are possible candidates for multivariate outliers (this is further discussed in Chapter 6). The final total responses comprise 507 questionnaires, which results in a usable response rate of 72%.

4.4.3 Sample Profile

The demographic data for the 507 respondents indicate that most of them occupy positions as low-level managers (76.3%), followed by middle-level managers (22.3%) and top-level managers (1.4%) (see Table 4.3). A total of 33.9% respondents have been in their positions for up to two years, 35.2% for between two and five years, and 30.9% for more than five years

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organisations, late responses cannot be identified. Hence, a comparison between early and late responses for nonresponse bias test (Dillman et al. 2014) cannot be conducted. In addition, non-response follow-up (Vandenplas et al. 2015) cannot be undertaken because of the anonymity of the questionnaire survey and because the managers' individual contact details are not publicly available. As such, non-response bias tests are not feasible. Nevertheless, prior research suggests that response rate can be an indicator of data quality, where a higher response rate indicates a more representative sample and more accurate results derived from the population (Groves and Peytcheva 2008; Meterko et al. 2015). This study seeks to achieve a high response rate to alleviate the non-response bias issue, and obtains a sufficiently high response rate of 76%.

(30.9%)[16] (see Table 4.4). Table 4.5 shows that the majority of respondents have been working in their ministries for more than 10 years (86.5%).

Table 4.3: Respondents' Positions

Position	Frequency	Percentage
Top-level manager	7	1.4
Middle-level manager	113	22.3
Low-level manager	387	76.3
Total	507	100

Table 4.4: Respondents' Position Length

Duration	Frequency	Percentage
Up to two years	172	33.9
Between two and five years	178	35.2
More than five years	157	30.9
Total	507	100

Table 4.5: Respondents' Work Length

Duration	Frequency	Percentage
Up to 10 years	70	13.8
11 to 20 years	208	41.0
21 to 30 years	180	35.5
Above 30 years	49	9.7
Total	507	100

The government organisations where the managers work are largely located in Jakarta (80.5%), while those in Medan, Yogyakarta and Bandung represent only 10.1%, 6.5% and 3.0%, respectively (see Table 4.6). In regard to organisational size, respondents are asked to indicate the number of employees in their organisations in one of the following categories: up to 10, 11

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[16] According to *Government Regulation 11/2017 Regarding Civil Servant Management*, a government manager can be transferred to a different job after two years in his or her previous position, with the usual term of office of five years.

to 20, 21 to 30, 31 to 40, 41 to 50 and over 50 employees. The median is respondents who work in an organisation with over 50 employees. Therefore, organisational size as a control variable is classified into small organisations with up to 50 employees and large organisations with over 50 employees. Table 4.7 shows that large organisations with over 50 employees dominate the sample (71%), compared with small organisations with up to 50 employees (29%).

Table 4.6: Location of Organisations

Location	Frequency	Percentage
Jakarta	408	80.5
Medan	51	10.1
Yogyakarta	33	6.5
Bandung	15	3.0
Total	507	100

Table 4.7: Organisational Size

Number of Employees	Frequency	Percentage
Up to 50	147	29.0
Over 50	360	71.0
Total	507	100

With respect to respondents' education level and accounting education and training (see Appendix 8), more than half of the respondents have master degrees (65.5%), 32.7% have bachelor degrees and 1.8% hold doctoral degrees as their highest level of academic qualification. Only 13.6% graduated overseas. Likewise, over half of the respondents acquired accounting education (63.7%). The majority have attended accrual accounting training (60.4%), though only 12.8% of the respondents are a member of an accounting profession. Overall, the respondents' profile indicates that they have the knowledge and experience to respond to the questionnaires.

4.4.4 Partial Least Squares Method

PLS path modelling is increasingly used by accounting researchers to analyse research data, particularly in recent management accounting studies (e.g. Ferreira et al. 2010; Lee et al. 2011; Thoradeniya et al. 2015; Nitzl 2016; Nitzl and Chin 2017; Tashakor et al. 2019). PLS enables a set of relationships among one or more independent (exogenous) variables and their associated dependent (endogenous) variables to be examined in more complex and comprehensive models (Lee et al. 2011).

The PLS path modelling method is used in this study to analyse the questionnaire data, given the complex models with many structural relationships among variables, the measurements of single and multi-item indicators, the method's capacity to deal with non-normal data, the method's capability to test mediating variables as part of a comprehensive model, the method's application for most types of data measurement scales, the use of both reflective and formative indicators, the method's capability to deal with models that contain emergent and latent variables, and the small sample size in sub-sample testing (Lee et al. 2011; Thoradeniya et al. 2015; Hair et al. 2017). PLS is discussed in more detail in Chapters 6 and 7.

4.5 Quality of Research

This section discusses the quality criteria for qualitative and quantitative research used in this study. Four-dimension criteria (credibility, dependability, confirmability and transferability) are used to assess the rigour of qualitative research, based on Lincoln and Guba (1985). The quality of quantitative research is evaluated from the validity and reliability of the research (Neuman 2014; Heale and Twycross 2015; Creswell and Clark 2018).

4.5.1 Quality of Interviews

Four criteria are used to assess the rigour of qualitative research: credibility, dependability, confirmability and transferability (Guba 1981; Lincoln and Guba 1985; Moon et al. 2016; Forero et al. 2018).

4.5.1.1 Credibility

Credibility refers to the degree to which the results of the qualitative research are credible from the perspective of the participants (Lincoln and Guba 1985). Credibility can be demonstrated through a number of strategies, such as prolonged engagement, peer debriefing and establishing the investigator's authority (Lincoln and Guba 1985; Creswell and Miller 2000; Moon et al. 2016; Forero et al. 2018). Prolonged engagement involves spending sufficient time to understand the culture or phenomenon of interest and to develop a relationship with participants (Creswell and Miller 2000). Consistent with this strategy, the researcher conducts a self-introduction and informal conversation with the interviewees before the main interviews to engage with the interviewees and enhance their willingness to share information. Next, peer debriefing is conducted with faculty members of the ANU Research School of Accounting, who specialise in the areas of this research. The researcher holds regular debriefing sessions with the experts while developing the interview protocol, transcription and coding process, and data review. Further, the researcher is equipped through learning and training to ensure he has the required knowledge and research skills to perform the interviewees (Lincoln and Guba 1985). These strategies establish confidence that the results of the qualitative research are credible.

4.5.1.2 Dependability

Dependability is the extent to which research findings can be consistently repeated by other researchers using the same methods with the same context and participants (Guba 1981). A recommended strategy to establish dependability is an audit trail that describes the research process, including how the researcher collects and analyses the data in a transparent manner (Shenton 2004). This study develops detailed records of the research design and implementation, including the methods, data collection and analysis, so that other researchers can replicate the research process. In doing so, this qualitative research is conducted in a traceable and documentable manner.

4.5.1.3 Confirmability

Confirmability is the degree of neutrality in the research findings and refers to the extent to which the results can be confirmed or corroborated by other researchers (Lincoln and Guba 1985; Shenton 2004). Recommended strategies to achieve confirmability include data procedure documentation and use of multiple data sources to show that the results are a product of independent research methods to avoid any potential bias or personal motivations of the researcher (Lincoln and Guba 1985; Shenton 2004). Hence, this study documents the research procedures, which highlight every step of data analysis and the relevant justifications. In addition, this study applies mixed-methods research and different data sources with participants from different ministries and cities. These strategies help establish that the research findings accurately portray the participants' responses.

4.5.1.4 Transferability

Transferability refers to the degree to which the results can be applied to other contexts or settings (Guba 1981). The researcher can enhance transferability by providing details of the

research context, including how the participants are identified and chosen (Moon et al. 2016). This study uses a purposive sampling method to maximise specific data relative to the context in which they are collected and to ensure that the selected participants are representative of the variety of views of subjects across settings (Forero et al. 2018). Additionally, this study follows Shenton's (2004) recommendation regarding the details that should be provided: (i) the number of participants taking part in the research and their demographic information, (ii) the participant criteria, (iii) the data collection method, (iv) the number of organisations taking part in the study, (v) the number and length of data collection sessions and (vi) the period over which the data are collected. These strategies strengthen the transferability of this research.

4.5.2 Quality of Questionnaire Survey

To assess the quality of quantitative research, considerations must be given to the validity and reliability of the research (Neuman 2014; Heale and Twycross 2015; Creswell and Clark 2018). These considerations are discussed below.

4.5.2.1 Validity

Validity refers to the accuracy of research findings (Neuman 2014) and relates to the extent to which a concept is accurately measured in a quantitative study. In general, threats to the validity of research findings can be classified into threats to internal and external validity (Ihantola and Kihn 2011). Internal validity is concerned with the rigour of a causal explanation—that variations in the dependent variable result from variations in the independent variable(s) (Creswell and Creswell 2018). Threats to internal validity may occur throughout the research process, including through instrumental issues and potentially omitted variables (Modell 2005; Ihantola and Kihn 2011). Instrumental issues occur when a measure lacks consistency or does not generate valid scores. To address the instrumental issues, this study develops the questionnaire instrument based on a well-established theoretical framework (TPB) and pilot

tests the questionnaire with three relevant practitioners. Further, validity tests are conducted for all measures of variables in the structural model in this study, confirming acceptable validity. Additionally, to address the issue of potentially omitted variables, this study provides open-ended questions in the questionnaire to explore alternative factors influencing the use of accrual accounting for decision making. In doing so, this study reduces potentially omitted variables by allowing the participants to identify additional factors.

External validity is related to the effectiveness of generalising the research findings across population, time and setting (Ihantola and Kihn 2011; Neuman 2014; Creswell and Creswell 2018). This study establishes external validity by surveying public sector managers from different ministries in Indonesia with various demographic backgrounds (e.g. work experience, educational level, accounting training, organisational size and location) (Mitchell 1985). This study fulfils the minimum sample size requirement for PLS analysis with an acceptable statistical power (Hair et al. 2017; Kock and Hadaya 2018), as recommended by Creswell and Creswell (2018) and Ihantola and Kihn (2011) to increase the external validity of quantitative research.

4.5.2.2 Reliability

Reliability relates to the consistency of research findings under the same condition with the same subjects (Creswell and Creswell 2018). In other words, it is the repeatability of the research measurement. Reliable measures yield consistent values when repeated tests are conducted (Hair et al. 2014). As suggested by Neuman (2014), this study conducts three strategies to improve reliability: (i) clearly conceptualising all constructs by developing unambiguous, clear theoretical definitions, which are provided in the research method section; (ii) using multiple indicators to measure a construct, as this study uses two or more indicators of the same construct; and (iii) pilot testing the questionnaire instrument by going through

several drafts before the final version, as previously explained. A copy of the questionnaire instrument is provided in Appendix 4. Such strategies demonstrate the transparency of the quantitative research procedures and increase the consistency of the measurements, thereby establishing the reliability of the findings.

4.6 Ethical Considerations

Ethical issues may arise in qualitative, quantitative and mixed-methods research and researchers must anticipate these issues (Hesse-Biber 2017). These issues can occur in various stages of research, and addressing ethical dilemmas is required by researchers (Creswell 2009; Creswell and Creswell 2018). In compliance with the requirements of the ANU Human Research Ethics Committee, ethical clearances of this study for the interviews and questionnaire survey are obtained before data collection.

All interview and questionnaire participants receive an invitation letter explaining the purpose of the study. In addition, all participants are provided a participant information sheet containing the project description and methodology, voluntary participation and withdrawal, confidentiality, and risks and benefits of the project. The researcher is aware of the cultural and social norms in Indonesia, as he is an Indonesian citizen. There are no social or cultural sensitivity issues in this project. Each participant signs a consent form before the interview, which outlines their agreement to participate in the project and provides their permission to audio-record the interviews.

The participants' privacy is protected by the ANU Privacy Policy and the *Privacy Act 1988*, as stated in the information sheet given to each participant. This policy contains information about how to access and seek personal information. To minimise disruption to participants' lives, all interviews and questionnaire surveys are conducted in the participants' offices at their chosen

time. In reporting and storing the data, the confidentiality of interviewees is maintained by assigning alphabetical identifiers when reporting the results. Individual questionnaire respondents remain anonymous and all the questionnaire data are presented in a summarised form.

4.7 Chapter Summary

This chapter outlines the research method employed in this thesis. A mixed-methods approach is used to collect data. The first stage of the study involves obtaining qualitative data through interviews, and the findings from the interviews inform the development of a questionnaire instrument in the second stage.

Qualitative data are collected through semi-structured, in-depth interviews with 45 top and middle-level managers of the Indonesian central government. The interviews are conducted in the Indonesian and English language. The interviews conducted in the Indonesian language are translated and transcribed to English before being coded using computer-aided qualitative data analysis software (NVivo). The interviews conducted in English are transcribed and manually checked against the audio-recordings prior to the NVivo coding process. The findings from the interviews are used to develop the questionnaire instrument.

The questionnaire survey is conducted with top-, middle- and low-level government managers in Indonesia. Five hundred and seven usable responses are received, resulting in a usable response rate of 72%. This chapter also discusses the PLS statistical method used to analyse the questionnaire data. The next chapter discusses the interview data analysis and findings.

Chapter 5: Interview Study

5.1 Introduction

The research design, described in Chapter 4, begins with semi-structured interviews about managers' use of accrual accounting for decision making and the factors influencing their use. The interview outcomes inform the design of the questionnaire in the second stage, which addresses the individual factors and organisational characteristics that influence managers' use of accrual accounting for decision making. This chapter focuses on analysis of the data collected during the first stage of this study from the semi-structured interviews. Section 5.2 reports the interviewees' views on their use of accrual accounting for decision making. Sections 5.3 and 5.4 discuss the findings on the individual and organisational factors that influence interviewees' use of accrual accounting for decision making, respectively. Section 5.5 discusses the additional factors emerging from the interview data analysis, while Section 5.6 concludes this chapter.

5.2 Use of Accrual Accounting for Decision Making

This discussion on the use of accrual accounting for decision making (behaviour) is divided into three categories: decision-making contexts, types of accounting information and frequency of use of accrual accounting for decision making. First, to explore decision-making situations, the interviewees are asked about their main responsibilities in their current position. The key terms or phrases used by interviewees in their descriptions of the decision-making context are identified and coded by referring to prior public sector accounting literature on various types of decision-making contexts (e.g. Andriani et al. 2010; Kober et al. 2010). In addition, some keywords are adapted to include country-specific terms regarding public financial decisions according to the *Indonesian Law on State Finance (17/2003)* and *State Treasury (1/2004)*. For example, based on these laws, there is a separation between budget preparation and budget

implementation decisions. There is also a specific Indonesian government agency dealing with fiscal policy and macroeconomic decision making, which is similar to the structure of the Swiss government (Bergmann 2012).

Twelve decision contexts emerge from the data analysis: budget planning, budget implementation, revenue management, cash flow management, asset management, liability management, risk management, fiscal matters, performance measurement, discharging accountability (i.e. through financial reporting), investment management and provision of goods/services. This finding confirms a variety of decision situations encountered by government managers in previous studies (e.g. Jones and Puglisi 1997; Andriani et al. 2010; Kober et al. 2010; Bergmann 2012) and is useful to develop the questionnaire instrument regarding managers' use of accrual accounting. All interviewees, except one, state that they deal with budgeting decisions in their workplace. For example:

> My main responsibilities are related to budget … Accrual accounting is important because it is needed to do my duties. It is also important because of its wide coverage of information compared to cash, particularly related to budgeting. (Interviewee A, Top Manager)

> My main duty is related to budgeting process … Accrual is used for budget planning and asset [management]. Those are the most important [uses of accrual accounting for decision making]. (Interviewee B, Middle Manager)

> My main responsibility is to support the organisation from the financial side, from preparing the budget, cash flow, budget implementation and reporting, including the assets management and performance measurement. (Interviewee C, Middle Manager)

Contrarily, only a small number of interviewees state that they are involved in decisions relating to the cost of goods/services, investment and fiscal matters. For example:

> Finally, we discuss about the one price of petrol policy. The president said that he wants the petrol price in Papua [island] to be the same with the price in Java [island]. This [policy] has a broad impact in accounting, in terms of how to report it. It has also an impact on the policy.

Then, we have to prepare how much money is needed to implement it. (Interviewee G, Top Manager)

Because we are managing money in terms of optimising the existing money. So we will automatically try to compare the gains between holding and investing money. Accrual information becomes part of the governance structure that was built to monitor the cash movement until we finally make a decision to keep or sell an investment on the market. Implicitly, accrual information is very important for our operations. Accrual information is also useful to monitor the movements of potential revenue and loss from time to time. (Interviewee AC, Middle Manager)

The provision of GFS data is a routine job because my job is also to make macroeconomic policies. So, we always make a comparison of fiscal indicators with that of other countries. We can say that at least once every three months [quarterly], we always try to check the [fiscal] numbers on the GFS. (Interviewee L, Top Manager)

Moreover, the interviewees are asked about the types of accounting information they use to conduct their duties (i.e. decision making). From prior literature, in general, there are three types of accounting information used for decision making: cash, accrual and a combination of cash and accrual (e.g. Carlin 2005; Lapsley et al. 2009; Hyndman and Connolly 2011). All interviewees identify a combination of cash and accrual information as the type of information they use in making decisions. This indicates that Indonesian public sector managers still consider cash-based information important in their work and use it alongside accrual accounting. This result is consistent with prior research that suggests the importance of both cash and accrual information for managers' decision making (Mack and Ryan 2006; Adhikari and Gårseth-Nesbakk 2016; Anessi-Pessina et al. 2016). However, it is unclear for which decision situations managers use accrual accounting information. Therefore, the questionnaire in the second stage asks questions about the use of accrual accounting for every decision situation. The following quotations establish the prevalence of a combination of cash system and accrual accounting in the managers' decision making:

We use a mix of cash and accrual information. Accrual is used to record the office financial transactions and assets. We manage accounts receivable and others. We use cash system to record cash received from our accounts receivable and the payments to our creditors. We also record the receipt of money from the auction. (Interviewee U, Top Manager)

We categorise our duties into two things. Firstly, we have prepared financial statements using accrual accounting since 2015. For GFS, we use both cash and accrual information. Secondly, for daily operations of decision making, since our budget is still cash basis, we mostly use cash-based information in the operational level. We have financial reports and database. There are accountability reports and managerial reports. Accrual information can include data and reports. Reports are the output prepared according to the purpose. We have all data that we can extract and analyse for decision making. The data are a combination of accrual and cash information. We use the data for decision making. One example of accrual data is debt. One of our concerns is to manage and control our debt, and to manage our debt level and the risks coming from the debt. The line ministries have their own data to use for decision making. (Interviewee N, Middle Manager)

Further, the interviewees are asked about the types of accrual information they use. Two concepts emerge from the data analysis relating to this question: GFS and IPSAS. GFS is used by six interviewees, while IPSAS is used by 21 interviewees, and 18 interviewees use both GFS and IPSAS for their decisions. As aforementioned, IPSAS-based accrual accounting is used by managers in the Indonesian public sector to prepare financial statements, and GFS is used for fiscal policy and international comparison. This finding suggests that more managers are involved in using IPSAS than GFS for their decisions, suggesting more use of financial statements for decision making compared with GFS. The use of both accrual systems is consistent with prior literature on the adoption of accrual-based IPSAS and GFS by many governments around the world (IMF 2014; Cavanagh et al. 2016; Dabbicco 2018; IPSASB 2018). The following quotations support the use of IPSAS (i.e. information from financial statements) and GFS in managers' decision making:

Accrual information is used, since our financial statements are based on accrual accounting, while our budget is still in cash basis … The main source of our information is the financial

statements, including the budget realisation report, balance sheet, the statement of changes in equity, and the operating statement. (Interviewee AH, Middle Manager)

We also support the Ministry of Finance with GFS data, such as economic growth and inflation, including other macroeconomic data to support to the Directorate General of Tax [in the Ministry of Finance]. (Interviewee AK, Middle Manager)

In addition, to explore the extent of use of accrual accounting for decision making, the interviewees are asked how often they use accrual information. Six frequencies emerge from the data analysis: daily, monthly, quarterly, semi-annually, yearly and any time when needed. Most interviewees state that they use accrual information daily, while the least use is any time that managers need accrual information. In the words of the interviewees:

We use accrual information, such as outstanding debt, almost daily. (Interviewee P, Middle Manager)

We use accrual information monthly for data reconciliation with the Ministry of Finance. (Interviewee AR, Middle Manager)

We report our achievement of government spending and performance [using accrual information] quarterly. (Interviewee H, Top Manager)

We use accrual information for the semi-annual adjustments during the preparation of financial statements. (Interviewee Z, Middle Manager)

The manifestation of our accrual is actually in the annual reports. (Interviewee C, Middle Manager)

I use accrual accounting every time I need it. It can be daily. It can be weekly. But clearly, we make a report every month. We make a general analysis every month. But the use of accrual accounting can be every week, every two weeks, even it can be every day during the end of the year. (Interviewee W, Middle Manager)

Further analysis reveals that the interviewees base their frequency of accrual accounting use on the timing of financial statement preparation. In Indonesia, data for financial statements are reconciled monthly and reported quarterly (in softcopy form), semi-annually (hardcopy) and

yearly (hardcopy). This finding leads to the development of a questionnaire instrument that separates the decision-making context of discharging accountability (i.e. financial reporting) and other decision situations to identify the extent of use of accrual accounting in decisions other than financial reporting. Prior studies suggest that the use of accrual accounting by government managers varies across countries. For example, Japanese government managers use accrual accounting daily for recording routine transactions (Kobayashi et al. 2016), while Canadian managers submit monthly accrual data to the accounting system (Pollanen and Loiselle-Lapointe 2012).

5.3 Individual Factors Influencing the Use of Accrual Accounting for Decision Making

The research question of this thesis is addressed by examining the individual and organisational factors that influence the use of accrual accounting for decision making. This section discusses the interview findings on the individual factors that affect the use of accrual accounting based on the TPB framework—namely, attitude towards the behaviour, subjective norm, PBC and intention. Discussion on the results for organisational factors is provided in Section 5.4.

5.3.1 Attitude towards the Behaviour

To identify the participants' attitudes towards the use of accrual accounting for decision making, the interviewees are asked whether accrual accounting information is useful for decision making and in which decision situations it is useful, and the benefits of using accrual information for decision making. Specific attention is devoted to the usefulness of accrual accounting because prior empirical studies focus on this advantage when examining the implementation of accrual accounting in the public sector (e.g. Jones and Puglisi 1997; Andriani et al. 2010; Kober et al. 2010). Regarding the usefulness of accrual information, all interviewees

mention that accrual information is useful for decision making. This finding is consistent with prior research revealing that managers perceive accrual accounting as useful for decision making (Pina et al. 2009; Andriani et al. 2010; Kober et al. 2010; Kobayashi et al. 2016). The following quotations most succinctly illustrate this:

> Accrual accounting is certainly useful because all this time we have been using cash basis, now we already use accrual basis. With accrual basis, we know how much our payables are, and we also know our receivables. So we know better [about our financial positions]. (Interviewee D, Middle Manager)

> So I think accrual information in the financial statements is very useful for decision making, particularly for planning and estimation. It will be very useful. Accrual is also useful for managing risk. For example, the risk levels, such as high, low or moderate, can be provided from the accrual information. (Interviewee K, Top Manager)

In regard to decision usefulness, the responses are diverse. All interviewees perceive that accrual accounting is useful for discharging accountability (i.e. financial reporting). Others mention its usefulness for budgeting purposes, revenue management, asset management, liability management and performance management. However, three interviewees argue that accrual accounting is less useful for cash flow management because of the application of cash-based information for this purpose.

In addition, the interviewees are asked about the benefits of using accrual accounting for decision making. Seven concepts emerge from the data analysis: relevant, better, transparent, enhancing accountability, accurate, comprehensive and international best practice. This finding is consistent with previous studies, which find that managers' attitudes are shaped by their consideration of the benefits of using accrual accounting, such as it being relevant for decision making (e.g. Kober et al. 2010), enabling a better system and decisions (e.g. Kobayashi et al. 2016), being more transparent (e.g. Connolly and Hyndman 2006), enhancing accountability (e.g. Ryan 1998), being more accurate (e.g. Robinson 1998), being more comprehensive (e.g.

IPSASB 2018) and aligning with international best practice (e.g. Athukorala and Reid 2003; Blöndal 2003). The interviewees express these benefits as follows:

> Accrual information is more relevant for decision making. We can see our true wealth, liabilities, accounts receivable and cash in the future. Our wealth is not only what we receive now, but also in the future. So accrual information is more complete and more comprehensive. (Interviewee E, Middle Manager)

> Accrual accounting is better than cash basis and relevant for public sector. Cash basis is just historical data, just for budget expenditure in one fiscal year only. But accrual accounting can be used for forecasting. It is more dynamic and not static. (Interviewee B)

> Accrual accounting is more transparent for cash planning and forecasting. (Interviewee AO, Middle Manager)

> Minister of Finance cares and supports the implementation of accrual accounting from the first place to enhance the accountability and transparency of the government financial operations and positions. (Interviewee AS, Top Manager)

> If I am not mistaken, some types of revenue transactions are still not accrual. They are not fully accrual. Well, maybe they need to be accelerated [to fully accrual]. So that later the figures displayed by the government [on the financial statements] can indeed be matched both in terms of the revenue and expenditure. So we can make decisions based on comparable, more accurate and more relevant data. (Interviewee L, Top Manager)

> Accrual accounting contains more comprehensive information [than cash approach]. (Interviewee A, Top Manager)

> Because we have a law mandating accrual accounting. We refer to the international best practices. So, if other countries use accrual accounting, we use it as a benchmark. (Interviewee C, Middle Manager)

Overall, the interview participants largely possess a positive attitude towards the usefulness of accrual accounting for decision making, in that they see accrual accounting as providing a more relevant and better system for public sector financial management.

5.3.2 Subjective Norm

To identify subjective norm, the interviewees are asked about the relevant stakeholders who would approve of the use of accrual accounting for decision making. The majority of interviewees mention the Ministry of Finance and audit office as dominant stakeholders who would expect them to use accrual accounting. Other stakeholders mentioned by the interviewees include citizens, international financing agencies, parliament, accounting standard setters, consultants, internal stakeholders (e.g. top management, colleagues and internal auditors), the central bank and creditors. These views are expressed by the interviewees in the following quotations:

> My internal stakeholders are my peers, supervisors, staff and internal auditors [inspectorate]. From external side, my stakeholders are the Ministry of Finance, the audit office, the finance supervisory board, the parliament, citizens and consultants or experts from other countries, such as Australia. (Interviewee S, Middle Manager)

> But from the international side … such as the international financing organisations, I think they also need it. They encourage our government to implement accrual accounting … Accrual accounting is needed not only for the government, but also for government stakeholders, such as the parliament, citizens, investors, government partners, lenders and creditors. They need to know how much Indonesian debt, assets and investments are, and so on. (Interviewee G, Top Manager)

> As for the audit office, its opinion is expected later. It is part of our effort to improve the financial report in order to be more accurate. As for the audit office's opinion, there will be the audit office's findings. We have to follow up the audit findings so that the opinion that will be given later will be the best one, the unqualified opinion. (Interviewee D, Middle Manager)

> In terms of accrual accounting, the transactions are already transparent and reported. It is [considered] good, but when the auditors [from the audit office] come, they check the substance [not only the financial reports]. For example, some money is lost, some goods are not found. So there is a problem with the substance. For instance, the Ministry of Sport. There

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are lost assets because the former officials took them and bring them home. The solution for this problem turns out to be not simple. (Interviewee K, Top Manager)

Because accrual accounting is a policy from the Ministry of Finance that we must use it [accrual accounting]. So whether we want it or not, like it or not, we have to use it. So there is no word 'choose', nothing like that. (Interviewee F, Middle Manager)

Externally … the IMF as our stakeholders of GFS expects us to use accrual information, so our data will link to their data. (Interviewee N, Middle Manager)

Additionally, international [financing] organisations, such as the World Bank and IMF, have a specific template of debt data for international comparison across countries and for GFS reporting … We are involved in the GFS data preparation with the World Bank/IMF, which I believe they already apply accrual system for their database. They provide us a template for international comparison across countries. We also followed training conducted by IMF regarding public sector debt in US, Vienna, Singapore and other countries. (Interviewee AS, Top Manager)

We sometimes consult accounting standard setter [KSAP] for several cases regarding accrual accounting. (Interviewee AA, Top Manager)

Externally, the central bank … as one of our stakeholders of GFS, expects us to use accrual accounting information, so our data will link to their data. (Interviewee AQ, Middle Manager)

This finding suggests the influence of subjective norm in shaping behaviour—particularly the Ministry of Finance and audit office, as two dominant external stakeholders of the Indonesian government managers, and internal stakeholders, such as top management. This is consistent with prior research suggesting the influence of various stakeholders on the adoption of accrual accounting in the public sector (e.g. Pallot 1997; Rahaman 2009; Sharma and Lawrence 2009; Frank and Gianakis 2010; Buhr 2012).

5.3.3 Perceived Behavioural Control

To examine PBC, the interviewees are asked about the supporting or inhibiting factors that would facilitate or inhibit them in using accrual information. Eleven factors reflecting the supporting and inhibiting factors emerge from the data analysis: accounting knowledge,

availability of financial resources, commitment and support from top management, accounting training, sufficiency of human resources, benefits of accrual accounting, accounting system, data reliability, mindset change, facilities or infrastructure, and rules and regulations. The findings are consistent with prior literature that suggests the importance of these factors in the use of accrual accounting (Pallot 1997; Paulsson 2006; Cohen et al. 2007; Jorge et al. 2007; Khan and Mayes 2009; Kober et al. 2010; Gårseth-Nesbakk 2011; Jagalla et al. 2011; Lande and Rocher 2011; Harun et al. 2015; Cavanagh et al. 2016; Nakmahachalasint and Narktabtee 2019).

All the interviewees discuss the support and commitment from top management as an important supporting factor in the use of accrual accounting for decision making, followed by the existence of rules and regulations regarding accrual accounting (stated by 44 interviewees) and the availability of financial resources (stated by 34 interviewees). For instance:

> The supporting factors on the use of accrual accounting are definitely the regulations and the system which require us to provide information regularly through reconciliation, meetings and others. Since I am the one who sign all documents relating to budget spending in my organisation, I need to know about accrual information. The other supporting factors are the leadership commitment or top management support, and the availability of financial resources. (Interviewee H, Top Manager)

> The facilitating factors on the use of accrual accounting are the support and commitment from the highest level of governments, including the president, vice-president and Minister of Finance, and sufficient budget allocations, including financial resources for accrual accounting training, supported by an online accounting system. Moreover, the laws and regulations require us [to] use accrual accounting. (Interviewee AS, Top Manager)

However, over half of the interviewees explain that lack of accounting training, insufficient skilled human resources, lack of exposure to the potential benefits of accrual accounting and unfamiliarity with accrual accounting are inhibiting factors in the use of accrual accounting for decision making. Unstable accounting systems and unreliable data are also mentioned by a

small number of interviewees as inhibiting factors. The following quotations establish the prevalence of the inhibiting factors pertaining to the use of accrual accounting for decision making:

The budget allocations or financial resources for accrual accounting are sometimes neglected. So we depend very much on the training held by the Ministry of Finance. (Interviewee B, Middle Manager)

The participants for the accrual training are restricted by the Ministry of Finance, only one or two people. Sometimes only one person, even though we have many staff members. We have many units here and every unit needs to know about accrual accounting. We should have an internal training of trainers in our organisation. However, it will not be as good as attending the accounting training [provided by the Ministry of Finance] directly. (Interviewee I, Top Manager)

The inhibiting factor is that many people do not understand accrual accounting. For example, in my organisation, I understand accrual accounting because I graduated from accounting major. My academic backgrounds are Bachelor and Master of Accounting. So I need to explain to the others [colleagues and staff] who are non-accountants. That is the difficult part. To them, accrual accounting system is complicated. They only know about budget realisation report, which is a cash system. With accrual information, we can do many things. For example, we can record assets. When we buy assets, we do not just record the cash disbursement. With accrual accounting, the asset value is recorded, including its depreciation. When we make an auction, we will remove the asset value from our balance sheet. (Interviewee D, Middle Manager)

First, people need to know about the benefits of accrual accounting in order to use it. For some people, they already knew about its benefits, but I think what we should do now is to define the utilisation of accrual accounting—not only saying that it is important, but how. This is the role of accountants, since we are the one who understand accrual information and we need to educate these people how to use it. (Interviewee N, Top Manager)

Our superiors do not understand accrual accounting, so they are not aware of its benefits, particularly for decision making. Actually, if they are aware about accrual accounting, they can use accrual information, especially the information from the financial statements. Our superiors need accrual accounting training so they will understand accrual information, hence using it for decision making. (Interviewee AR, Middle Manager)

The accrual accounting system changes a lot. The accrual accounting system is not stable. It changes all the time. The rules of the system sometimes change too. When the system changes, the data that we already entered also change. The accrual accounting applications change at least twice a year. The changes are so fast. We have not understood the previous system, but it already changed again. (Interviewee T, Middle Manager)

Private sectors use accrual information for their decision making because they have been using it since the beginning. In the case of Australia, its government has used accrual accounting a long time ago. We just implemented accrual accounting three years ago. We need more time to institutionalise accrual accounting in all government sectors, to link the system [with existing systems] and to educate the employees and the users—for example, managers in the fiscal office. (Interviewee AE, Middle Manager)

In addition, the interviewees have mixed perceptions regarding accounting knowledge and the availability of financial resources and facilities regarding accrual accounting. For instance, some interviewees state that the accounting knowledge of their employees is sufficient, while some say there is lack of accounting knowledge. Likewise, accrual accounting facilities are considered adequate by some interview participants, while others state otherwise. Three interviewees express their perceptions as follows:

The accounting knowledge of my staff is below average and the number of staff who understands about accrual accounting is also not enough. (Interviewee AG, Top Manager)

The accounting knowledge of my staff is not an obstacle because my employees here are actually the result of a selection and they have continuous training to carry out their duties. So accounting knowledge is not an issue. (Interviewee AC, Middle Manager)

There are three important reasons relating to the use of accrual information. First, the education or the accrual accounting knowledge of our staff is still low, including the number of skilled human resources. Next, the internet access is still limited in local areas. Lastly, the accrual accounting system has not been integrated with other systems across ministries/agencies. (Interviewee U, Top Manager)

Further analysis suggests that the alignment of accounting systems for reporting and budgeting purposes is needed to successfully use accrual information for decision making. An interviewee states:

> I think there should be a system alignment between the budgeting and the financial reporting systems. They should use one system of accrual accounting. If possible, a sustainable accounting system needs to be created, starting from the budgeting planning, then in the budget implementation process, until the financial reporting. It would be excellent. (Interviewee AR, Middle Manager)

Some interview participants provide additional comments relating to factors unique to Indonesia that facilitate or inhibit the use of accrual accounting for decision making, such as the relationship between accrual accounting and rewards/punishments for managers' performance, and the need for GFS-based accrual accounting for local governments. Two interviewees express their views as follows:

> We also use accrual-based financial statements as our performance measurement. For example, if the quality of our financial statement is low, which is indicated by the audit opinion from the audit office, we will get less income. We need to achieve an unqualified opinion if we want to receive full income. So accrual information is used as a kind of tool of reward and punishment regarding our work performance. (Interviewee AP, Top Manager)

> We have been instructed by our leaders to study the benefits of GFS on decision making, especially fiscal decisions in the regions. So the first stage of accrual accounting is the preparation of accrual-based financial statements. The second phase is the use or the utilisation of the financial statements for decision making, not just for accountability purpose. We also need to utilise GFS as a managerial report and decision making. The local governments are very interested with the benefits of GFS for their decision making. They are eager to use GFS. (Interviewee AO, Middle Manager)

Overall, these findings indicate the importance of PBC in the government managers' use of accrual accounting for decision making. Support and commitment from top management and rules and regulations concerning accrual accounting are suggested as the dominant facilitating factors in the use of accrual accounting for decision making. However, several inhibiting factors

need to be addressed to successfully use accrual accounting for decision making, such as the lack of accounting training and unstable systems leading to unreliable data. Unlike in other countries, such as Australia, which have implemented accrual accounting over several decades, Indonesia still needs time to enable its public sector managers to become familiar with accrual accounting. Additionally, alignment between the budgeting and reporting system is required to avoid confusion and differences in figures.

5.3.4 Intention

The interviewees are asked about their intention to use accrual accounting for decision making, and 42 respondents answer that they wish to continue using accrual information in the future. This question is not asked to the remaining three interviewees because of the limited time during their interviews. Further analysis reveals that managers have different reasons behind their intention to use accrual accounting, such as the fact that accrual accounting is compulsory because of the rules and regulations for financial reporting, so they wish to use it for decision making; accrual accounting improves the opinions of financial statements provided by the audit office; and accrual accounting is useful to prepare balance sheets. This finding confirms the importance of individual factors—that is, attitude (e.g. the usefulness of accrual accounting), subjective norm (e.g. perceived pressure from the audit office) and PBC (e.g. perceived influence of rules and regulations)—in shaping intention to use accrual accounting. In the words of two interviewees:

> It is a compulsory [by laws] that we use accrual accounting [for financial reporting] … We also have the regulation from our minister—the *Regulation of the Minister of Labour 13/2016 Regarding the Manual of Accrual Accounting and Financial Reporting.* The audit office will warn us if we do not use accrual accounting [for financial reporting] in our jobs. (Interviewee AM, Middle Manager)

> We will continue to use accrual accounting in the future. As stated in the laws and regulations, we have switched from cash to accrual accounting; thus, accrual accounting information will

be used from now on. I find accrual information as useful because it is more complete than the cash basis, by providing information such as amortisation of discount and premium for government bonds; hence, it is more relevant for us as government managers and will improve our decision making. (Interviewee AS, Top Manager)

5.4 Organisational Characteristics

This section discusses the interview findings on the organisational characteristics that influence the managers' use of accrual accounting for decision making. To identify organisational characteristics, the interviewees are asked about organisational structure, culture, strategy process and strategy content, and whether these characteristics influence their intention to use and actual use of accrual accounting. Organisational structure is examined by the presence of written procedures and guidelines regarding the use of accrual information. Forty-four interviewees state that their organisations have procedures and guidelines regarding the use of accrual accounting information. These interviewees explain that these procedures and guidelines influence their intention to use and behaviour of using accrual accounting. Further analysis reveals the influence of the government through the Ministry of Finance relating to the development of these procedures and guidelines. The interviewees express their views in the following quotations:

We comply with the *Law 17/2003* and *1/2004*, which require us to switch from a cash basis to accrual accounting. In particular, the government has stipulated the *Government Regulation 71/2010* regarding accrual accounting standards. We also follow the *Government Regulation 39/2007* [regarding state/regional cash management]. The Minister of Finance has also issued the regulations regarding accrual accounting. Afterwards, we issue a ministerial regulation regarding the standard operating procedures to implement accrual accounting. (Interviewee H, Top Manager)

Of course, these procedures and guidelines [regarding the use of accrual accounting] are influenced by external stakeholder. For example, assets or inventory [recording and evaluation]. Those are the most frequent audit findings from the audit office. (Interviewee B, Middle Manager)

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> These procedures and guidelines regarding accrual accounting influence my intention and action to use accrual accounting information. (Interviewee Z, Middle Manager)

This finding suggests that government organisations have highly institutionalised formal structures, as indicated by the existence of accrual accounting procedures and guidelines, and government organisations tend to comply with institutional pressures to adhere to legitimated practice of accrual accounting. This is consistent with prior literature that organisational structure is more open to institutional pressures (Ashworth et al. 2009) and organisations respond to institutional pressure by adopting a formal structure to demonstrate their proper action and gain legitimacy (Carpenter and Feroz 2001). Consistent with Frumkin and Galaskiewicz (2004), government organisations are more vulnerable to institutional pressures because their decision-making structures are more bureaucratised and centralised. The findings also provide support regarding the influence of organisational structure on managers' intention to use accrual accounting for decision making in the public sector.

To examine organisational culture, the interviewees are asked about their employees' beliefs regarding accrual accounting and whether they use accrual accounting while undertaking their jobs. Forty-one respondents state that their employees use accrual information in their jobs and believe that accrual information is useful. These interviewees further explain that these beliefs influence their intention and behaviour to use accrual accounting. Fifteen interviewees explain that their employees' perceptions about the usefulness of accrual accounting are influenced by external stakeholders, such as the central government through the Ministry of Finance, suggesting some level of influence of institutional pressures on organisational culture. The interviewees' quotations about the influence of the Ministry of Finance on employees' perceptions about the usefulness of accrual accounting, and the influence of organisational culture on intention to use and actual use of accrual accounting, are as follows:

My employees believe that accrual information is useful. Accrual accounting is required by the regulations from the Ministry of Finance to be applied in our financial statements. They indeed believe so. (Interviewee E, Middle Manager)

My employees believe that accrual information is useful. I think so. They consider accrual accounting is much better than cash accounting because accrual system is more complete by stating, for example, the debt amount in the balance sheet, which is not covered in the cash system … As required by the regulations [from the Ministry of Finance], we need to prepare accrual-based financial reports, particularly government debt. (Interviewee AS, Top Manager)

Because my staff believe that accrual accounting is useful, they are committed to use it and implement it in their work. (Interviewee V, Middle Manager)

Strategy process is assessed by the existence of a strategy or long-term plan to support the use of accrual information. Forty-two interviewees express their views that their organisation provides a plan (strategy) to support the use of accrual accounting, and this plan (strategy) influences their intention and behaviour to use accrual accounting. However, the process in formulating the strategy varies across organisations. Among these interviewees, 31 managers state that the plan (strategy) in their organisations is formulated hierarchically based on a top-down approach, while 11 respondents state that the formulation is a two-way approach using both top-down and bottom-up approaches. To quote some interviewees:

We refer to the laws and regulations [in formulating a strategy]. It is a top-down approach. Firstly, we make an accrual-based application system. Then, we educate our staff in the Ministry of Finance. Next, we conduct training to other ministries/agencies. (Interviewee E, Middle Manager)

Because our task is to prepare financial statements, our guidelines refer to the regulations from the Ministry of Finance. So our standard operating procedures are prepared based on the regulations from the Ministry of Finance. So it is hierarchal or [a] top-down approach. (Interviewee AE, Middle Manager)

There are discussions between all units involved [in formulating a strategy]. So the strategy is formulated using both a top-down approach through regulations and bottom-up approach by putting our plans in the blueprint. (Interviewee N, Middle Manager)

We refer to the plans and strategies from the Ministry of Finance. We have to follow them. (Interviewee AF, Middle Manager)

We comply with the laws and regulations in formulating a strategy. Strategy is developed based on a top-down approach. But, whenever we have an obstacle related to accrual accounting, we can make a suggestion to the top-level or bottom-up approach. We follow the rules, including the regulations from the Minister of Finance. (Interviewee AO, Middle Manager)

From the initial implementation of accrual accounting, we have a blueprint for accrual accounting. For example, we used a cash towards accrual as a transition from cash to full accrual system during 2004 to 2014. We implemented full accrual accounting in 2015. The strategy was formulated based on both [a] top-down approach through the laws and regulations and bottom-up approach by proposing improvement to make [the] accrual system better. Over time, the new regulations, which accommodate the proposal from the staff, will be issued to replace the old ones. (Interviewee AS, Top Manager)

The influence of institutional pressures on strategy process is revealed by the interviewees, who mention the Ministry of Finance and audit office as the prevalent stakeholders that influence the formulation of strategy. This is consistent with prior studies that identify an influence of institutional pressures on the organisational strategy process (Carpenter and Feroz 2001; Ashworth et al. 2009). Further, 42 interviewees state that the plan (strategy) concerning accrual accounting influences their intention and action to use accrual accounting. For example, an interviewee notes that:

The plan [strategy] to support accrual accounting influence my intention and action to use accrual accounting in conducting my duties. (Interviewee U, Top Manager)

This finding is consistent with prior research in the public sector that organisational process affects individuals' action (Carpenter and Feroz 2001; Dimitrijevska-Markoski and French

2019). However, it is unclear specifically how strategy process affects managers' intention and behaviour, other than following the rules and regulations.

To examine strategy content, the interview participants are asked about the involvement of external parties in promoting the use of accrual accounting. Forty-two interviewees state that external parties are involved in promoting the use of accrual accounting, and this involvement influences their intention and behaviour to use accrual accounting for decision making. As aforementioned, the dominant external stakeholders in promoting the use of accrual accounting are the audit office (through audit findings and opinions) and Ministry of Finance (through the minister regulations), as well as international financing organisations, such as the IMF and World Bank (through aid prerequisite) and consultants/experts (through seminars and workshops). As some interviewees state:

> The participants for the accrual accounting training are restricted by the Ministry of Finance—only one or two people. Sometimes only one person, even though we have many employees. We have many units here and every unit needs to know accrual … We often invite a representative from the Ministry of Finance to educate us about accrual. So everyone can participate and the new staff will get training. (Interviewee I, Top Manager)

> Every semester, I invite the representatives from the Ministry of Finance to come to my office as a speaker to help us regarding accrual accounting. Last time when we compiled data for synchronisation, we invited [our employees from] 27 districts to attend the meeting with the Ministry of Finance. (Interviewee T, Middle Manager)

> From the international perspective, we see many developments for accrual accounting. There are also recommendations from our consultants from the Australian government … Accrual accounting is an international best practice. The consultants from Australia encouraged us to implement accrual accounting. The accounting training is needed. The accounting background matters. More people who have accounting background will make accrual accounting faster and easier to implement. (Interviewee E, Middle Manager)

> Actually the accrual basis in Indonesia is not new, especially for corporations. They indeed already use accrual basis. The government financial system uses accrual accounting only recently. The government also learn and adopt it from Australia. The consultants or experts

[from Australia] are often invited to come here [for seminars/workshops]. (Interviewee G, Top Manager)

The interview findings also reveal that organisational strategy influences individuals' intention and behaviour. One interviewee stated:

In conducting our duties, we are also helped by the experts from other countries, such as Australia, the Australia's assistance to the Indonesian economy [Prospera]. So, to some extent, our involvement with these experts influence our intention and use of accrual information. (Interviewee AF, Middle Manager)

Overall, the interview findings suggest that organisational characteristics (structure, culture, strategy process and strategy content) influence managers' intention and behaviour to use accrual accounting for decision making. In particular, the written procedures and guidelines regarding the use of accrual accounting information (structure), employees' beliefs about the usefulness of accrual accounting (culture), long-term plan to support the use of accrual accounting (strategy process) and involvement of external parties in promoting the use of accrual accounting (strategy content) influence managers' intention and behaviour. Further analysis reveals that organisational characteristics are affected by institutional pressures from stakeholders, such as the Ministry of Finance and audit office. The interview findings regarding strategy process (a plan to support the use of accrual accounting for decision making) and strategy content (involvement of external parties in promoting the use of accrual information) suggest that these two aspects cannot be clearly separated in the Indonesian context. As such, these two aspects are combined into one variable of organisational strategy in the development of the questionnaire.

5.5 Additional Factors

In addition, this study explores how specific locations of organisations might affect the use of accrual accounting—particularly the differences in the Jakarta and non-Jakarta jurisdictions.

Three concepts emerge from the data analysis—namely, the differences in the number of accounting training sessions attended by employees, the number of human resources who understand accrual accounting, and the infrastructure adequacy. As discussed in Section 5.3.3 regarding PBC, 10 interviewees state that organisations located outside Jakarta receive less accrual accounting training for their staff because most of the training is conducted in Jakarta and their organisations have limited budget to attend the training. Further, the spots for participants outside Jakarta to attend the accounting training in Jakarta are limited, given the large number of regional areas where government entities are located (34 provinces with 415 regencies).

Eight interviewees state that there are differences in skilled human resources between organisations located in Jakarta and non-Jakarta, particularly in remote areas. In addition, six interviewees state that organisations located outside Jakarta, particularly in remote areas, have limitations in using accrual accounting because of limited facilities (infrastructure), such as a lack of internet to access the accounting system and limited computer equipment. This is consistent with the results from prior studies regarding the influence of organisational location on organisational behaviour, including the influence of organisational location on accounting practices (Cooper and Robson 2006) and the effect of organisational location on organisational behaviour (Spanos 2019). Examples of interview quotations regarding the influence of location on the use of accrual accounting are as follows:

> I think the location influence the use of accrual accounting. For example, employees in the local regions have difficulty in accessing the internet. Because we use an accounting system, the data uploading for reconciliation in order to prepare financial statements will be hampered. (Interviewee AM, Middle Manager)

> The location of the organisation indeed influences the use of accrual accounting information, particularly for regions that prepare accrual-based financial statements for the first time. Some regions have limited or no budget at all to fund their staff to attend the accrual accounting

training conducted in Jakarta. They also have limitations on the internet to access the accounting system and the skilled human resources. (Interviewee AE, Middle Manager)

We list our requests/proposals for accrual accounting training and send them to the accrual accounting coordinator namely the Ministry of Finance. It is not possible for us to conduct our own training [due to limited budget]. Sometimes we invite a key person from the Ministry of Finance to train us on accrual accounting. (Interviewee U, Top Manager)

Employees in the regional areas tend not to be concerned about the use of accrual accounting, while human resources in Jakarta are selected people with more complete facilities and computer equipment. The availability of skilled human resources is still limited in Java, let alone outside Java, particularly for a big organisation like us. So, even if the accounting system is good and the information technology facilities are supported, but if the competent human resources are not supported, I do not think accrual accounting can be implemented, even though the benefits of accrual accounting are many. (Interviewee AO, Middle Manager)

The findings provide evidence of location-related differences in facilitating the use of accrual accounting, which are included in the questionnaire instrument.

5.6 Chapter Summary

This chapter discusses the interview data analysis and findings. The purpose of the interviews is to identify the factors that affect managers' use of accrual accounting for decision making. Forty-five interviews are conducted with top- and middle-level government managers involved in the use of accrual accounting for decision making. The interview results reveal 12 decision making situations. The interviewees mostly use accrual accounting on a daily basis, but others use it for financial reporting purposes on a monthly and quarterly basis (for reconciliation) or semi-annually and annually (for financial statements). A combination of cash and accrual accounting information is used by the interviewees for their decision making. Two types of accrual accounting emerge from the data analysis: IPSAS and GFS.

The interview results indicate that individual and organisational factors influence managers' use of accrual accounting for decision making. The factors proposed in the theoretical

framework are supported by the interview findings. While much research has focused on the presence of institutional factors during the implementation of accrual accounting, the interview findings extend prior studies by providing evidence that individual factors (managers' personal attitudes towards accrual accounting, perceptions of stakeholders' expectations and perceptions of the control they have over the decisions) and organisational characteristics (structure, culture and strategy) influence the use of accrual accounting for decision making. These findings provide input into the development of a questionnaire instrument. Chapter 6 discusses the questionnaire results.

Chapter 6: Questionnaire Data Screening and Partial Least Squares Measurement Model

6.1 Introduction

This chapter presents the results of the questionnaire data screening and PLS measurement model. As discussed in Chapter 4, a questionnaire survey is conducted in the second stage of this study. The PLS path modelling method employed in this thesis consists of two parts: measurement and structural models. This chapter focuses on the first part of the PLS method (measurement model). The second part (structural model) is discussed in Chapter 7. Section 6.2 considers data preparation issues, including accounting for missing data, identifying univariate and multivariate outliers, and testing for univariate and multivariate normality of the data. Section 6.3 assesses the reliability and validity of the variables in the PLS measurement model, including the variable measurement specifications. Section 6.4 provides a summary of the chapter.

6.2 Data Preparation and Screening

This section describes the process of data preparation and screening. First, it discusses the analysis of the missing data. Second, it outlines the tests conducted for univariate and multivariate outliers. Third, it presents the univariate and multivariate normality tests for the independent and dependent variables.

6.2.1 Missing Data Analysis

The questionnaire data require preparation prior to analysis. As the first step of data screening, the accuracy of data entry is checked. As explained in Chapter 4, 11 questionnaires are

eliminated because of a high level of incompleteness (ranging from 13% to 64%). Apart from those, the open-ended questions of the questionnaire are dropped from the statistical analysis because of the extent of missing responses (96% to 99%), as many respondents leave them unanswered. After completing the above preparation of data, IBM SPSS 24 is used in outlier and normality tests, as discussed in Sections 6.2.2 and 6.2.3, respectively.

6.2.2 Univariate and Multivariate Outliers

This section discusses the process of identifying the outliers. There are two types of outliers— univariate and multivariate outliers. A univariate outlier is an extreme score on a single variable and can be identified by examining the frequency distribution of z scores (Kline 2015). Hair et al. (2014) define observations with standard scores of 2.5 or greater as univariate outliers for small samples (80 or fewer cases), and this threshold can increase up to 4 for larger sample sizes. In this study, univariate outliers are assessed using box plots with the use of SPSS. The box plots for each variable can also be used to inspect univariate outliers (Meyers et al. 2006; Hair et al. 2014; Hair et al. 2017). The box plots (see Appendix 9) indicate the univariate outliers as defined above for the main variables of the study. The potential univariate outliers (case numbers), as indicated in Appendix 9, are shown in Table 6.1.

According to Hair et al. (2014), outliers may be indicative of the characteristics of the population and should be retained because they represent an element of the population and reflect the real situation (Hair et al. 2017). When a researcher decides to delete outliers, she or he runs the risk of enhancing the multivariate analysis, yet restricting its generalisability (Hair et al. 2017). It may be premature to make a decision to delete a univariate outlier before examination for multivariate outliers is conducted (Raykov and Marcoulides 2008); hence, it is important to check if a univariate outlier is also a multivariate outlier before making any decisions.

Table 6.1: Univariate Outliers

Variable	Case Number of Univariate Outliers
Behavioural belief	8, 34, 45, 136, 177, 181, 190, 232, 262, 276, 343, 354, 426, 437, 478
Normative belief	N/A
Control belief	34, 45, 136, 180, 260, 262, 276, 354, 437, 448
Attitude	10, 34, 136, 177, 153, 204, 251, 262, 274, 295, 332, 335, 419, 437, 448, 471, 478, 481, 527
Subjective norm	34, 168, 177, 190, 212, 251, 262, 332, 399, 419, 437, 448, 478
PBC	181, 262, 332, 399, 448
Intention	65, 136, 217, 399, 415, 437, 448, 478
Behaviour	N/A
Organisational characteristics	177, 201, 262, 527
Usefulness	N/A
Location-related differences	N/A
Accounting knowledge	N/A

A common approach to detecting multivariate outliers is based on the Mahalanobis distance (MD) (Byrne 2016). The MD measure is calculated to assess whether there are any multivariate outliers, as this study involves a multivariate analysis. The MD measure is the distance between each observation and the overall mean for multivariate data. A chi-square distribution with a conservative alpha level of 0.001 is used to evaluate each case for the possibility of multivariate outliers (Meyers et al. 2006; Kline 2015). Thirteen cases (ID 34, 45, 136, 190, 201, 251, 262, 276, 332, 354, 399, 426 and 448) exceeding a value of 30.680 ($p < 0.001$) can be considered possible candidates for multivariate outliers. These 13 multivariate outliers are presented in Figure 6.1 and Table 6.2. Tabachnick and Fidell (2012) and Raykov and Marcoulides (2008) suggest determining whether univariate outliers also qualify as multivariate outliers before deciding to eliminate the outliers. In this study, the 13 cases of multivariate outliers also qualify

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as univariate outliers. Therefore, the cases of 34, 45, 136, 190, 201, 251, 262, 276, 332, 354, 399, 426 and 448 are removed from the dataset.[17]
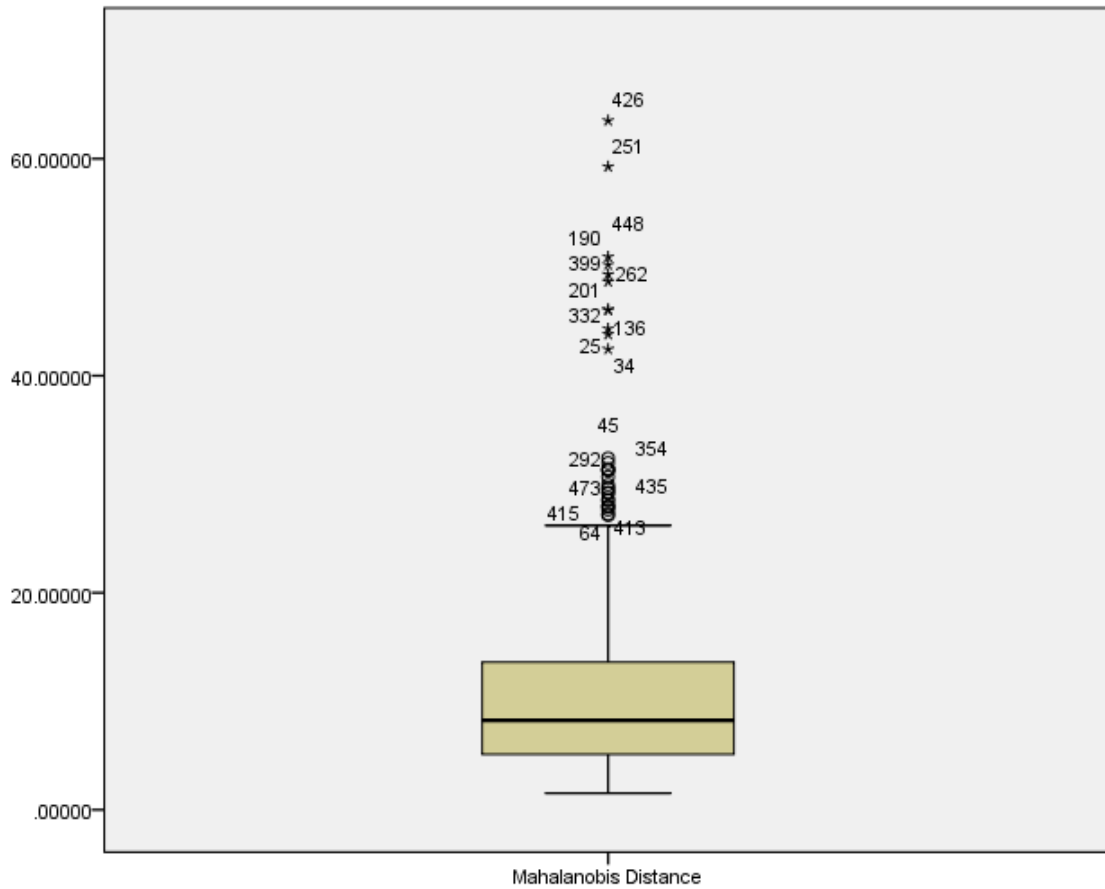
Figure 6.1: MD of Multivariate Outliers

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[17] The results are robust for inclusion of outliers in the dataset. The testing of the structural model with outliers in the dataset shows significant path coefficients. The R^2 value of behaviour increases from 0.126 with outliers in the dataset to 0.141 without outliers. Chapter 7 presents further discussion about these results.

Table 6.2: Multivariate Outliers Qualifying as Univariate Outliers

Case Number	MD Value
426	63.514
251	59.267
190	50.961
448	50.238
262	49.336
399	48.672
201	46.116
136	46.037
332	43.814
34	42.455
276	31.411
45	31.320
354	31.312

6.2.3 Data Distribution: Univariate Normality and Multivariate Normality

Many types of statistical techniques assume normal distributions of the variables to be tested. This study checks the normality assumption by assessing univariate and multivariate normality. The Kolmogorov–Smirnov and Shapiro–Wilk test can be used to test univariate normality (Hair et al. 2014; Hair et al. 2017). As shown in Table 6.3, the significance values of the variables for both the Kolmogorov–Smirnov and Shapiro–Wilk test are below 0.05, indicating non-normal distribution of data (Hair et al. 2014; Hair et al. 2017). Appendix 10 displays a graphical presentation of the histograms of each variable, comparing the observed data values with a normal distribution. This shows that the individual variables are not normally distributed.

Table 6.3: Univariate Normality Statistic Tests

Variable	Kolmogorov–Smirnov		Shapiro–Wilk	
	Statistic	Sig.	Statistic	Sig.
Behavioural belief	0.246	0.000	0.826	0.000
Normative belief	0.130	0.000	0.916	0.000
Control belief	0.159	0.000	0.882	0.000
Attitude	0.189	0.000	0.832	0.000
Subjective norm	0.183	0.000	0.794	0.000
PBC	0.102	0.000	0.943	0.000
Intention	0.228	0.000	0.833	0.000
Behaviour	0.089	0.000	0.945	0.000
Organisational characteristics	0.130	0.000	0.916	0.000
Usefulness	0.123	0.000	0.918	0.000
Location-related differences	0.123	0.000	0.934	0.000
Accounting knowledge	0.193	0.000	0.933	0.000

The multivariate normality of a dataset can be assessed by examining Mardia's (1970) coefficient for multivariate kurtosis. The critical ratio (CR) value represents Mardia's normalised estimate of multivariate kurtosis. A value of CR above 5 indicates data that are non-normally distributed (Byrne 2016). According to the Mardia test results shown in Table 6.4, the data are deemed highly non-normally distributed (multivariate kurtosis value of 28.236 and CR value of 17.377). This finding leads to consideration of a multivariate modelling technique (PLS) that deals with testing non-normal data. The bootstrapping method in PLS is a superior technique to deal with non-normal data (Byrne 2016; Hair et al. 2017).[18]

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[18] The assumptions of linearity, homoscedasticity and independence are also checked by graphing the residuals and seeking any unusual patterns (Chatterjee and Simonoff 2013; Field 2013). The most useful way to graph the residuals is with the predicted values on the *x*-axis and residuals on the *y*-axis, plotting each residual value against the corresponding predicted value. These assumptions are met if the residuals are randomly scattered around the centre line of zero, with no obvious pattern. The scatterplot of residuals from SPSS in Appendix 11 shows that there is no fitted pattern in the residual plot, indicating a linear relationship between the independent and dependent variable; the variances of residuals are relatively constant along the range of predictors, suggesting homoscedasticity; and a random pattern suggests independent observations (Belsley et al. 2005; Chatterjee and Simonoff 2013; Field 2013).

Table 6.4: Multivariate Normality Test

Variable	Mardia's Coefficient	
	Kurtosis	CR
Behavioural belief	0.261	1.204
Normative belief	-0.321	-1.476
Control belief	0.267	1.232
Attitude	0.842	3.878
Subjective norm	4.619	21.274
PBC	-0.354	-1.628
Intention	0.806	3.713
Behaviour	-0.961	-4.424
Organisational characteristics	0.325	1.498
Usefulness	-0.413	-1.903
Location-related differences	1.129	5.198
Accounting knowledge	0.190	0.877
Multivariate	28.236	17.377

6.3 Partial Least Squares Measurement Model Results

This study uses SmartPLS version 3 (Garson 2016; Hair et al. 2017) to test the hypothesised relationships among the variables outlined in the study. The PLS method employs a path diagram that illustrates the relationships among variables to visually display the research hypotheses to be tested (Hair et al. 2017). A path model consists of two parts: (i) the measurement model, which describes the associations between latent variables and their indicators (referred to as an outer model), and (ii) the structural model, which constitutes the relationships between latent variables (referred to as an inner model) (Tabachnick and Fidell 2012; Hair et al. 2014; Byrne 2016; Hair et al. 2017). Relationships between variables are indicated by path coefficients, which express the strength of the causal relationships between the variables. The PLS technique simultaneously estimates both the measurement and structural models. This section discusses the first part of the PLS method (measurement model).

6.3.1 Measurement Specifications

The measurement model shows the relationships between the constructs and their measures (indicators). There are two types of measurement specifications: reflective and formative measurement models (Hair et al. 2017). In a reflective measurement model, constructs are assumed to cause their items or indicators (Kline 2015). Therefore, causality flows from a construct (called a reflective construct) to its indicators (called reflective indicators). In terms of directionality, with a reflective measurement model, the direction of the arrows is from the reflective construct to its reflective indicators (Hair et al. 2017). A typical example of a reflective construct is 'attitude', which is measured by eliciting responses to indicators (Ajzen 2011). In contrast, a formative measurement model describes the relationships where indicators cause a construct (Kline 2015), and so the direction of the arrows is from the indicators (called formative indicators) to a construct (called a formative construct) (Hair et al. 2017). An example of a formative construct is socioeconomic status, whose indicators might be education, type of occupation, income and place of residence. These indicators are somewhat independent, and they combine to form the construct of socioeconomic status.

In this study, the research model consists of 11 latent variables and one observed variable. Among those latent variables, 10 variables are measured by reflective indicators (i.e. behavioural belief, normative belief, control belief, attitude, subjective norm, PBC, intention, behaviour, organisational characteristics, location-related differences and usefulness) and one variable is measured by formative indicators (i.e. behaviour). Latent variables refer to variables that are not directly observable, but are instead inferred from other observed variables (indicators) (Hair et al. 2014). Next, there is an observed variable—accounting knowledge. An observed variable (or measured variable), as opposed to a latent variable, is a variable that can be observed and directly measured by the researcher. Apart from that, organisational size and

location are included in the model as observed control variables. A summary of variable measurements is presented in Table 6.5.

Table 6.5: Variable Measurement Methods

Variable	Variable Type	Method of Measurement
TPB Variables		
Behavioural belief	Latent variable	Composite measure ($\sum$q4q5)
Normative belief	Latent variable	Composite measure ($\sum$q6q7)
Control belief	Latent variable	Composite measure ($\sum$q8q9)
Attitude	Latent variable	Four reflective indicators (Q3 Items 1 to 4)
Subjective norm	Latent variable	Four reflective indicators (Q3 Items 5 to 8)
PBC	Latent variable	Four reflective indicators (Q3 Items 9 to 12)
Intention	Latent variable	Two reflective indicators (Q3 Items 13 to 14)
Behaviour	Latent variable	Eleven formative indicators (Q1)
Organisational Variable		
Organisational characteristics	Latent variable	Nine reflective indicators (Q10)
Additional Variables		
Location-related differences	Latent variable	Three reflective indicators (Q11)
Usefulness	Latent variable	Eleven reflective indicators (Q2)
Accounting knowledge	Observed variable	Average value of managers' accounting knowledge
Control Variables		
Organisational size	Observed variable	Dummy variable
Organisational location	Observed variable	Dummy variable

The assessment of the PLS measurement model is conducted by examining the reliability and validity of the constructs in the model. It is worth noting that the reliability and validity tests between reflective and formative constructs are different. While reliability and validity tests are needed for reflective constructs, there is no requirement for reliability examination for formative constructs because the measures (indicators) capture different dimensions of the construct, and thus are not necessarily correlated (independent causes) (Hair et al. 2017). Further, a formative construct is assumed to be error free; hence, reliability calculations are not applicable (Diamantopoulos 2006, 2011). Instead, a formative construct is assessed by multicollinearity issue and the significance of the formative indicators (Petter et al. 2007; Hair

et al. 2017). The next sections discusses the reliability and validity of the constructs in the PLS measurement model.

6.3.2 Reliability Test

This section presents the results of the reliability tests for the reflective constructs. Reliability refers to the internal consistency of a measure (Hair et al. 2014) and 'is concerned with the homogeneity of the items within a scale' (DeVellis 2016, p. 51). In evaluating the reliability of each construct, the Cronbach's alpha[19] and composite reliability[20] measurement are employed in this study (Hair et al. 2017). According to Ajzen (n.d.-c, p. 1), 'internal consistency is not a requirement of the behavioral, normative, and control belief composites because different accessible beliefs may well be inconsistent with each other'.[21] As such, reliability tests are not provided for the composite measures of behavioural, normative or control beliefs.[22]

The results of the PLS measurement model show that the values of Cronbach's alpha and composite reliability for all the reflective constructs are above 0.70, except for location-related differences (*LRD*). Further analysis reveals that the factor loading of one indicator of *LRD* (Q11L1) is 0.012, which is below the threshold of 0.7; hence, it is eliminated (Hair et al. 2017). After this elimination, the value of Cronbach's alpha for *LRD* is 0.755, confirming an acceptable internal consistency reliability (Hair et al. 2014; Hair et al. 2017). Table 6.6 presents the values of Cronbach's alpha and composite reliability for the reflective constructs.

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[19] Cronbach's alpha is a conservative measure of internal consistency reliability based on the intercorrelations of the observed variables, with a value of 0.7 considered the lower limit of acceptability (Hair et al. 2014, 2017).

[20] Composite reliability is another measure of internal consistency reliability by incorporating the loading weights of the indicator variables, whose values are interpreted in the same way as Cronbach's alpha (Hair et al. 2017).

[21] Calculation of Cronbach's alpha and composite reliability produces a value of 1 for all the belief composites.

[22] De Leeuw et al. (2015, p. 131) suggest that '[t]here is no reason to assume that beliefs are internally consistent. People can and often do hold contradictory beliefs, both positive and negative, about a given behavior. It is therefore inappropriate to compute an internal consistency coefficient, such as Cronbach's alpha, for a set of beliefs'.

Table 6.6: Reliability Test of Reflective Constructs

Construct	Cronbach's Alpha	Composite Reliability
Attitude	0.927	0.948
Subjective norm	0.753	0.845
PBC	0.884	0.920
Intention	0.937	0.970
Organisational characteristics	0.888	0.910
Location-related differences	0.755	0.891
Usefulness	0.924	0.935

6.3.3 Validity Test

Validity refers to the 'extent to which a measure or set of measures correctly represents the concept of study' (Hair et al. 2014, p. 3). In brief, 'validity addresses the question of how well we measure social reality using our constructs about it' (Neuman 2014, p. 3). The results of the validity tests in this section are divided into two parts. First, the results from the validity tests of reflective constructs are presented. For the first part, convergent validity[23] and discriminant validity[24] are employed to test the validity of reflective constructs. Second, the validity of the formative construct is examined. For the second part, multicollinearity and the significance of the formative indicators are evaluated.

6.3.3.1 Reflective Constructs

Following Hair et al. (2017), this study tests the convergent validity by examining the factor loadings[25] and average variance extracted (AVE).[26] As a rule of thumb, the factor loadings of

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[23] Convergent validity represents 'the extent to which a measure correlates positively with alternative measures of the same construct' (Hair et al. 2017, p. 112).

[24] Discriminant validity is 'the extent to which a construct is truly distinct from other constructs by empirical standards' (Hair et al. 2017, p. 115).

[25] Factor loadings show 'correlation between the original variables and the factors' (Hair et al. 2014, p. 90).

[26] AVE is 'a summary measure of convergence among a set of items representing a latent construct' (Hair et al. 2014, p. 601).

the indicators should be 0.7 or higher, whereas AVE values higher than 0.50 indicate acceptable convergent validity (Hair et al. 2014). Tables 6.7 and 6.8 show the factor loadings of the TPB main constructs (attitude, subjective norm, PBC and intention) and TPB composite constructs (behavioural belief, normative belief and control belief), respectively. The results show that factor loadings of all items (in bold) load on their relevant constructs with factor loadings above 0.70, except for one item (Q3SN4) of subjective norm (see Table 6.7). The closer the indicators' loadings are to 1, the more they influence the constructs (Hair et al. 2017).

Table 6.7: Factor Loadings and Cross-loadings of TPB Main Constructs

Construct	*A*	*SN*	*PBC*	*I*
Attitude (*A*)				
Q3A1: Accrual information is relevant	**0.916**	0.392	0.547	0.624
Q3A2: Accrual information is worthwhile	**0.916**	0.442	0.576	0.630
Q3A3: It is rewarding to use accrual information	**0.917**	0.477	0.602	0.685
Q3A4: It is enjoyable to use accrual information	**0.873**	0.531	0.705	0.696
Subjective norm (*SN*)				
Q3SN1: Most of my stakeholders think that I should use accrual information	0.392	**0.825**	0.374	0.413
Q3SN2: Most of my stakeholders would expect me to use accrual information	0.454	**0.789**	0.422	0.420
Q3SN3: Most of my stakeholders use accrual information	0.376	**0.754**	0.452	0.408
Q3SN4: Most other government organisations use accrual information	0.322	**0.662**	0.427	0.356
Perceived behavioural control (*PBC*)				
Q3PBC1: It is easy to use accrual information	0.521	0.467	**0.821**	0.597
Q3PBC2: I am confident in my use of accrual information	0.715	0.556	**0.875**	0.762
Q3PBC3: I have control over the use of accrual information	0.556	0.451	**0.878**	0.620
Q3PBC4: I have sufficient authority to use accrual information	0.498	0.402	**0.868**	0.614
Intention (*I*)				
Q3I1: I am willing to use accrual information	0.712	0.505	0.711	**0.969**
Q3I2: I am committed to using accrual information	0.701	0.517	0.761	**0.971**

* Factor loadings are shown in bold. ** Cross-loadings are the comparison between factor loadings and any other loadings in the same row.

Table 6.8: Factor Loadings and Cross-loadings of TPB Belief Composites

Construct	BB	NB	CB
Behavioural belief (*BB*)	**1**	0.687	0.639
Normative belief (*NB*)	0.687	**1**	0.652
Control belief (*CB*)	0.639	0.652	**1**

* Factor loadings are shown in bold. ** Cross-loadings are the comparison between factor loadings and any other loadings in the same row.

Factor loadings are also conducted for other reflective constructs—organisational characteristics, usefulness and location-related differences. The evaluation of the factor loadings shows that all items of these constructs load on their relevant constructs with factor loadings above 0.70, except for two items (Q10OC1 and Q10OC2) of organisational characteristics (see Table 6.9). Following Hair et al. (2017), the study retains all items with loadings between 0.40 and 0.70—Q3SN4, Q10OC1 and Q10OC2—because they do not cause AVE to fall below the threshold of 0.50 (see Table 6.10). As aforementioned, one item of *LRD* (Q11L1) is eliminated because its loading (0.012) is below the cut-off point of 0.7 and outside the range between 0.4 and 0.7.

Table 6.9: Factor Loadings and Cross-loadings of Other Reflective Constructs

Construct	OC	U	LRD
Organisational characteristics (*OC*)			
Q10OC1: Written procedures are important in guiding the actions of our employees	**0.530**	0.216	0.258
Q10OC2: We formulate procedures based on the rules and regulations	**0.623**	0.286	0.195
Q10OC3: We have written procedures regarding accrual accounting	**0.734**	0.337	0.158
Q10OC4: We provide training to support accrual accounting	**0.749**	0.269	0.109
Q10OC5: Our employees use accrual accounting in carrying out their tasks	**0.744**	0.195	0.154
Q10OC6: Our employees perceive that accrual information is useful	**0.756**	0.259	0.151
Q10OC7: When we develop strategy, it is planned in detail	**0.792**	0.324	0.143
Q10OC8: Strategy develops through a process of negotiation with other organisations	**0.742**	0.297	0.199
Q10OC9: We have strategy in place to support accrual accounting	**0.850**	0.352	0.247
Usefulness (*U*)			
Q2U1: Budget planning	0.291	**0.727**	0.091
Q2U2: Budget implementation	0.310	**0.730**	0.116
Q2U3: Revenue management	0.293	**0.771**	0.162
Q2U4: Asset management	0.267	**0.729**	0.106
Q2U5: Liability management	0.283	**0.706**	0.093
Q2U6: Performance measurement	0.317	**0.700**	0.075
Q2U7: Risk management	0.295	**0.751**	0.059
Q2U8: Assessing cash flow needs	0.304	**0.801**	0.168
Q2U9: Investment management	0.305	**0.792**	0.131
Q2U10: Fiscal and macroeconomic matters	0.292	**0.776**	0.119
Q2U11: Provision of goods/services	0.234	**0.796**	0.098
Location-related Differences (*LRD*)			
Q11L2: Organisations in Jakarta have more human resources who understand accrual accounting than do organisations in remote areas (e.g. Papua and Maluku)	0.228	0.145	**0.901**
Q11L3: The facilities and infrastructure (e.g. equipment and internet access) related to the use of accrual accounting systems in Jakarta are better than those in remote areas (e.g. Papua and Maluku)	0.203	0.118	**0.892**

* Factor loadings are shown in bold. ** Cross-loadings are the comparison between factor loadings and any other loadings in the same row.

The study also tests the convergent validity by calculating AVE. Table 6.10 provides the AVE statistics for the reflective constructs in the PLS measurement model. All AVE values for these constructs are above 0.5 (Hair et al. 2017). The AVE value for the single-item construct is fixed at 1.00 (Hair et al. 2017). The results from the factor loadings and AVE tests indicate acceptable convergent validity for all reflective constructs.

Table 6.10: AVE Statistics of Reflective Constructs

Construct	AVE
Behavioural belief	1.000
Normative belief	1.000
Control belief	1.000
Attitude	0.820
Subjective norm	0.578
PBC	0.741
Intention	0.941
Organisational characteristics	0.533
Usefulness	0.568
Location-related differences	0.803

Next, to assess the discriminant validity of the reflective constructs, cross-loadings and the Fornell–Larcker criterion can be employed (Hair et al. 2017). With the cross-loading method, an indicator's loading on the associated construct should be greater than any of its cross-loadings on other constructs. The results from the cross-loadings examination show that each item loads more highly on its assigned construct than on other constructs (see Tables 6.7, 6.8 and 6.9).

The Fornell–Larcker criterion is the second approach to examine discriminant validity, by comparing the square root of the AVE values with the latent variable correlations. As a threshold, the square root of each construct's AVE should exceed its correlation with other constructs (Hair et al. 2017). The Fornell–Larcker criterion results show that the values of the square root of AVE (in bold) are greater than the corresponding correlations for each value (see

Tables 6.11, 6.12 and 6.13). These results confirm acceptable discriminant validity for all reflective constructs.

Table 6.11: Fornell–Larcker Criterion of TPB Main Constructs

Construct	A	SN	PBC	I
Attitude (*A*)	**0.906**			
Subjective norm (*SN*)	0.510	**0.760**		
Perceived behavioural control (*PBC*)	0.673	0.549	**0.861**	
Intention (*I*)	0.728	0.527	0.549	**0.970**

Table 6.12: Fornell–Larcker Criterion of TPB Composite Constructs

	BB	NB	CB
Behavioural belief (*BB*)	**1.000**		
Normative belief (*NB*)	0.687	**1.000**	
Control belief (*CB*)	0.639	0.652	**1.000**

Table 6.13: Fornell–Larcker Criterion of Other Reflective Constructs

	OC	U	LRD
Organisational characteristics (*OC*)	**0.730**		
Usefulness (*U*)	0.388	**0.753**	
Location-related differences (*LRD*)	0.241	0.147	**0.896**

6.3.3.2 Formative Construct

The validity of a formative construct is analysed by examining the significance of the weights of indicators (called outer weights) and multicollinearity problem (Petter et al. 2007; Hair et al. 2017). First, the analysis on the weightings of formative indicators is conducted. The weights reflect each indicator's relative contribution to the formative construct (Hair et al. 2017). To determine whether each indicator significantly contributes to form the construct, the bootstrapping procedure in the SmartPLS is applied to check if their outer weights are significantly different from zero. The bootstrapping results show that all indicators of the

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formative construct are significant (see Table 6.14), indicating the relative importance of each indicator to the construct.

Another important criterion for evaluating the validity of a formative construct is checking that there are no high correlations between indicators (multicollinearity issue). To measure collinearity, the variance inflation factor (VIF) is calculated (Petter et al. 2007; Hair et al. 2017). Large VIF values indicate a high degree of collinearity. As a cut-off point of a potential collinearity problem, the VIF values of indicators should be below 5 (Hair et al. 2017). The results from SmartPLS show that all VIF values of items composing the formative construct are below 5, indicating no multicollinearity problem (see Table 6.14).

In addition to the significance of outer weights of indicators and multicollinearity issue, principal component analysis (PCA) can be used to detect convergent validity for a formative construct (Chin 1995; Petter et al. 2007). PCA from the SPSS software extracts all items into one construct of behaviour with factor loadings above 0.7 (see Table 6.14).[27] The results from the validity tests above suggest that all formative indicators are valid measures of their formative construct.

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[27] Hair et al. (2017) also suggest that the convergent validity of formative constructs can be assessed by comparing the correlation of the formatively measured construct with a reflective measure of the same construct—called redundancy analysis. Appropriate reflective measures of the construct can be identified from prior research. However, this approach cannot be employed in this study because previous studies are mostly conducted on country-specific references, such as Australia (Kober et al. 2010), and do not measure the use of accrual accounting for decision making as a formative indicator. Therefore, relevant reflective scales from prior research are unavailable; hence, a redundancy analysis is not feasible.

Table 6.14: Validity Tests of the Formative Construct (Behaviour)

Behaviour (Use of Accrual Accounting for Decision Making)	Bootstrap		VIF	PCA
	Outer Weight	Sig.		Item Loading
Q1B1: Budget planning	0.107	0.000	2.701	0.749
Q1B2: Budget implementation	0.109	0.000	2.732	0.742
Q1B3: Revenue management	0.124	0.000	2.338	0.760
Q1B4: Asset management	0.108	0.000	2.117	0.720
Q1B5: Liability management	0.104	0.000	2.550	0.743
Q1B6: Performance measurement	0.159	0.000	2.641	0.736
Q1B7: Risk management	0.139	0.000	2.588	0.761
Q1B8: Assessing cash flow needs	0.129	0.000	2.492	0.815
Q1B9: Investment management	0.142	0.000	3.660	0.799
Q1B10: Fiscal and macroeconomic matters	0.109	0.000	3.365	0.785
Q1B11: Provision of goods/services	0.076	0.000	2.444	0.798

6.4 Chapter Summary

This chapter discusses the questionnaire data preparation and screening, including treatment of missing data, detection of univariate and multivariate outliers, and data normality issues. Following data screening, the analysis of the PLS measurement model is conducted. PLS is employed to deal with non-normally distributed data and comprehensive models with many structural relationships among variables, among others. The PLS measurement model involves reliability and validity tests of the variables examined in this thesis, before examining the relationships between latent variables and testing hypotheses in Chapter 7.

Reliability tests are conducted by examining the Cronbach's alpha and composite reliability for all reflective constructs, except for behavioural, normative and control belief composites (De Leeuw et al. 2015; Ajzen n.d.-c) and behaviour as a formative construct (Diamantopoulos 2006, 2011; Hair et al. 2017), which are not a necessary feature. Convergent validity (factor loadings and AVE) and discriminant validity (cross-loadings and the Fornell–Larcker criterion) are used to assess the validity of reflective constructs. To examine the validity of the formative construct,

the significance of formative items, multicollinearity (VIF) and PCA are measured. After deleting one item of *LRD* (Q11L1) that does not meet the reliability and validity criteria, the results of the reliability and validity tests confirm that all constructs are acceptable in the PLS measurement model. Chapter 7 discusses the PLS structural model, hypotheses testing and study findings.

Chapter 7: Partial Least Squares Structural Model, Hypotheses Testing and Discussion

7.1 Introduction

This chapter presents the results of the PLS structural model, including the hypotheses testing, followed by the discussion. Chapter 6 discusses the analysis of the PLS measurement model, which confirms that the model meets the required properties of acceptable reliability and validity. The results of the measurement model are a necessary condition to proceed to the PLS structural model, which is the focus of this chapter. Section 7.2 highlights the descriptive statistics for the variables in the PLS structural model. Section 7.3 presents the results of the PLS structural model, along with hypotheses testing and additional analysis. Section 7.4 provides a discussion on the results of the PLS structural model and hypothesis testing. Section 7.5 concludes the chapter.

7.2 Descriptive Statistics

The descriptive statistics (minimum and maximum values, mean, median and standard deviation) for the variables in the PLS structural model are provided in Table 7.1. These descriptive statistics are obtained from the summated scores for each variable. The individual scores of each variable are calculated as the average values of all questions in that category. Each variable is measured on a seven-point scale, except for accounting knowledge, which is scaled from 1 (basic) to 10 (advanced). All other variables are scaled from 1 to 7. The belief constructs are composite variables, as explained in Chapter 6. The measurement of the belief

constructs (behavioural, normative, and control beliefs) is explained in Chapter 4.[28] Apart from that, organisational size (0 = up to 50 employees and 1 = over 50 employees) and location of organisation (0 = non-Jakarta and 1 = Jakarta) are included in the model as control variables.

Table 7.1: Descriptive Statistics of Variables in the PLS Structural Model

Variable	Mean	Median	Min	Max	Std Dev.
Behavioural belief	163.83	176.00	16.00	196.00	36.64
Normative belief	529.70	546.00	112.00	686.00	138.84
Control belief	489.30	510.00	108.00	588.00	98.81
Attitude	6.25	6.50	3.00	7.00	0.85
Subjective norm	6.41	6.50	3.00	7.00	0.65
PBC	5.55	5.75	2.00	7.00	1.12
Intention	6.05	6.00	1.50	7.00	1.03
Behaviour	3.59	3.27	1.00	7.00	1.76
Organisational characteristics	6.15	6.22	2.89	7.00	0.75
Usefulness	5.20	5.55	1.00	7.00	1.55
Location-related differences	5.74	5.67	3.00	7.00	0.97
Accounting knowledge	6.40	7.00	1.00	10.00	1.90
Organisational size	0.71	1	0	1	0.454
Organisational location	0.80	1	0	1	0.397

The mean values of the variables are different from their scale's mid-points, reflecting the skewness of the variables, as discussed in Chapter 6. The means of all variables are less than their medians, indicating that the data distribution is left-skewed, except for intention, behaviour and location-related differences, which are skewed to the right. Theoretically, with normally distributed data, most of the observations are spread within 3 standard deviations on each side of the mean (Hair et al. 2017). The mean of the use of accrual accounting for decision making (behaviour) is 3.59, suggesting a low level of use of accrual accounting for decision making by the Indonesian government managers (between occasionally = 3 and frequently = 4). Appendix 12 provides the descriptive statistics of each decision situation.

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[28] The items used to develop the belief constructs are shown in Q4 to Q9 in the attached questionnaire in Appendix 4.

Among all decision situations, managers use accrual accounting mainly for budget purposes—that is, budget implementation and planning, with means of 4.48 and 3.95, respectively—thereby indicating a need for accrual information to forecast and disburse financial resources allocated for annual activities. The least use of accrual accounting is for fiscal and macroeconomic matters and investment management, with means of around 2.7, which may suggest that managers consider accrual accounting not relevant for these decisions; hence, about half of the managers never use it for investment (56%) or fiscal (53%) decisions.

The main constructs of TPB (attitude, subjective norm and PBC) have high mean values (6.25, 6.41 and 5.55, respectively) above their scale's mid-points, suggesting that managers possess positive attitudes towards accrual accounting; that most managers perceive that their stakeholders expect them to use accrual accounting; and, to some extent, that most managers perceive that they have control over the use of accrual information for decision making. Managers also exhibit high intention to use accrual accounting for decision making, suggesting that managers are committed and willing to use accrual information in their works. Further, the high mean value of organisational characteristics (6.15) indicates that the combination of written procedures, strategy and employees' belief about the benefits of accrual accounting is important in the use of accrual accounting for decision making. Further, the additional variables (usefulness, location-related differences and accounting knowledge) have high mean values (5.20, 5.74 and 6.40, respectively), suggesting that managers perceive accrual accounting as useful for decision making, consider that there are differences based on organisational location (e.g. human resources and facilities) and acquire sufficient accounting knowledge (above average).

7.3 Partial Least Squares Structural Model and Hypotheses Testing Results

The study tests the hypotheses developed in Chapter 3 based on the PLS structural model. The structural model (also called the inner model) is conducted after the reliability and validity of the constructs are established in the PLS measurement model evaluation. The structural model displays the relationships among constructs, including statistical evaluations, such as path coefficients, their significance levels and R^2 (explained variance)[29] values. All results are standardised, indicating that all values can be compared with each other, such as to determine the strongest effects among constructs (Hair et al. 2017).

The PLS structural model should be developed based on the underlying concepts (theory), logic or practical experiences observed by the researcher (Hair et al. 2017). In this study, the structural model is mainly based on the TPB framework and extends it by incorporating organisational characteristics. The model includes the control variables of organisation size (small and large, based on the number of employees) and organisation location (Jakarta and non-Jakarta). This study extends the model by adding the additional variables of accounting knowledge, location-related differences and usefulness of accrual accounting.

Assessment of the PLS structural model is conducted by employing the bootstrapping technique (Hair et al. 2017). To examine the statistical significance of the path coefficients in the structural model, this study uses the bootstrapping sampling method with 1,000 sample replacements. This approach aligns with prior studies (Mahama 2006; Ferreira et al. 2010; Thoradeniya et al. 2015) and the sample replacement is larger than that of Tashakor et al. (2019), who use 500 samples. The results of the assessment of the structural model (i.e. path coefficients), as well as

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[29] R^2 is a measure of the PLS model's predictive accuracy. It represents the amount of variance in the endogenous construct explained by all the exogenous constructs linked to it. R^2 ranges between 0 and 1, with higher values indicating higher levels of accuracy or a better prediction of dependent variables.

their statistical significance and R^2, are presented in the next sections. Following Hall (2008), this study also aims to minimise the effect of the endogeneity issue by incorporating control variables into the model (size and location).

7.3.1 Hypothesis 1: Individual Factors and the Use of Accrual Accounting for Decision Making

The results of the PLS structural model in Figure 7.1 support Hypothesis 1 (H1) that Indonesian public sector managers' attitudes, perceptions of social pressure and behavioural control, mediated by intention, influence their use of accrual accounting for decision making.[30] In particular, there is a significant positive association between managers' attitudes and intention to use accrual accounting for decision making, with a standardised path coefficient (β) of 0.686 and p-value (p) less than 0.001. Similarly, there is a significant positive relationship between subjective norm and intention ($\beta = 0.081$, $p < 0.05$). There is also a significant positive association between PBC and intention ($\beta = 0.461$, $p < 0.001$). The relationship between managers' intention and behaviour of using accrual accounting for decision making is positively significant ($\beta = 0.237$, $p < 0.001$). The values of R^2 of intention to use accrual accounting for decision making and the use of accrual accounting for decision making are 0.667 and 0.052, respectively.[31] This suggests a strong explanatory power of the three factors for intention. However, the effect of intention on the actual use of accrual accounting, while significant, appears to have a relatively low explanatory power.

The results above confirm the TPB concept that human behaviour can be predicted by attitude towards a behaviour, perceived social pressures from significant referents to perform the

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[30] The results are robust for inclusion of outliers in the dataset. The testing of the structural model with outliers in the dataset shows significant path coefficients, with R^2 of intention and behaviour of 0.695 and 0.055, respectively.

[31] The results are robust for inclusion of control variables in the H1 testing model.

behaviour and perceptions about the ease or difficulty of performing the behaviour, mediated by intention (Ajzen 1991, 2005, 2011; Ajzen and Fishbein 1980). The results are also consistent with prior studies in the public sector. For example, Kroll (2015) discovers that German public sector managers' intention to use and actual use of performance information is significantly associated with their positive attitudes towards performance indicators and social norms embracing such use. Similarly, Ho et al. (2011) conclude that Taiwanese public sector managers' intention to participate in training is significantly determined by their favourable attitudes, positive subjective norm and PBC relating to participation in training, leading to their increased participation in training.

In addition, there is a significant positive relationship between managers' behavioural beliefs and attitudes, between normative beliefs and subjective norm, and between control beliefs and PBC, with path coefficients of 0.696 ($p < 0.001$), 0.484 ($p < 0.001$) and 0.557 ($p < 0.001$), respectively. The results are consistent with Ajzen's (2005, 2011) proposition of a link between individual factors and their underlying beliefs. This result is also consistent with Kobayashi et al. (2016), who find that public sector managers in Japan have positive attitudes towards accrual accounting because they believe in the benefits of accrual accounting for decision making, such as improving financial performance indicators and supporting investment decisions. In regard to subjective norm, Arnaboldi and Lapsley (2009) discover that the use of accrual accounting by local government finance managers in Scotland is influenced by their belief in the need to comply with symbolic or formal tasks to be seen as legitimate to citizens. According to Khan and Mayes (2009) and Cavanagh et al. (2016), facilitating factors—such as support from the highest level of management in public sector organisations and appropriate regulations and guidelines—are essential to endorse accounting change and ensure that accrual accounting information is used for decision making. While previous studies examining accrual accounting in the public sector largely focus on institutional factors, this study provides evidence that

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managers' individual factors significantly influence their intention to use accrual accounting for decision making, and in turn their actual use in the public sector.
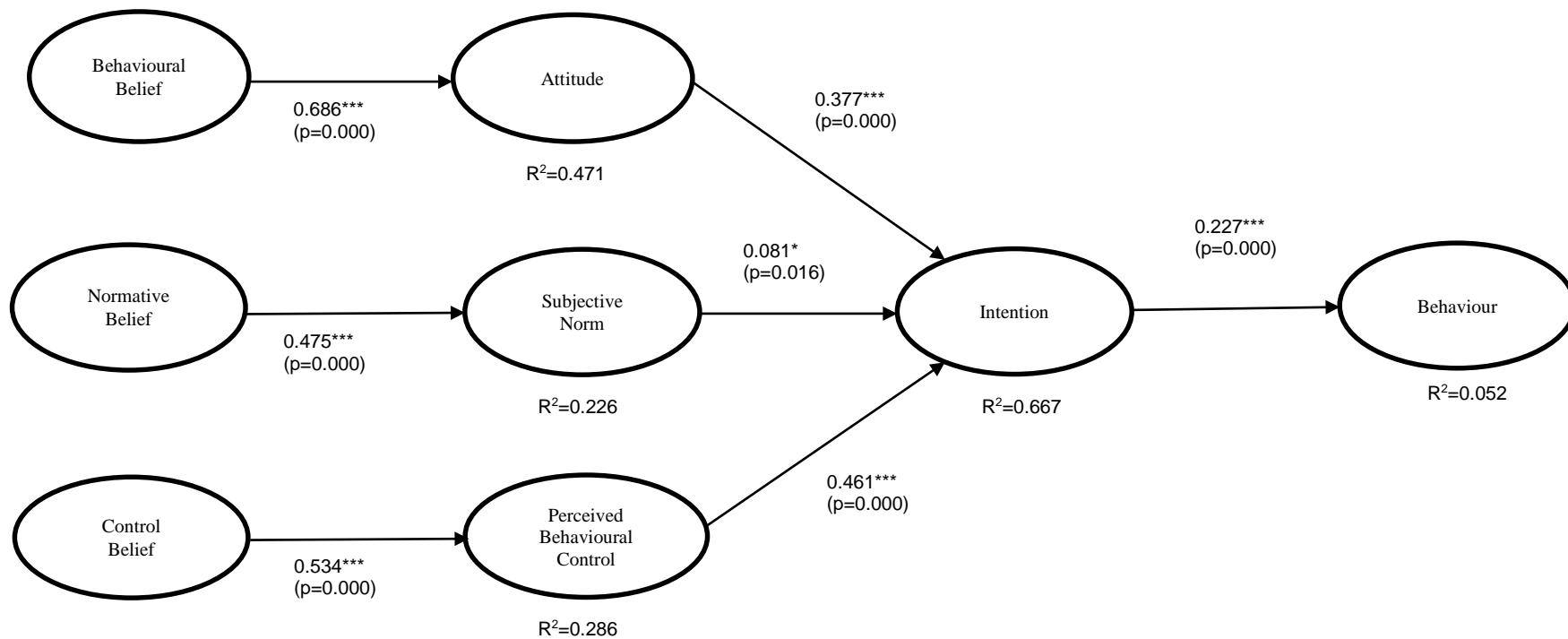
Figure 7.1: Structural Model of Hypothesis 1 (H1)—TPB Framework

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.3.2 Hypothesis 2a: Organisational Characteristics and Intention to Use Accrual Accounting for Decision Making

The results of the PLS structural model in Figure 7.2 provide support for Hypothesis 2a (H2a) that organisational characteristics influence Indonesian public sector managers' intention to use accrual accounting for decision making. Specifically, there is a significant positive association between organisational characteristics and managers' intention to use accrual accounting for decision making, with a path coefficient of 0.084 ($p < 0.05$). The R^2 of intention increases to 0.672 from 0.667 in the original TPB framework (Hypothesis 1). The R^2 of behaviour also slightly increases to 0.056 from 0.052 in the H1 model. In addition, all relationships of the individual constructs of the TPB framework remain significant.[32]

This finding is consistent with prior studies that the extension of additional variables to the TPB framework is useful to increase the predictive efficacy of the model (Ajzen 1991; Ajzen and Fishbein 1980). It is expected that the characteristics of organisations where the managers work influence their intention to use accrual accounting for decision making. The results of this study suggest that organisational characteristics, such as structure, culture and strategy, are important in influencing managers' intention to use accrual accounting for decision making in the public sector. The findings align with prior studies in the public sector (Pillay et al. 2017) and private sector (Teo et al. 2003; Son and Benbasat 2007; Liu et al. 2010), which find that behavioural intention is influenced by organisation characteristics. Section 7.3.7 provides additional analysis regarding which components of organisational characteristics (structure, culture and strategy) affect managers' intention.

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[32] The results are robust for inclusion of outliers in the dataset. The testing of the structural model with outliers in the dataset shows significant path coefficients, with R^2 of intention and behaviour of 0.697 and 0.055, respectively.
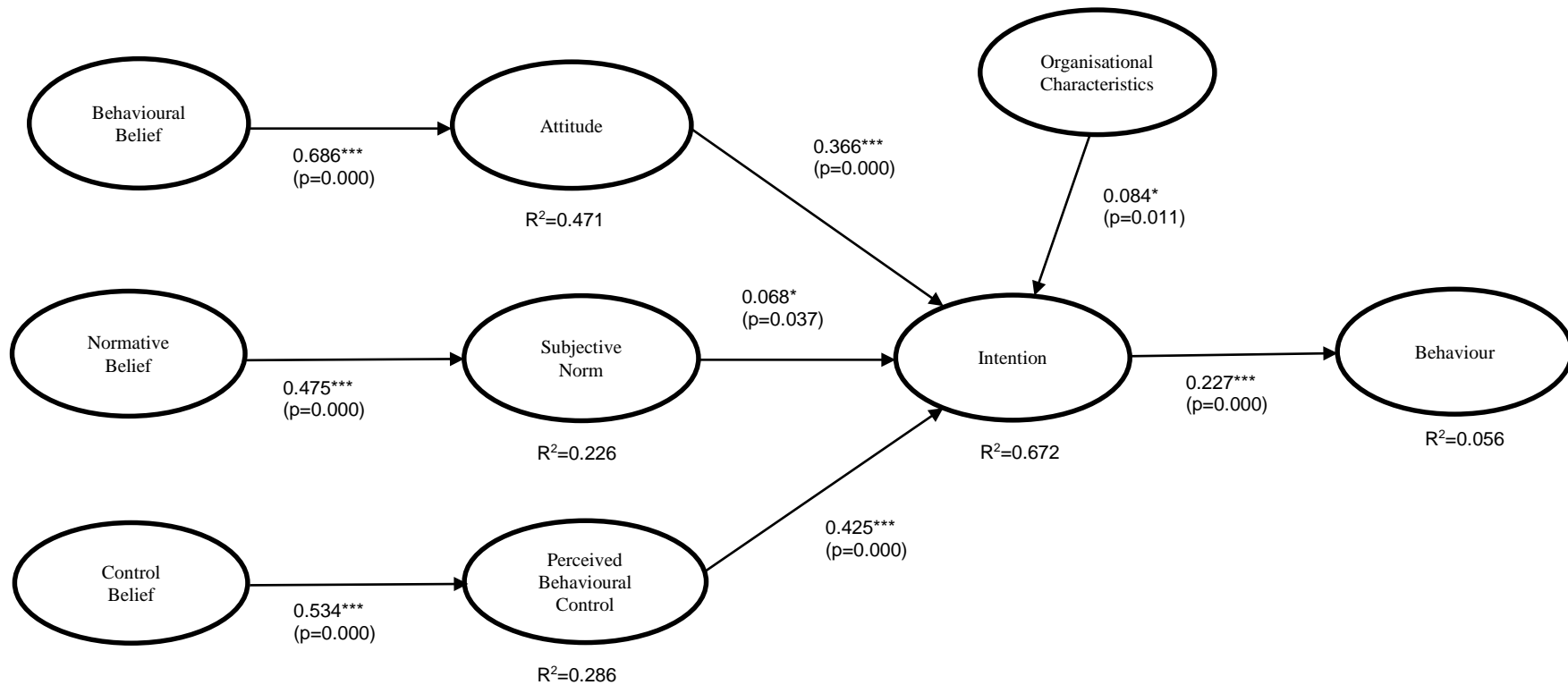
Figure 7.2: Structural Model of Hypothesis 2a (H2a)—Organisational Characteristics and Intention

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.3.3 Hypothesis 2b: Moderating Effect of Organisational Characteristics on Intention and Behaviour

The results of the PLS structural model in Figure 7.3 support Hypothesis 2b (H2b) that organisational characteristics moderate the relationship between managers' intention and use of accrual accounting for decision making. Notably, there is a significant positive moderating effect of organisational characteristics in the relation between managers' intention and use of accrual accounting for decision making, with a path coefficient of 0.163 ($p < 0.001$). Similarly, there is a significant direct effect of organisational characteristics on the use of accrual accounting for decision making, with a path coefficient of 0.305 ($p < 0.001$). The value of R^2 of behaviour increases to 0.130, which is higher than that in the H1 (0.052) and H2a (0.056) structural models. In addition, all relationships of the individual constructs of the TPB framework remain significant.[33] The findings suggest that the link between managers' intention and behaviour to use accrual accounting for decision making is stronger when the organisations where the managers work have a combination of strong organisational structures (e.g. written procedures), culture (e.g. employees' belief in the usefulness of accrual accounting) and strategy (plan in place to support accrual accounting).

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[33] The results are robust for inclusion of outliers in the dataset. The testing of the structural model with outliers in the dataset shows significant path coefficients, with R^2 of intention and behaviour of 0.695 and 0.126, respectively.
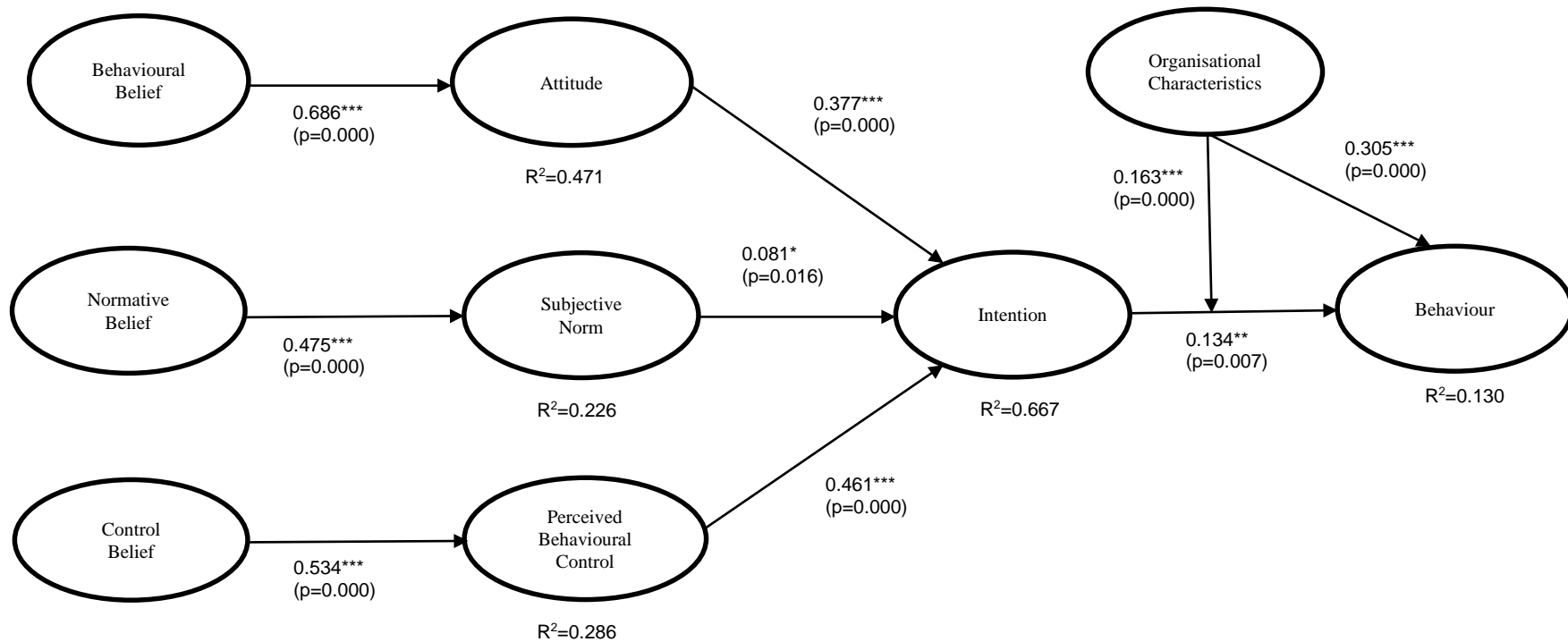
Figure 7.3: Structural Model of Hypothesis 2b—Moderating Effect of Organisational Characteristics on Intention and Behaviour

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

The inclusion of control variables (see Figure 7.4) in the structural model for hypotheses testing increases the R^2 of behaviour to 0.139, while maintaining significant path coefficients of the individual and organisational characteristics variables.[34] The results show that organisational location (Jakarta versus non-Jakarta) as a control variable influences managers' use of accrual accounting for decision making. The association between organisations located outside Jakarta (Medan, Bandung and Yogyakarta) and the use of accrual accounting for decision making (behaviour) is positively significant, with a path coefficient of 0.126 ($p < 0.01$), suggesting a higher level of accrual accounting use for decision making by organisations located outside Jakarta than organisations located in Jakarta. In other words, managers working in organisations outside Jakarta are more involved in using accrual accounting for their decision making, compared with those in Jakarta. This is surprising, as managers located in Jakarta are expected to use accrual accounting more for their decisions. As previously mentioned, Jakarta is home to organisations responsible for accrual accounting activities, including accounting training, making managers working in Jakarta more exposed to accrual accounting and more likely to use accrual accounting for decision making. However, the finding is contrary to this prediction. In addition, the relationships between location and intention are not significant, suggesting a direct effect of location on the use of accrual accounting for decision making. However, organisational size does not significantly affect managers' intention and behaviour, suggesting that there are no differences in managers' intention and behaviour to use accrual accounting for decision making between managers working in small organisations (up to 50 employees) and managers working in large organisations (more than 50 employees).

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[34] The results are robust for the inclusion of outliers in the dataset.
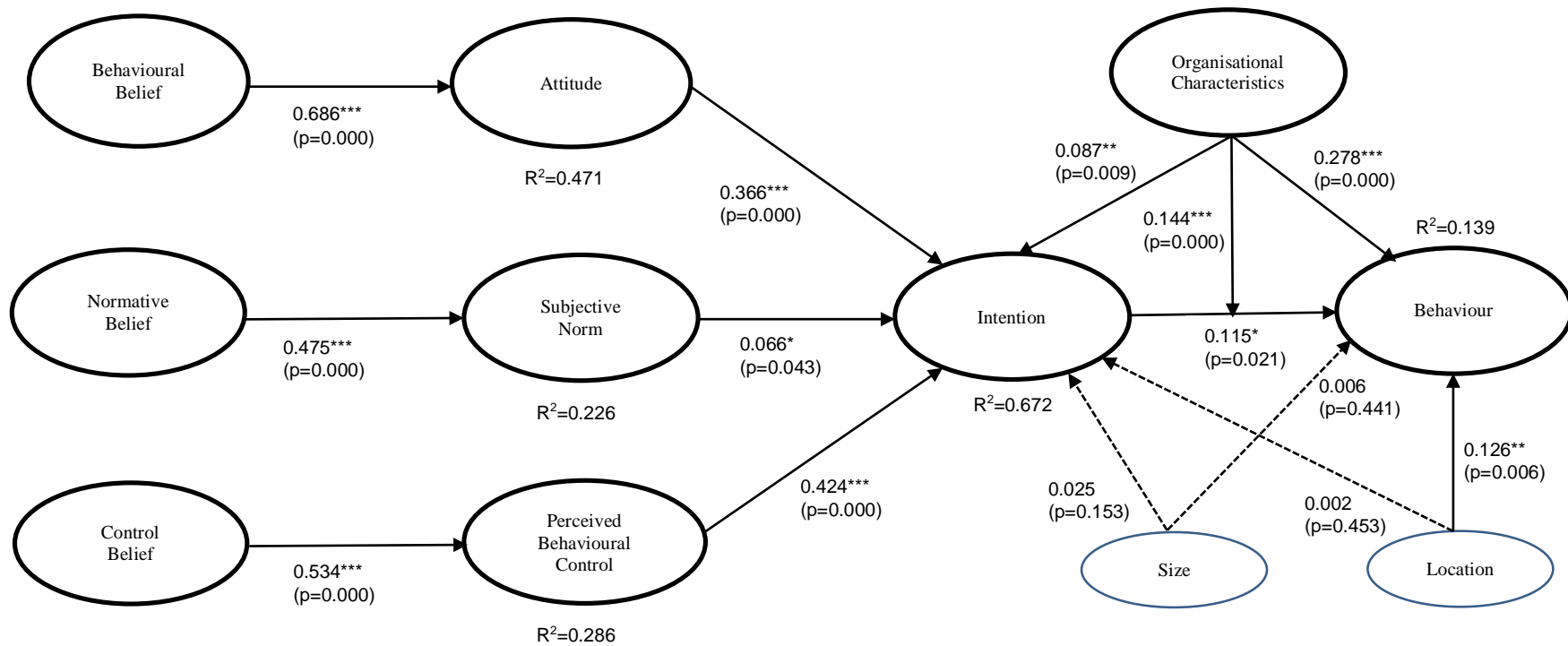
Figure 7.4: Structural Model of Hypotheses Testing with Control Variables

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.3.4 Integrated Structural Model of the Use of Accrual Accounting for Decision Making

Apart from organisational characteristics, this study also includes additional variables in the TPB framework, as follows: (i) managers' perceived usefulness of accrual accounting for decision making (usefulness); (ii) managers' perceptions of differences in human resources, training and facilities regarding accrual accounting between Jakarta and remote areas (location-related differences); and (iii) managers' accounting knowledge. The reasons for adding these variables are as follows. First, previous studies suggest that accrual accounting provides useful information for decision making (e.g. Jones and Puglisi 1997; Andriani et al. 2010; Kober et al. 2010) and usefulness is related to individuals' attitudes, which may influence their intention (Ajzen 2011). Second, the interview findings highlight that differences because of organisations' locations may also affect managers' behaviour because lack of capable human resources, less accrual training and insufficient equipment or facilities may influence managers' use of accrual accounting more significantly in remote areas than in Jakarta. Third, according to Ajzen (2005), the TPB recognises the potential importance of background factors, such as education and knowledge, that may influence the people hold. Based on this argument, managers' background factors (i.e. accrual accounting knowledge) may also influence managers' intention and behaviour, mediated by their underlying beliefs. In doing so, the integrated PLS structural model includes these additional variables and is shown in Figure 7.5 (labelled as an integrated model).

The results reveal a significant relationship between usefulness and attitude, with a path coefficient of 0.132 ($p < 0.001$). This aligns with previous studies regarding managers' positive attitudes towards accrual accounting when they perceive that accrual accounting is useful for decision making (e.g. Jones and Puglisi 1997; Andriani et al. 2010; Kober et al. 2010). The addition of the usefulness variable increases the R^2 of attitude from 0.471 (Hypothesis 2b) to

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0.486 (integrated model), suggesting that almost half of the variance in attitude is explained by its antecedent of behavioural belief and the external variable of managers' perceived usefulness of accrual accounting for decision making (usefulness).

Similarly, the results show significant positive associations between accounting knowledge and individual beliefs—behavioural, normative and control beliefs—with path coefficients of 0.176 ($p < 0.001$), 0.149 ($p < 0.001$) and 0.137 ($p < 0.01$). The values of R^2 of behavioural, normative and control belief are 0.031, 0.022 and 0.019, respectively. Individual variables and organisational characteristics remain significant in influencing the use of accrual accounting for decision making. The findings are consistent with Ajzen's (1991, 2011) finding that background factors, such as accounting knowledge, influence intention and behaviour, mediated by individual beliefs.

The relationship between location-related differences and intention is also significant, with a path coefficient of 0.054 ($p < 0.05$), suggesting that differences in the perceptions of human resources, training and facilities regarding accrual accounting between Jakarta and remote areas influence managers' intention to use accrual accounting for decision making. However, the association between location-related differences and the use of accrual accounting for decision making is not significant. In this model, the relationship between location (organisations located outside Jakarta) and the use of accrual accounting for decision making is significant, with a path coefficient of 0.122 ($p < 0.01$), indicating that managers working in organisations located outside Jakarta (Medan, Bandung and Yogyakarta) are more involved in using accrual accounting for decision making than are those in Jakarta.

Similarly, there is a significant positive association between organisational characteristics and managers' use of accrual accounting for decision making, with a path coefficient of 0.273 ($p < 0.001$). This coefficient is higher than that of organisational characteristics and intention

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($\beta = 0.080$, $p < 0.05$) or that of a moderating effect between intention and behaviour ($\beta = 0.142$, $p < 0.001$). This result suggests that the strongest effect of organisational characteristics occurs when they are connected directly to behaviour, rather than through intention or as a moderating variable between managers' intention and use of accrual accounting for decision making.

Overall, the integration of these additional variables (usefulness, location-related differences and accounting knowledge) into the PLS structural model increases the R^2 of intention and behaviour to 0.675 and 0.141, respectively. This indicates that a large proportion of the variance of intention is jointly explained by individual antecedents (attitude, subjective norm and PBC), organisational characteristics and location-related differences. Individuals' intention, organisational characteristics and location-related differences explain 14.1% of the variance in behaviour of using accrual accounting for decision making. The explanatory power of the model in this study is strong and significant for each variable, except for the belief constructs (less than 5%), as stated before. Table 7.2 and Figure 7.5 show the R^2 of each dependent variable in the PLS integrated structural model.[35]

Table 7.2: R^2 of PLS Integrated Structural Model

Variable	R^2
Behavioural beliefs	3.1%
Normative beliefs	2.2%
Control beliefs	1.9%
Attitude	48.6%
Subjective norm	22.6%
PBC	28.6%
Intention	67.5%
Behaviour	14.1%

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[35] The results are robust for inclusion of outliers in the dataset. However, the R^2 of behaviour decreases to 0.134 with outliers in the dataset.
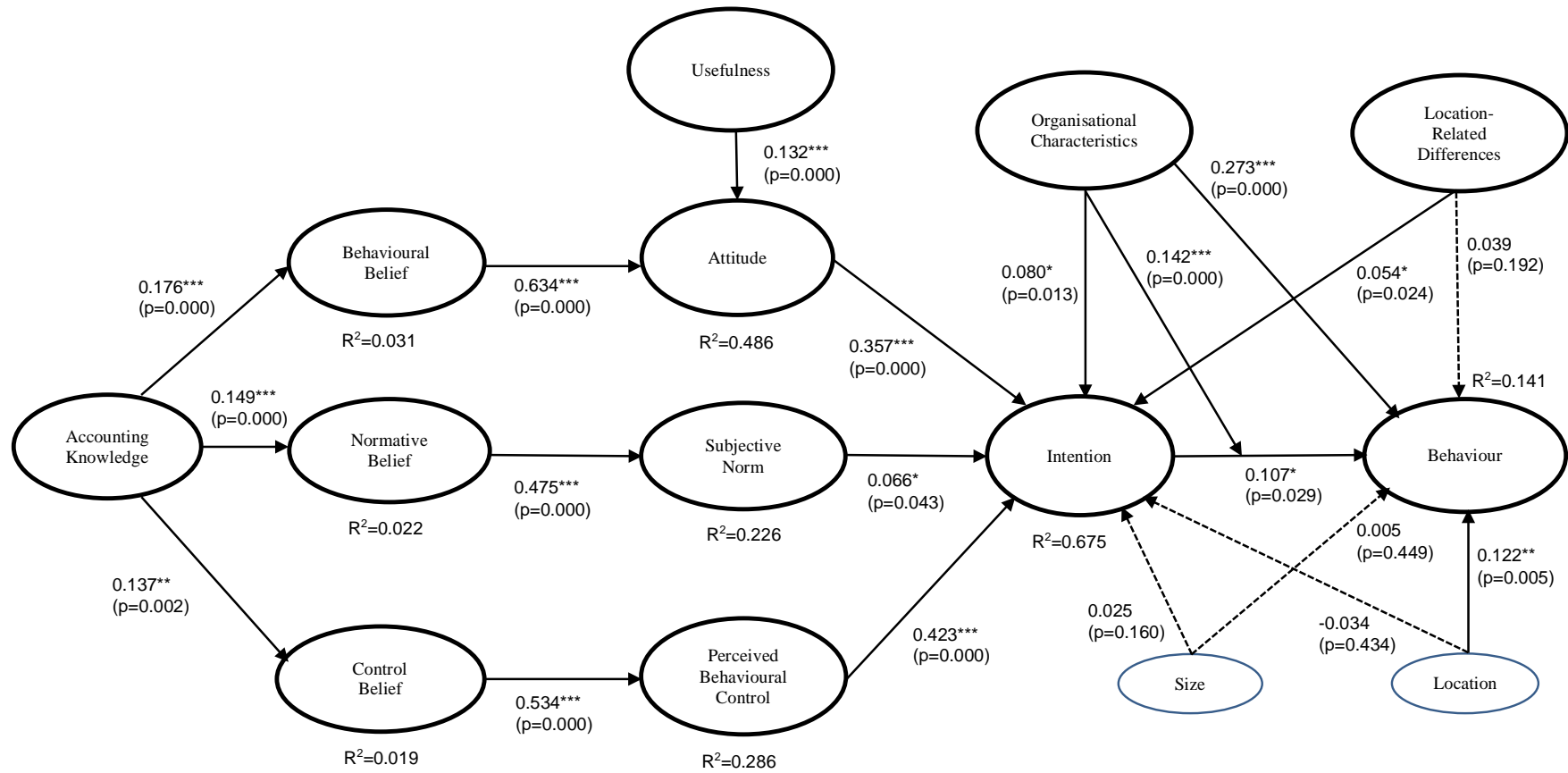
Figure 7.5: Integrated Structural Model of the Use of Accrual Accounting for Decision Making

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.3.5 Sample Size and Statistical Power Tests

One of the most fundamental issues in PLS structural equation modelling is minimum sample size (Kock and Hadaya 2018). A widely used method to estimate minimum sample size for PLS is the 10 times rule method (Hair et al. 2017; Kock and Hadaya 2018). As a rule of thumb, the minimum sample size for PLS structural equation modelling should be larger than 10 times the maximum number of arrows pointing at any latent variable in the model. In this thesis, the maximum number of links pointing to a latent variable is nine, taken from nine indicators to measure organisational characteristics. Following this method, the minimum sample size of more than 90 participants is fulfilled, indicating an acceptable sample size.

Further, following Hair et al. (2017) and Kock and Hadaya (2018), to achieve a statistical power of 80% with R^2 values of at least 0.10, a 5% significance level and nine arrows pointing at a latent variable, this study needs at least 150 participants. Given that this thesis tests the PLS model with a sample size of 507 and R^2 of 14.1% for the use of accrual accounting for decision making, a statistical power of 80% is achieved, confirming an acceptable statistical power for the PLS structural model.

7.3.6 Multi-group Analysis

PLS multi-group analysis (MGA) is conducted to determine if the PLS structural model significantly differs between groups (Garson 2016; Hair et al. 2017). This study compares the subsamples of managers who use GFS (called 'GFS users'—104 respondents) and IPSAS (called 'IPSAS users'—403 respondents) for their decision making. This multi-group comparison analysis is conducted because of the application of these two accrual accounting systems simultaneously by the Indonesian government since 2015. The purpose of this analysis is to determine whether there are differences in managers' use of accrual accounting for decision making when different accrual accounting systems are used.

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The MGA results in Figure 7.6 show that all path coefficients are significant for managers who use IPSAS-based accrual accounting for their decision making (IPSAS users), except for the relationships between location-related differences and behaviour and between subjective norm and intention. The findings suggest that individual factors (except subjective norm) influence the intention to use accrual accounting for decision making by IPSAS users. Further, organisational characteristics also affect managers who use IPSAS-based accrual accounting for their decision making. Moreover, additional variables (accounting knowledge, usefulness and location-related differences) are found to improve the efficacy of the structural model (compared with the original TPB framework). The values of R^2 for intention and behaviour for IPSAS users are 0.671 and 0.134, respectively.

For managers who use GFS-based information for their decision making (GFS users), the results in Figure 7.7 reveal that, of the TPB main constructs, only attitude and PBC affect GFS users' intention to use accrual accounting for decision making. In particular, there is no significant relationship between subjective norm and intention, and GFS users' intention does not lead to their use of accrual accounting for decision making. Similarly, organisational characteristics do not affect GFS users' intention, and their moderating effect on intention and behaviour is not significant either. Further, location-relation differences have no significant effect on either the intention or behaviour of GFS users. Other relationships in this model are significant. The values of R^2 for intention and behaviour for GFS users are 0.697 and 0.174, respectively. The findings indicate that the effect of organisational characteristics on intention, and intention on behaviour, are largely driven by IPSAS users.
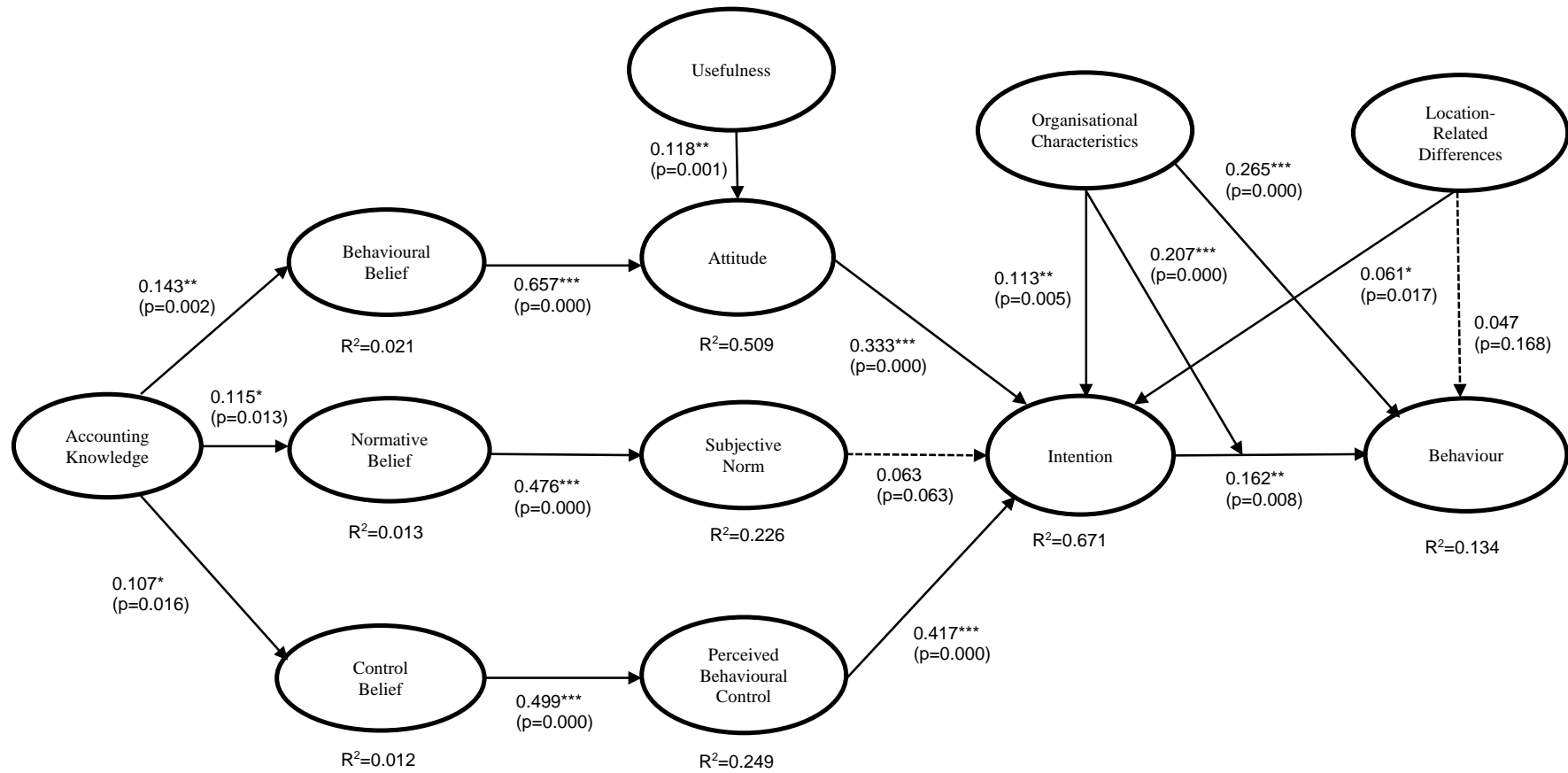
Figure 7.6: Structural Model—IPSAS Users (403 Respondents)

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.
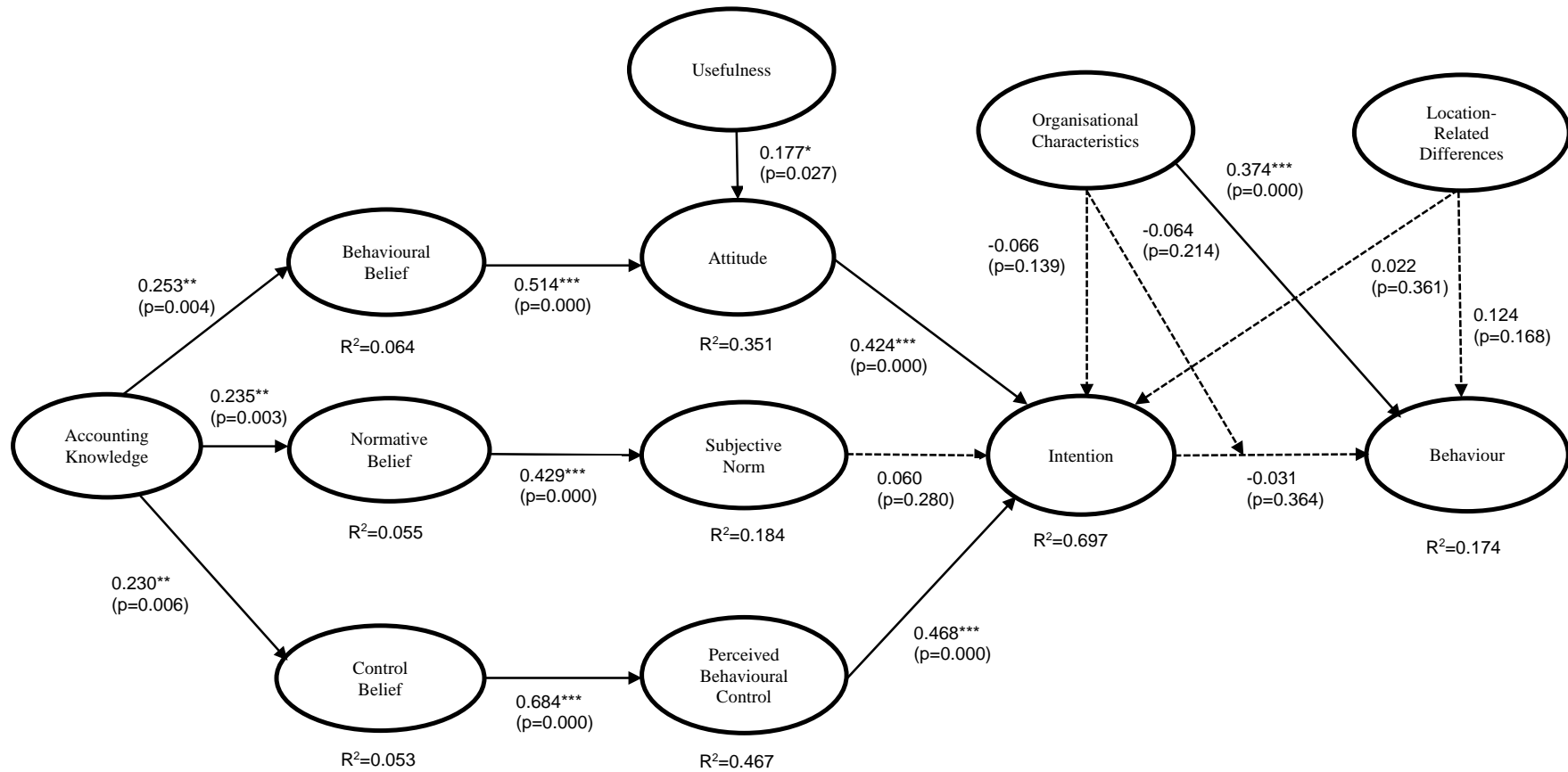
Figure 7.7: Structural Model—GFS Users (104 Respondents)

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.3.7 Further Analysis

Additional tests are conducted to investigate the following matters:

1. the relative effects of the three main constructs of the TPB—attitude, subjective norm and PBC

2. the direct effect of attitude, subjective norm and PBC on behaviour

3. the effect of each component of organisational characteristics (structure, culture and strategy) on intention and behaviour (the use of accrual accounting for decision making)

4. the path coefficient differences between managers' intention to use accrual accounting for decision making or for accountability purposes (financial reporting).

First, t-tests are conducted to examine the relative effects of the TPB main constructs and whether there are significant differences between the path coefficients of attitude, subjective norm and PBC on intention. The results of the t-tests in Table 7.3 below show that the path coefficients of attitude, subjective norm and PBC on intention are significantly different (p-value < 0.001). Therefore, this study suggests that PBC has the strongest effect on managers' intention to use accrual accounting for decision making, with a path coefficient of 0.461 ($p < 0.001$), followed by attitude and subjective norm, with path coefficients of 0.377 ($p < 0.001$) and 0.081 ($p < 0.001$), respectively. This is consistent with Armitage and Conner (2001) and East (1993), who find that PBC significantly contributes to the prediction of behaviour, suggesting the efficacy of the TPB compared with its predecessor, the TRA.

Table 7.3: *t*-Tests of Path Coefficient Differences—TPB Main Constructs

t-Test	*t*	Sig.
Attitude–subjective norm	132.091	0.000
Attitude–PBC	-279.645	0.000
Subjective norm–PBC	-173.9933	0.000

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Second, to investigate the direct effect of attitude, subjective norm and PBC on behaviour (without mediation by intention), a bootstrapping method is applied on the modified PLS structural model (see Figure 7.8). The results show that PBC and subjective norm significantly influence the use of accrual accounting for decision making, with path coefficients of 0.321 ($p < 0.001$) and 0.099 ($p < 0.01$), respectively. However, attitude does not significantly influence the use of accrual accounting for decision making. In this model, the R^2 of behaviour is 0.131, which is higher than the original TPB model to test Hypothesis 1 in Figure 7.1 (0.052), thereby indicating a stronger direct effect of the TPB constructs on behaviour than that mediated by intention, except for attitude, which is not significant. This finding suggests that PBC is the dominant individual factor influencing the use of accrual accounting in the Indonesian public sector, as it is consistently significant in affecting behaviour (directly or via intention), accompanied by its strong explanatory power from its antecedent control belief.
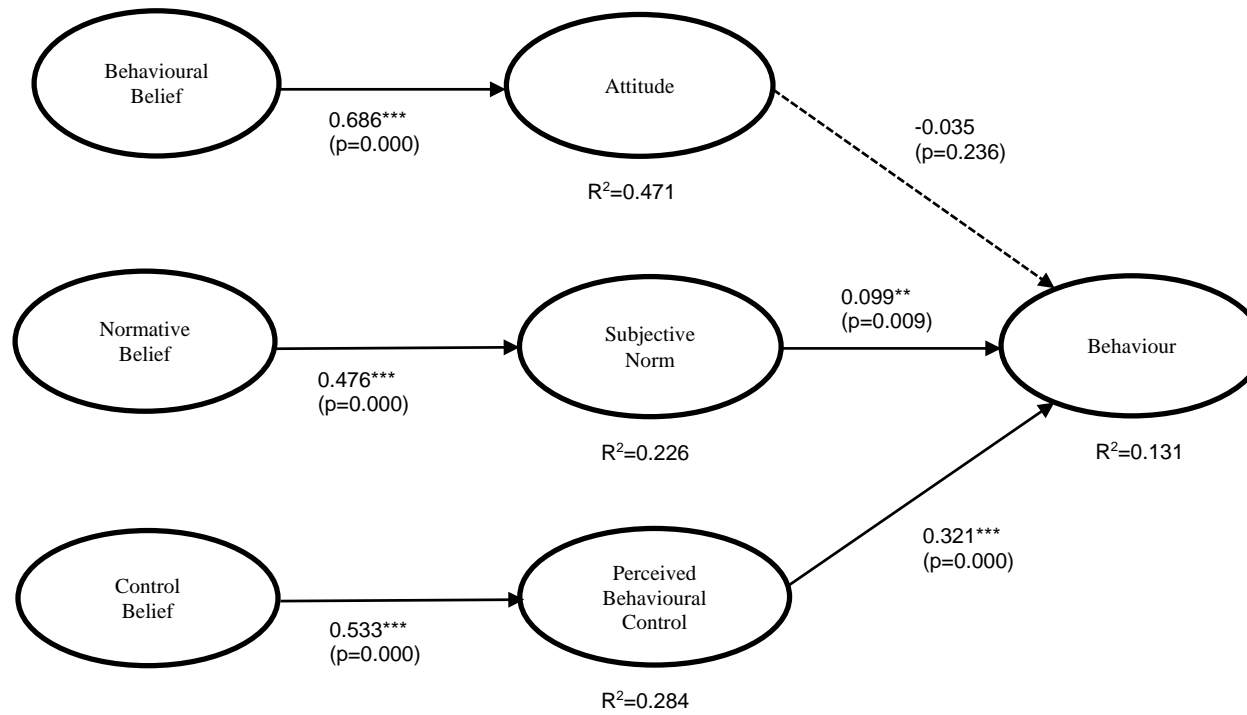
Figure 7.8: Structural Model—Direct Effect of TPB Main Constructs on Behaviour

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

Third, an additional analysis is conducted to determine which organisational characteristics influence managers' intention to use accrual accounting for decision making and their actual use. Adapted from Ashworth et al. (2009), this study categorises organisational characteristics into structure, culture and strategy. The results of the PLS structural model in Figure 7.9 show that the relationships between each component of organisational characteristics (structure, culture and strategy) and intention are not significant. The R^2 of behaviour in this model is 0.052. This finding suggests that each component of organisational characteristics (structure, culture and strategy) alone does not influence intention to use accrual accounting for decision making. Instead, the incorporation of each component of organisational characteristics into one construct influences intention to use accrual accounting for decision making, as found in the H2a testing results.

Further, this study conducts additional tests on the moderating effect of organisational characteristic components (structure, culture and strategy) on intention and behaviour, including its direct effect on behaviour. The results in Figure 7.10 show that culture and strategy have significant moderating effects on managers' intention to use and actual use of accrual accounting for decision making, with path coefficients of 0.067 ($p < 0.05$) and 0.113 ($p < 0.05$), respectively. In addition, culture is the only component of organisational characteristics that significantly affects the use of accrual accounting for decision making, with a path coefficient of 0.224 ($p < 0.001$). The R^2 of behaviour increases over twice to 0.136 (from 0.052 in Figure 7.1). This finding indicates that the organisational characteristics components (i.e. culture and strategy) moderate the intention–behaviour correlation, except structure, which is found to be insignificant. The influence of culture is best associated directly with managers' use of accrual accounting for decision making, rather than as a moderating variable between intention and behaviour.
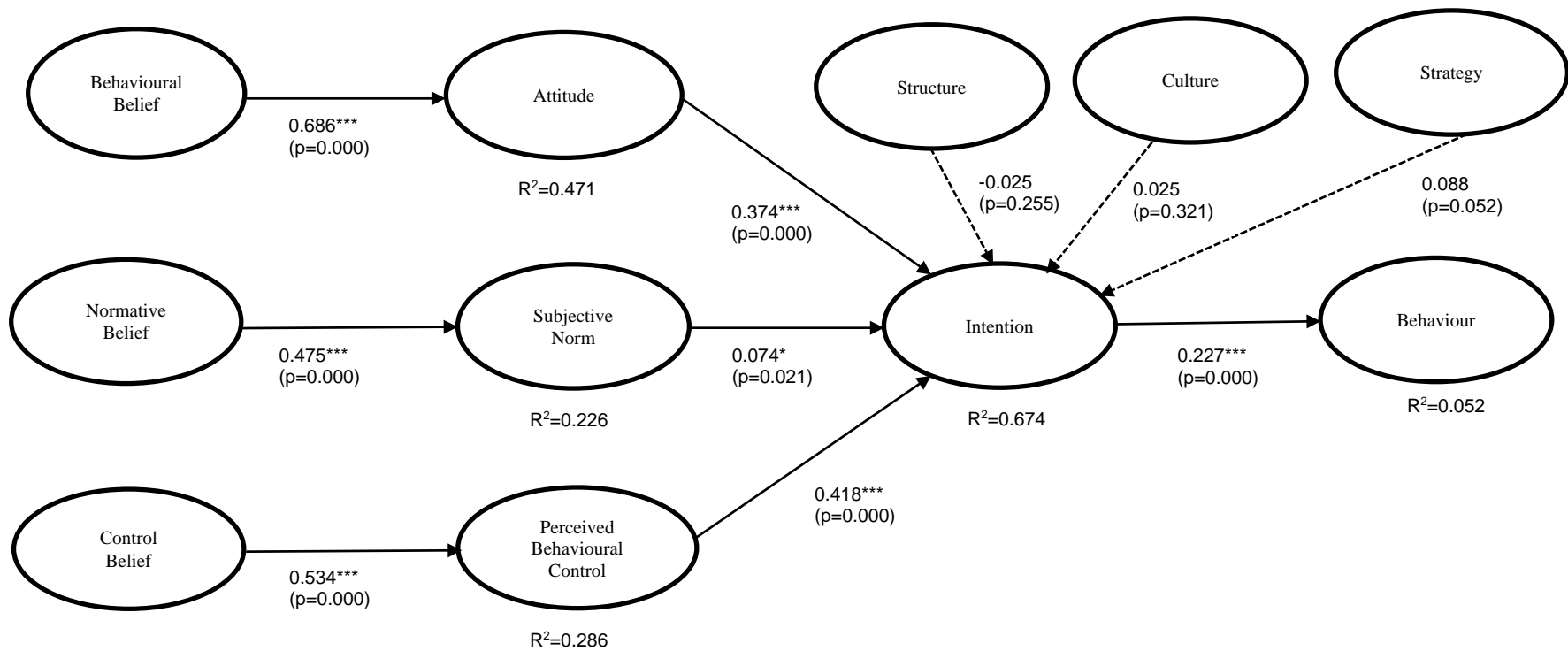
Figure 7.9: Structural Model—Organisational Characteristics' Components and Intention

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.
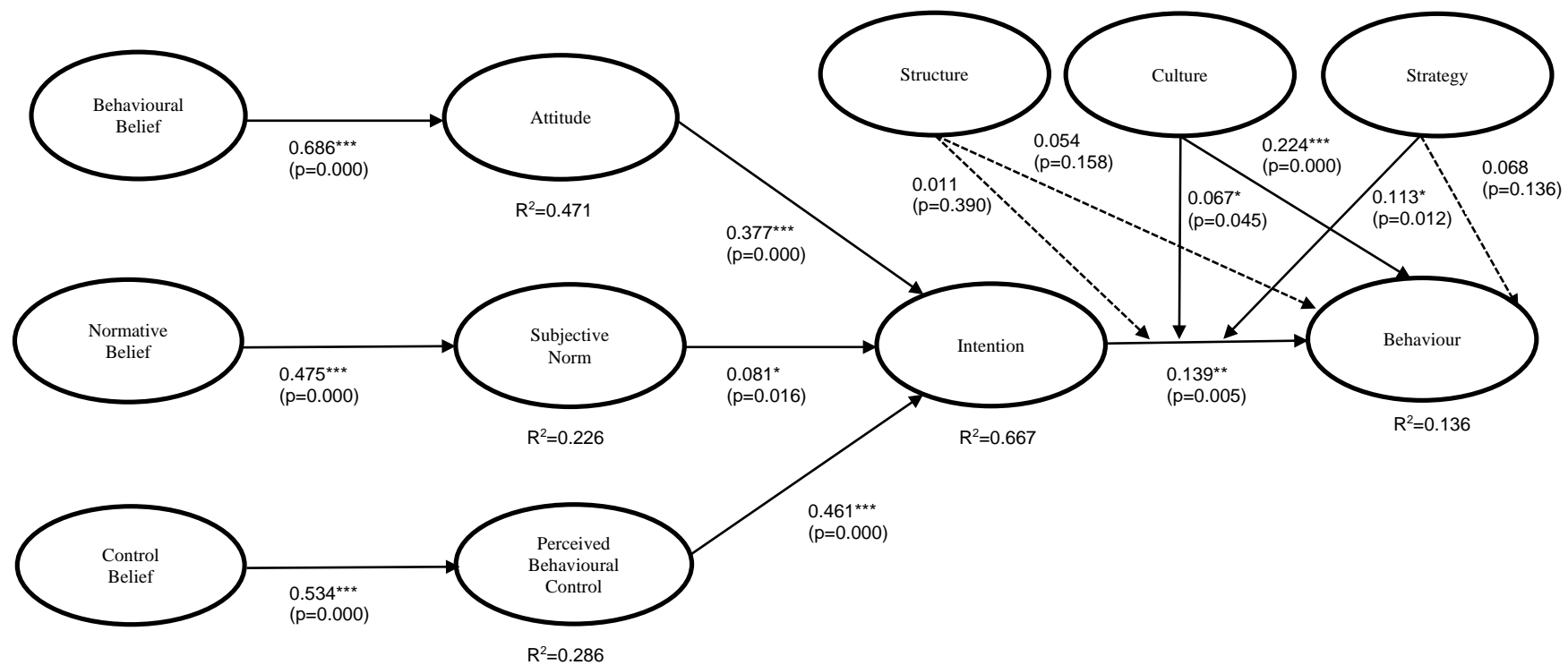
Figure 7.10: Structural Model—Moderating and Direct Effects of Organisational Characteristics' Components

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

Fourth, additional analysis is conducted to investigate the differences in path coefficients between managers' intention to use accrual accounting for decision making or for financial reporting. As discussed in Chapter 5, the interview results reveal that most managers use accrual accounting for financial reporting purposes. To examine whether there are differences in managers' intention to use accrual accounting for decision making or for financial reporting, this study separately tests the managers' intention to use accrual accounting for financial reporting and compares the path coefficients of the TPB main constructs for decision making (see Figure 7.1) and financial reporting (see Figure 7.11). The results of the t-tests in Appendix 13 show that the path coefficients of attitude, subjective norm and PBC on managers' intention to use accrual accounting for decision making and for financial reporting are significantly different, with t-values of 28.229 ($p < 0.001$), -28.367 ($p < 0.001$) and -4.871 ($p < 0.001$), respectively. Therefore, this study suggests that there are differences in managers' individual influences on managers' intention to use accrual accounting for decision making or financial reporting. Specifically, subjective norm and PBC show a strong effect on managers' intention to use accrual accounting for financial reporting, rather than for decision making. In contrast, managers' attitudes play a key role in their intention to use accrual accounting for decision making, rather than for financial reporting. Similarly, there are significant differences in individual beliefs between managers who use accrual accounting for decision making or financial reporting, with t-values for behavioural, normative and control beliefs of -31.153 ($p < 0.01$), -7.416 ($p < 0.001$) and -2.820 ($p < 0.01$), respectively. These findings suggest that managers' individual beliefs (behavioural, normative and control beliefs) have a stronger effect on the TPB main constructs (attitude, subjective norm and PBC) for the use of accrual accounting for financial reporting, rather than for decision making.
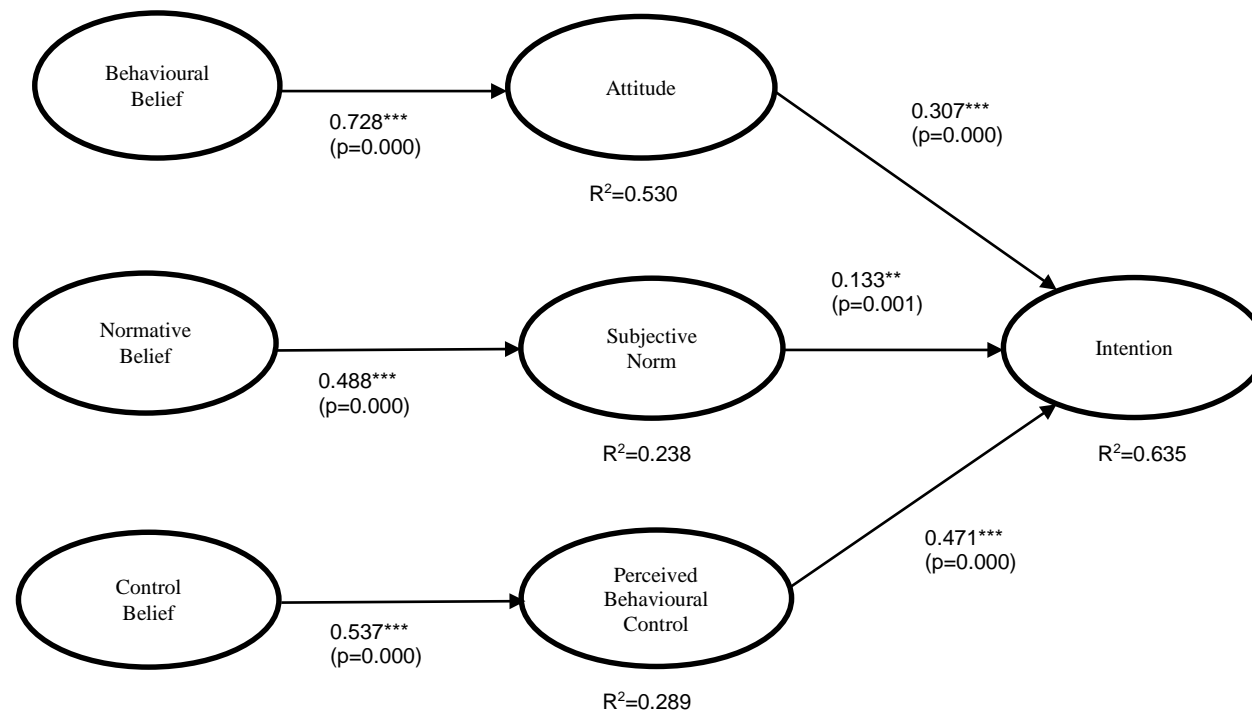
Figure 7.11: Structural Model—Intention to Use Accrual Accounting for Financial Reporting

Notes: ***$p < 0.001$ (one-tail), **$p < 0.01$ (one-tail) and *$p < 0.05$ (one-tail). Solid lines represent significant paths.

7.4 Discussion

The primary purpose of this study is to explore the extent to which accrual accounting is used by Indonesian managers for decision making and how individual and organisational factors may influence such use by managers. The results show that the use of accrual accounting for decision making by Indonesian government managers remains low. The findings suggest that managers' individual factors, managers' intention and organisational characteristics play a significant role in influencing the use of accrual accounting for decision making in the Indonesian public sector. The significant effect is largely driven by the IPSAS users. The findings also suggest that, of the TPB main constructs, PBC serves as the most influential individual factor affecting managers' intention to use and actual use of accrual accounting for decision making. Of organisational characteristics, organisational culture has a significant influence on managers' use of accrual accounting for decision making. The results also indicate that additional variables (managers' accounting knowledge, managers' perceived usefulness of accrual accounting and organisational location-related differences) improve the efficacy of the integrated model comprising the TPB framework and organisational variables.

7.4.1 Use of Accrual Accounting for Decision Making

This study confirms the concern of the Indonesian Supreme Audit Board and Vice Minister of Finance (BPK 2017; Skalanews 2017) regarding the low level of use of accrual accounting for decision making by government managers. The descriptive statistics show that the mean managers' use of accrual accounting for decision making is 3.56, which is approximately the midpoint of a seven-point Likert scale (higher points represent more use). Accrual accounting is mostly used for budgeting purpose decisions and less for fiscal and investment decisions. This aligns with managers' perceived extent of the usefulness of accrual accounting for these

decisions (see Appendix 14), thereby suggesting that managers perceive accrual accounting as more useful for budgeting and less useful for fiscal and investment decisions. However, the level of use is lower than managers' perceived usefulness of accrual accounting for decision making. The difference suggests that there could be barriers hindering the actual use of accrual accounting. The low level of use is comparable with previous results from developed countries, such as the Netherlands (ter Bogt and van Helden 2000), Ireland (Connolly and Hyndman 2006), Italy (Caccia and Steccolini 2006), the UK (Arnaboldi and Lapsley 2009), European countries (Pina et al. 2009) and Switzerland (Bergmann 2012), regarding a gap between the formal requirements and actual use of accrual accounting for decision making in the public sector.

7.4.2 Individual Influences

The PLS analysis of the individual factors in this study shows significant relationships between intention and its three antecedent variables (attitude, subjective norm and PBC) and between intention and behaviour. The results reveal a positive effect of managers' attitude on their intention to use accrual accounting for decision making. This finding is consistent with the studies by Nogueira and Jorge (2016) and Kobayashi et al. (2016). However, it is contrary to the findings of previous studies conducted in various developed countries, which report a negative attitude towards the use of accrual accounting for decision making (Jones and Puglisi 1997; Connolly and Hyndman 2006; Mack and Ryan 2006; Paulsson 2006; Frank and Gianakis 2010; Pollanen and Loiselle-Lapointe 2012; Brusca and Montesinos 2013). The Indonesian managers' positive attitudes towards accrual accounting could be shaped by their acknowledgment of the benefits of using accrual accounting after the lengthy transition using partial accrual accounting during 2004 to 2014. It is also possible that their attitudes might be determined by the commitment and support from top management for more transparent and

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accountable government operations and decisions, as reflected by the achievement of an unqualified opinion given by the Indonesian audit office to the consolidated central government financial statements for the first time in 2016, continuing to 2019 in general, and the increasing number of government ministries that attained an unqualified opinion for their individual financial statements, increasing from 21 ministries in 2015 to 33 in 2018.

The findings on subjective norm from the present study are similar to those of prior public sector accounting studies regarding the significant influence of stakeholders on the use of accrual accounting for decision making in the public sector (e.g. Arnaboldi and Lapsley 2009; Pina et al. 2009; Liguori et al. 2012; Brusca and Montesinos 2013; McLeod and Harun 2014; Eulner and Waldbauer 2018). The analysis of subjective norm reveals a high level of expectations from the Ministry of Finance and audit office, as the main stakeholders, and managers are more likely to comply with these expectations (see Appendix 15). However, the effect of subjective norm on managers' intention is relatively weak, suggesting that willingness to comply with powerful stakeholders' expectation may not be a strong motivating factor in the context of managers' decision making. One possible explanation for this finding is that decision making is a discretional judgement and internal process by managers with less influence from external parties, including stakeholders. It could also be due to the voluntary use of accrual accounting for managers' decision making, meaning they face no consequences for not fulfilling the stakeholders' expectations.

This study finds that PBC is the most influential determinant of managers' intention to use accrual accounting for decision making, whereas Ajzen (1991) argues that attitude is likely to be a stronger predictor of intention than the other individual factors. The findings from this study are congruent with the results of Armitage and Conner (2001), who find that PBC alone can predict intention. The findings concerning the importance of facilitating factors (e.g. the

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availability of financial resources or accounting training) on the use of accrual accounting for decision making align with prior research, such as the studies by Adhikari and Gårseth-Nesbakk (2016), Lande and Rocher (2011) and Cohen et al. (2013). In addition, the results reveal a high level of intention, yet a low level of use of accrual accounting, suggesting that strong intention may not result in actual use. Ajzen (1991) suggests that this gap could be due to a lack of actual control by individuals. He further suggests that PBC is often used as a substitute for a measure of actual control. Consistent with this suggestion, this thesis finds a significant direct effect of PBC on behaviour, and PBC exhibits a stronger influence than attitude and subjective norm.

While the results show that subjective norm and PBC could directly influence the use of accrual accounting, or indirectly influence use through intention, attitude is found to have a non-significant direct effect on the use of accrual accounting for decision making. This suggests that managers' attitudes only influence behaviour through the mediating effect of intention. Thus, managers' attitude alone is not sufficiently strong to drive managers to use accrual accounting for decision making without their intention to use it.

Despite the strong relationship between individual factors and intention to use accrual accounting for decision making, this study finds that the relationship between intention and use of accrual accounting for decision making only holds in the context of managers who use IPSAS-based accrual accounting for decision making (IPSAS users). One possible reason for this finding is that managers are more familiar with IPSAS, since the government financial statements are prepared based on IPSAS. Further, IPSAS was introduced in the transition period of 2004 to 2014 when the government implemented partial accrual accounting, while GFS was first published in 2015 based on *Government Regulation 275/2014*.

In addition, the findings of this study reveal that, in the context of Indonesia, accounting knowledge has positive and significant influences on individual beliefs (behavioural, normative

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and control beliefs), which in turn shapes managers' attitudes, subjective norm and PBC, although the explanatory power of accounting knowledge for individual beliefs is relatively low. The significant positive effect indicates that accounting knowledge, to some extent, may play a role in shaping managers' intention to use accrual accounting for decision making. This is consistent with Ajzen's (1991, 2011) finding that background factors, such as accounting knowledge, influence intention and behaviour, mediated by individual beliefs. This also suggests that enhancing the accounting knowledge of Indonesian public sector managers may encourage greater use of accrual accounting for decision making.

The analysis also reveals that managers have a greater intention to use accrual accounting for financial reporting than for decision making. This aligns with the concern of the Indonesian Vice Minister of Finance regarding the low level of use of accrual accounting for decision making by government managers (BPK 2008; Setyowati 2017), which could be driven by managers' strong intention to improve the audit opinions given by the audit office for their financial statements, compared with their intention to use accrual accounting for decision making. One possible explanation for the results may be the recent implementation of accrual accounting in the Indonesian public sector in 2015. Government managers may require more time to become familiar with a new system of accrual accounting, which may then lead to greater use of accrual accounting for decision making (Jones and Puglisi 1997; Kober et al. 2010).

7.4.3 Influences of Organisational Characteristics

While prior studies focus on the institutionalisation of accounting practices, which become organisational routines, in shaping processes of accounting change in the public sector (e.g. ter Bogt and van Helden 2000; Caccia and Steccolini 2006), this study focuses on the influence of organisational characteristics, which may be subject to institutional pressures, on the use of

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accrual accounting for decision making. According to Ashworth et al. (2009), the influence of institutional pressures on organisational behaviour is reflected in organisational characteristics.

This study extends Ashworth et al.'s (2009) study by providing evidence that organisational characteristics have positive and significant influences on managers' intention and behaviour, as well as moderating the intention–behaviour relationship. The findings of this thesis regarding the strong influences of organisational characteristics on behavioural intention are comparable with those of Pillay et al. (2017). The findings of organisational influences also confirm Ajzen's (1991, 2005) argument that the TPB framework is open to additional variables (i.e. organisational characteristics) if they can improve the efficacy of the model to predict behaviour. In this study, the integration of organisational characteristics into the TPB framework increases the R^2 of behaviour from 0.052 in the original TPB framework to 0.056 (where organisational characteristics are linked to intention) and 0.130 (where organisational characteristics are a moderating variable between intention and behaviour). The analysis reveals that organisational characteristics have a stronger effect when they connect directly to behaviour ($\beta = 0.305$, $p < 0.001$), rather than being mediated through intention. From this perspective, organisational characteristics are best associated directly with behaviour.

Culture and strategy significantly moderate the intention–behaviour relationship. Organisational culture (employees' mindset, shared values and beliefs) that supports a certain performance is highly associated with that performance, while strategy contains organisational activities and responses to institutional pressures for a certain behaviour, which makes it relevant to support organisational performance (Frumkin and Andre-Clark 2000; Carpenter and Feroz 2001). Therefore, the relationship between intention and behaviour could be strengthened if organisational culture and strategy exist and provide a supportive environment to convert intention into action.

With regard to the direct effect on behaviour, culture is the only component of organisational characteristics that significantly affects managers' use of accrual accounting for decision making, thereby suggesting a consistent influence of culture on both behaviour and the intention–behaviour relationship. The results confirm the framework provided by Gray (1988) regarding the effect of culture on the development of accounting systems, and ter Bogt and van Helden's (2000) framework regarding the important role of organisational culture in shaping the accounting practices of public sector managers. One interpretation of this evidence is that the central government applies extra vigour to organisational culture. This can be seen by the massive accrual accounting training given to all Indonesian ministries since 2007, with an increasing budget every year (Parhusip et al. 2011). This training is an acceleration program with the objective of increasing employees' accounting knowledge and skills, so they can use accrual accounting to undertake their tasks and consider it useful. In the first year of the training implementation in 2007, the participants attending the training comprised approximately 70,000 government employees, with a budget of around A\$2.3 million. The budget for the training increased to A\$8.8 million and A\$9.1 million in 2008 and 2009, respectively. By implication, extra pressures on culture could be a reason for this finding.

Strategy alone is a weak predictor of behaviour (the use of accrual accounting for decision making) because the Indonesian government may not have a strong and sound strategic plan regarding the use of accrual accounting for decision making—such as how to achieve greater use of accrual accounting for decision making in the long term (see *Law 17/2007*). Despite the concern of the Ministry of Finance and audit office, the use of accrual accounting for decision making is not included in the long-term (2005 to 2025) or medium-term (2015 to 2019) national development plans.[36] Instead, these strategic plans still focus on the use of accrual accounting

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[36] The long-term national development plan of Indonesia is governed by *Law 17/2007*, whereas the *Presidential Regulation 2/2015* outlines the medium-term national development plan.

for financial reporting (accountability purposes). To the best of this study's knowledge, the use of accrual accounting for decision making in the Indonesian public sector is only mentioned in the government accounting standards stipulated by *Government Regulation 71/2010*. Further, in the Indonesian context, strategy is closely connected to structure, as the details of the strategy must be clearly written in the regulations to become a guidance (as part of the structure) for government managers in implementing them. Thus, as a result of the insufficient written rules, procedures and strategic plans regarding the use of accrual accounting for decision making, structure and strategy are not strong determinants of behaviour.

In summary, this study concludes that, in addition to individual factors, organisational characteristics are critical starting points for government interventions to foster the use of accrual accounting for decision making. The results from this study suggest that the use of accrual accounting for decision making is more likely to improve if both individual factors and organisational characteristics are considered.

7.4.4 Other Influences

A positive and significant association between organisational location-related differences and intention suggest that perceived differences in human resources, training and facilities for accrual accounting between Jakarta and remote areas influence managers' intention to use accrual accounting for decision making. However, the insignificant relationship between location-related differences and the use of accrual accounting for decision making (behaviour) may indicate that the influence of location-related differences is better mediated by intention. This finding indicates that, to increase managers' intention to use and actual use of accrual accounting for decision making, the Indonesian government may need to provide equal human resources, accounting training and facilities for accrual accounting in Jakarta, as the capital city, and in remote areas across the country.

In addition, the inclusion of control variables (organisational size and location) increases the efficacy of the structural model. However, organisational size does not influence intention to use or actual use. The significant association between the location of organisations and the use of accrual accounting for decision making suggests that organisations located outside Jakarta (i.e. Medan, Bandung and Yogyakarta) use more accrual accounting for decision making than do organisations in Jakarta. This unexpected finding may be a result of the dual role of government managers working in regional areas (outside Jakarta) as both central government representatives and financial assistants for local governments in those areas—particularly relating to the implementation of accrual accounting in regional areas. In this regard, the central government organisations become an exemplar of successful implementation of accrual accounting. This role requires non-Jakarta managers to be proficient in accrual accounting knowledge, not only to conduct their tasks well, but also to assist local governments dealing with any accrual accounting problems they may encounter. This may lead to a potentially higher use of accrual accounting by managers located outside Jakarta than those in Jakarta. Further, the relation between location and intention is not significant, suggesting that the location of organisations does not influence managers' intention to use accrual accounting for decision making, and is better associated directly with the use of accrual accounting for decision making.

7.5 Summary

This chapter discusses the second part of the PLS approach employed in this study—the structural model, including hypotheses testing and discussion. In doing so, this chapter reports the results of the extent of accrual accounting use for decision making and the factors that influence such use by government managers. The results indicate a low level of accrual accounting use for decision making by managers. Further, by applying the TPB framework to explore individual factors, the PLS results show that managers' attitudes towards the use of

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accrual accounting for decision making, perceptions about the social pressure imposed on the organisation from internal and external stakeholders (subjective norm) and perceived control over the use of accrual accounting for decision making (PBC) influence their intentions, which in turn influences their behaviour (use of accrual accounting for decision making). The findings provide support for Hypothesis 1. This study also finds that these individual variables are influenced by managers' respective beliefs (behavioural, normative and control beliefs). Further analysis reveals that the relationship between intention and behaviour only holds in the context of IPSAS users (managers who use IPSAS-based accrual accounting for decision making).

The results also reveal that organisational characteristics influence managers' intention to use accrual accounting for decision making, thereby supporting Hypothesis 2a. Organisational characteristics also moderate the relationship between intention and behaviour, thereby supporting Hypothesis 2b. The findings show that each component of organisational characteristics (structure, culture and strategy) alone does not influence intention to use accrual accounting for decision making. In contrast, culture and strategy moderate the intention–behaviour relationship, and the influence of culture is best associated directly with managers' use of accrual accounting for decision making. The inclusion of control variables (organisational size and location) improves the efficacy of the model. Organisational location (Jakarta versus non-Jakarta) is found to affect managers' use of accrual accounting for decision making. The extension of additional variables (accounting knowledge, perceived usefulness of accrual accounting for decision making and perceived location-related differences) also increases the efficacy of the structural model. The results show that managers' accounting knowledge as a background factor influences managers' beliefs (behavioural, normative and control beliefs). Similarly, managers' perceived usefulness of accrual accounting for decision

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making affects their attitudes. Likewise, perceived location-related differences influence managers' intention to use accrual accounting for decision making.

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Chapter 8: Summary and Conclusion

8.1 Introduction

This chapter concludes this thesis by providing a summary of the major findings in Section 8.2, discussing the implications of the findings in Section 8.3, identifying the limitations of the study in Section 8.4, and highlighting opportunities for future research in Section 8.5.

8.2 Summary of Thesis

This thesis examines the factors that influence the use of accrual accounting for decision making by managers in the Indonesian public sector, and addresses the research question regarding the factors influencing such use. By drawing on the TPB, Ashworth et al.'s (2009) concepts of organisational characteristics and relevant public sector accounting and administration literature, this thesis explores how individual and organisational factors influence the use of accrual accounting by managers. Through applying the individual factors identified in the TPB, the study examines managers' attitudes, perceptions about internal and stakeholder pressures imposed on their behaviour, and perceived control over the use of accrual accounting for decision making. In addition, based on Ashworth et al.'s (2009) organisational characteristics of organisational structure, culture and strategy, this study examines the influence of these characteristics on managers' intention and behaviour to use accrual accounting for decision making. The study also seeks to understand the influences of managers' accounting knowledge as a background factor on their individual belief sets (behavioural, normative and control beliefs), managers' perceived usefulness of accrual accounting for decision making on their attitude, and organisational location-related differences on managers' intention and behaviour. In doing so, this study applies a holistic approach to examine the effect of both individual and organisational factors, as well as other potential influences.

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The research is undertaken using a mixed-methods research design involving two research phases. In the first phase, 45 semi-structured interviews are conducted with Indonesian government managers involved in the use of accrual accounting for decision making to provide insights and additional information on the managers' perceptions about accrual accounting in Indonesia, given the limited literature on this issue in the Indonesian context. Open-ended questions are developed as a guideline for the interviews by referring to the TPB, Ashworth et al.'s (2009) organisational characteristics and other relevant public sector accounting literature. The topics cover managers' perceptions and use of accrual accounting for different decisions, including managers' attitudinal and motivational factors towards accrual accounting, the stakeholder pressures that managers face, the supporting/inhibiting factors in using accrual accounting, and the organisational characteristics and contexts in which managers undertake their duties. Managers' views on both GFS and IPSAS are also obtained. Data from the interviews are analysed using a qualitative data analysis computer software (NVivo), including establishing and coding constructs to identify meaningful patterns of texts.

The interview outputs include 12 decision contexts used for decision making. Six frequencies of managers' use of accrual accounting for decision making emerge from the analysis of the interview data, varying from daily to yearly. Further analysis suggests that managers' frequencies of use of accrual accounting for decision making depend on the agenda to prepare financial statements. Therefore, to avoid confusion between decision making and preparation of financial statements, it is necessary to separately identify the use of accrual accounting in decisions other than financial reporting in the second phase of the research. The interview findings also reveal individual and organisational factors that are important in managers' use of accrual accounting for decision making. Specifically, managers largely possess a positive attitude towards the usefulness of accrual accounting for decision making. However, the interview responses are diverse concerning the decisions for which accrual accounting is useful.

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This leads to examination of the usefulness of accrual accounting for various decision situations in the questionnaire survey.

The influence of subjective norm is evidenced by the interviewees' views that the Ministry of Finance and audit office are two dominant stakeholders who expect them to use accrual accounting for decision making. The results also suggest that rules and regulation, leadership commitment and support from top management are the main facilitating factors in the use of accrual accounting for decision making. Meanwhile, lack of accounting training and accounting knowledge appears to contribute greatly to inhibiting managers' use of accrual accounting for decision making. Overall, the findings confirm the importance of individual factors (attitude, subjective norm and PBC) in shaping managers' intention to use accrual accounting for decision making.

The interview analysis reveals that government organisations have highly institutionalised formal structures, as indicated by the existence of accrual accounting procedures and guidelines. A number of interviewees also indicate that their organisations have a culture in which employees believe in the usefulness of accrual accounting for decision making. However, such perceptions and beliefs are largely influenced by powerful stakeholders. Most managers consider the Ministry of Finance and audit office the dominant stakeholders influencing strategy process and content. The interview findings also highlight the potential influence of these organisational characteristics on managers' intention to use accrual accounting for decision making. Additionally, organisational location-related differences emerge from the interview findings as an external variable that may influence managers' use of accrual accounting for decision making, caused by differences in accounting training, skilled human resources and facilities (infrastructure). Overall, various decision situations and relevant

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individual and organisational factors are identified from the interviews, and these findings inform the development of the questionnaire instrument in the second phase.

In the second research phase, the research framework is examined by surveying Indonesian government managers using a questionnaire. Analysis of the 507 usable responses reveals a low level of accrual accounting use for decision making by the managers. Further analysis reveals that Indonesian managers use accrual accounting most often for budgeting purposes and least often for fiscal policy and investment management. The following explanations could be the reasons for these findings. Managers prefer accrual accounting for budgeting because accrual information is considered useful by managers to forecast the financial resources needed to support their work, particularly in allocating utilities expenses to be paid. Meanwhile, managers are less likely to use accrual accounting for investment and fiscal matters, as they may still use cash-based information for these decisions. Managers working at the fiscal office may also be unfamiliar with accrual accounting and accrual-based financial statements.

In analysing the effect of individual factors, the PLS results indicate that individual factors (attitude, subjective norm and PBC) influence managers' intention and behaviour to use accrual accounting for decision making, in line with TPB. Further, these main individual factors (attitude, subjective norm and PBC) are determined by managers' individual beliefs (behavioural, normative and control beliefs). The findings also show that PBC—such as the availability of relevant resources and opportunities—has the strongest effect on managers' intention to use accrual accounting for decision making, compared with the other TPB components, with less influence from managers' attitudes and perceived social pressures from stakeholders. The findings support Hypothesis 1.

The results also reveal that organisational characteristics influence managers' intention and behaviour to use accrual accounting for decision making. The findings support Hypothesis 2a

and 2b. That is, organisational characteristics affect managers' intention and moderate the relationship between intention and behaviour. Organisational characteristics also directly influence managers' use of accrual accounting for decision making (without being mediated by intention). Thus, the integration of organisational characteristics to the TPB framework is useful to increase the predictive efficacy of the model in predicting the use of accrual accounting for decision making. Further analysis reveals that individual components (structure, culture and strategy) of the organisational characteristics alone do not influence intention to use accrual accounting for decision making. Instead, the incorporation of each component of organisational characteristics into one construct influences intention to use accrual accounting for decision making. With respect to managers' behaviour, culture is the only component of organisational characteristics that significantly affects the use of accrual accounting for decision making, and its effect is stronger than that as a moderating variable between intention and behaviour.

In addition, the results highlight managers' perceived usefulness of accrual accounting for decision making (usefulness) as a significant determinant of attitude. Further, managers' accounting knowledge as a background factor influences individual belief sets, and perceived location-related differences are found to be an antecedent of intention. The results also reveal differences in managers' use of accrual accounting for decision making when different accrual accounting systems are used. Specifically, both individual factors (except subjective norm) and organisational characteristics influence the behaviour of managers who use IPSAS-based accrual accounting for decision making. However, managers' use of GFS-based accrual accounting for decision making is influenced only by organisational characteristics, and not managers' intention.

Overall, in addressing the research question, this thesis finds a low level of use of accrual accounting for decision making by the Indonesian public sector managers. This finding

confirms the concern of the Indonesian audit office and Vice Minister of Finance about the slow progress in the adoption of accrual accounting in Indonesia and its underuse for decision making. Among all decision contexts, managers use accrual accounting mainly for budgeting purpose and less for investment and fiscal decisions. The findings of this thesis suggest that both individual and organisational factors play significant roles in managers' use of accrual accounting for decision making. That is, individual factors (managers' attitudes towards accrual accounting, perceived stakeholder pressures and perceived control over the use of accrual accounting) influence Indonesian public sector managers' intention to use accrual accounting, and their intention in turn influences their use. PBC exhibits the strongest effect among these three factors. Organisational characteristics also influence managers' intention to use accrual accounting for decision making and moderate the intention–behaviour relationship. The actual use is largely influenced by organisational culture. Other influences include perceived location-related differences, while accounting knowledge and perceived usefulness of accrual accounting display an indirect influence on managers' behaviour.

8.3 Implications

This section discusses the study findings' implications for the literature on the use of accrual accounting for decision making, as well as the implications for practice.

8.3.1 Implications for Literature

This study extends previous studies on the factors influencing the use of accrual accounting for decision making by considering both individual managers' behavioural perspective and organisational context. While some studies examine managers' attitudes (e.g. Frank and Gianakis 2010; Kober et al. 2010; Nogueira and Jorge 2016, 2017), these studies remain highly fragmented. This thesis contributes to the public sector accounting literature through examining

the behavioural perspectives that enhance understandings of managers' use of accrual accounting for decision making—in particular, why there is resistance to, or greater acceptance of, the use of accrual accounting for decision making. This thesis also examines managers' intentions and behaviour under the different organisational contexts in which individual managers are acting. Indonesian public sector organisations are highly institutionalised, and their organisational structure, culture and strategies are often subject to institutional influences. While prior studies largely focus on the effect of institutional pressures on organisations' actions (e.g. ter Bogt and van Helden 2000; Caccia and Steccolini 2006), or institutional influences on organisational characteristics (e.g. Ashworth et al. 2009), this thesis extends these studies by showing that organisational characteristics arising from institutional influences could have an effect in translating managers' intention to use accrual accounting for decision making into actual use. Therefore, the findings of this thesis highlight the importance of integrating individual and organisational factors to understand which factors may encourage public sector managers in Indonesia to use accrual accounting for decision making.

In addition, prior research on the use of accrual accounting for decision making has been largely restricted to developed countries. Thus, there is a need to enhance research focusing on developing countries in this area of study (Bergmann et al. 2019; Mir et al. 2019). This study focuses on the Indonesian public sector, which provides a unique developing country research context. The country has endured a lengthy transition towards full accrual accounting (11 years) and implemented a dual accrual accounting system (IPSAS and GFS) in parallel. This thesis finds that managers have a high intention to use accrual accounting for decision making after this long transition period. They appear less resistant to the idea of full accrual accounting than the previous partial accrual accounting (Prabowo et al. 2017). However, the actual use of full accrual accounting for various decisions is relatively low. This thesis further provides evidence of the potential factors influencing the level of use, including a combination of individual

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managers' ability to control their use of accrual accounting and organisational culture and strategies. Therefore, the findings of this thesis provide implications regarding which factors are important for promoting accrual accounting in the Indonesian public sector in terms of its usage—an area that is relatively under-researched.

While previous studies in developed countries show mixed managerial attitudes towards accrual accounting (e.g. Pollanen and Loiselle-Lapointe 2012; Brusca and Montesinos 2013; Kobayashi et al. 2016; Nogueira and Jorge 2016, 2017), this study provides evidence of a positive managerial attitude in the Indonesian public sector. Such a positive attitude could be shaped by these managers' recognition of the benefits of using accrual accounting, after a lengthy transition using partial accrual accounting—a unique condition that developed countries and other developing countries seldom experience. Moreover, prior public sector accounting research in Indonesia has to date centred on local governments implementing the partial accrual accounting system (Mir et al. 2019). Therefore, the findings of this thesis contribute to the use of accrual accounting for decision making by providing empirical evidence of the Indonesian central government's use of accrual accounting for decision making and the factors influencing such use.

The findings of this study also provide implications for the TPB. This study applies the TPB— a well-established theoretical framework (Armitage and Conner 2001; Ajzen 2005)—to examine the role of individual factors influencing managers' intention and behaviour to use accrual accounting for decision making. Although the theory has been tested in business decision-making studies (e.g. East 1993; Cordano and Frieze 2000; Flannery and May 2000; Glandon 2003; Carpenter and Reimers 2005; Stevens et al. 2005; Sommer 2011; Thoradeniya et al. 2015; Cucinelli et al. 2016), very limited studies apply the TPB to analyse public sector decision making. The use of the TPB to study the use of accrual accounting for decision making

by managers in the Indonesian public sector is an extension of the application of the theory in a new behavioural context. This study also confirms the TPB's proposition that individuals' beliefs could be affected by background factors (Ajzen 2005; Fishbein and Ajzen 2011). In the context of this thesis, managers' accounting knowledge affects their beliefs about the use of accrual accounting for decision making. This thesis also finds that organisational characteristics (Ashworth et al. 2009) and perceived location-related differences (Cooper and Schindler 2014; Spanos 2019) affect managers' intention to use accrual accounting for decision making. In this manner, this study extends the TPB by providing evidence that, in a public sector context, individuals' intention to perform a behaviour is not only influenced by their attitudes and perceptions, but is also shaped by the organisational environment surrounding the individual's actions.

Behavioural intention may not always be translated into behaviour, as revealed in the findings of this thesis in relation to a strong intention by managers, yet a low level of use of accrual accounting. While Ajzen (1991) attributes this problem to a lack of actual control by individuals, the findings of this thesis provide further insight into this issue. Ajzen (1991) suggests that PBC can be used as a proxy for actual control, given the difficulty in measuring actual control. In this regard, PBC serves as the most influential individual factor that not only affects managers' intention, but also directly affects the use of accrual accounting for decision making in the Indonesian public sector. The stronger explanatory power of such a direct effect on behaviour, rather than via intention, suggests that actual control is likely to be a more influential factor than intention in the context of the Indonesian public sector. Therefore, drawing from the findings, to motivate managers, they must be provided with the necessary control over the use of accrual accounting for decision making. For example, managers need to be provided with adequate financial resources, support from top management and accounting training to promote behavioural change. In addition, the findings reveal that organisational

culture has a significant moderating effect on the intention–behaviour nexus, and a direct effect on behaviour. This highlights that organisational culture that appreciates the use of accrual accounting for decision making is also essential to foster behavioural change. Thus, the application of the TPB with incorporation of organisational characteristics contributes to advancing knowledge in the area by highlighting that the use of accrual accounting for decision making in the public sector is difficult without actual control over the use of accrual accounting for decision making and a supportive organisational culture.

8.3.2 Implications for Practice

The findings of this study are expected to inform the Indonesian government in adopting a full accrual accounting system. As mandated by law, the country implemented full accrual accounting for its public sector in 2015. One of the main objectives of accrual accounting is its use in decision making (IMF 2014; IPSASB 2018). According to the Indonesian Vice Minister of Finance, the low level of use of accrual accounting information for decision making could be a result of the desire of ministries or agencies to use this approach only to obtain an unqualified opinion from the audit office, rather than to use the approach for decision making (BPK 2017; Setyowati 2017). Identifying the factors influencing the use of accrual accounting provides insight into the use or lack of use of accrual accounting for decision making. This study provides insights into such factors. In particular, managers appear to have a strong intention to use accrual accounting for decision making, given their positive attitudes towards accrual accounting, perceived social pressure from internal and external stakeholders and perceived control over the use of accounting information, as well as the overall organisational environment. However, to drive the actual use of accrual accounting for decision making, apart from managers' intention, the actual control that managers have over the accrual information and organisational culture are important.

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The low level of use of accrual accounting for decision making found in this study can be attributed to the following factors. First, there are inadequate regulatory pressures to use accrual accounting for decision making. There is no government mandatory requirement regarding the use of accrual accounting for decision making, leading public sector managers to think that it is not necessary to use accrual accounting for decision making, so they use the more familiar cash-based system instead. Second, managers do not have sufficient resources to facilitate their use of accrual accounting for decision making. Third, government ministries still focus on financial reporting purposes in using accrual accounting, thereby underusing it for decision making. Fourth, from a contextual perspective, this thesis is conducted in the Indonesian public sector—a country that implemented a dual system (IPSAS and GFS) of accrual accounting simultaneously in 2015. Thus, when this study was completed, accrual accounting had only been used for three years. As Kober et al. (2010) explain, the acceptance of accrual accounting in the public sector grows over time and is subject to the level of accumulated experience in using the new practice. Therefore, the effect of familiarity and experience may be of particular relevance to the Indonesian public sector, as practices are repeated and become routine over time.

The empirical evidence provided by this thesis helps policymakers improve the accrual accounting system in general and increase its use for decision making in particular. This can be achieved, among others, by improving the above-mentioned attributes relating to the underused accrual accounting for decision making, particularly by developing and establishing strategies (annual, medium and long term) related to the use of accrual accounting for decision making, making it a national priority and enhancing a positive culture to encourage the use of accrual accounting for decision making. Further, the current policy of an accrual system of financial reporting and a cash-based budget may need to be revisited by the Indonesian government, as

this study finds that the use of accrual accounting is mostly for budgeting decisions; thus, an integral accrual-based system for financial reporting and budgeting is needed.

It is also important to involve stakeholders in the use of accrual accounting, such as the Ministry of Finance, audit office and accounting standard setter, so they can exercise their power to increase the use of accrual accounting for decision making through regulations, audit process and opinions and accounting standards. In addition, since Indonesia is a member of the Association of Southeast Asian Nations (ASEAN), the results from this study are expected to set an example for other ASEAN countries in adopting full accrual accounting, as Indonesia is the first country to implement full accrual accounting in this region (MOF 2014; Widiprana 2017). Further, the experience of Indonesia, as an emerging economy (IMF 2016), can also inform other developing countries that are facing similar challenges and problems, so they can evaluate and improve their policies and plans in implementing a full accrual accounting system and use accrual accounting for their decision making.

8.4 Limitations

The findings of this thesis are subject to the following limitations. First, from the variable measurement viewpoint, this thesis uses self-reported measures, in which participants respond to the researcher's questions without interference. That is, participants are asked to report directly on their own behaviour of using accrual accounting for decision making. This approach is not an ideal measure of behaviour, as it relies on the judgement of respondents to quantify their use of accrual accounting for decision making, instead of a more objective measurement. Moreover, respondents may not respond truthfully. In this thesis, the participants are asked to indicate the extent of their use of accrual accounting for different decision situations. A more accurate measure of actual use of accrual accounting for decision making cannot be obtained because the use of accrual accounting for decision making by public sector managers is

discretional and data are not publicly available. Therefore, a self-reported measure of the government managers' use of accrual accounting for decision making is the only available method.

Second, the external and control variables used in thesis are not all-inclusive. This thesis uses Jakarta versus non-Jakarta jurisdictions as one of the control variables (location) and collects data from only three cities (Medan, Bandung and Yogyakarta) outside Jakarta for comparison purposes. The effect of organisational location on intention to use and actual use of accrual accounting for decision making may differ if remote areas other than these three cities are used as a comparison with Jakarta.

Third, there is a limitation associated with data collection because of restrictions associated with studying Indonesian public sector organisations. The participants for this thesis are found either by contacting them directly or through their head of office, who distributed the questionnaires to them. Access to research participants is subject to the approval of the head of each organisation in terms of the number and distribution of questionnaires and selection of interviewees. Nevertheless, this study collects data from all the ministries in Indonesia. However, the empirical evidence of this thesis is limited to the accessibility of data sources provided by each organisation.

8.5 Future Research

This study demonstrates that PBC and organisational culture exhibit the strongest effect among the individual and organisational factors, respectively. Future research could further investigate these areas by conducting in-depth case studies to provide better insight into how organisational culture and the presence of facilitating factors (PBC) influence the use of accrual accounting for decision making.

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When this thesis was conducted, Indonesia had implemented accrual accounting for only three years. Further research could examine the effect of respondents' familiarity and experience with the use of accrual accounting for decision making through a longitudinal study.

This thesis collects data from central government managers to examine their use of accrual accounting for decision making. Further research should consider exploring the views of other public sector entities on the use of accrual accounting for decision making, such as local (provincial and district) governments or public corporations. Given that this study collects data from only four cities in Indonesia, future research could also explore the views of public sector managers on the use of accrual accounting for decision making in other locations in Indonesia, so that more extensive inferences can be made about the use of accrual accounting in general.

Finally, future research could conduct a comparative study between Indonesia and other developing countries, particularly in the same region (e.g. ASEAN), to discover whether the results would be comparable when this study is replicated in other research contexts.

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Appendices

Appendix 1: Interview Questions

A. Introductory questions:
   - What are your main responsibilities in your position?
   - How long have you been working in your position?

B. The following questions are related to the use of accrual accounting for decision making and the intention to use such information:
   - What are the main decisions you make in carrying out your duties?
   - Do you use accrual accounting information for those decisions?

   – For those who use accrual accounting information, these questions will be asked:
   - How often do you use accrual accounting information for those decisions?
   - What type of accrual accounting information do you use for decision making?
   - Do you intend to continue to use accrual accounting information for decision making in the future?

   – For those who do not use accrual accounting information, these questions will be asked:
   - What are the reasons you do not use accrual accounting for decision making? Please explain.
   - Do you consider accrual accounting useful for decision making?
   - Do you intend to use accrual accounting information in the future?

C. The following questions will be asked to elicit the individual factors that may influence the use of accrual accounting for decision making:
   - Do you consider accrual accounting useful or less useful for decision making? Please explain.
   - In your opinion, are there any benefits/costs of using accrual? Please explain
   - Are there any stakeholders (i.e., groups, organisations, or individuals) who would expect you to use accrual accounting information for decision making? Please explain.
   - Are there any stakeholders (i.e., groups, organisations, or individuals) who think you should not use accrual accounting for decision making? Please explain.
   - What factors or circumstances would enable/inhibit you to use accrual accounting for decision making? Please explain.
   - Do you think your personal perception regarding accrual accounting influences your intention to use accrual information?

D. The following questions will be asked to elicit the organisational factors that may influence the use of accrual accounting for decision making:

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- Does your organisation have any policies and guidelines for using accrual accounting for decision making? Please explain.
- Do you think these policies, guidelines or regulations influence your intention/action to use accrual information?
- Do you think that your employees in your organisation believe that accrual accounting is useful for decision making? Please explain.
- Do you think this is the reason why your employees have intention (do not have intention) to use accrual information?
- Do you think this is the reason why your employees use (do not use) accrual information?
- Does your organisation provide a strategy to support the use of accrual information? Please explain.
- Do you think this strategy influence your intention/action to use of accrual information?
- Does your organisation involve external parties to promote the use of accrual information? Please explain.
- Do you think the involvement of external parties influence your intention/action to use accrual information?
- Are there any other organisational characteristics that may influence your intention to use accrual information? Please explain.

E. Overall
- Do you have any other comments on the use of accrual accounting information for decision making?

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Appendix 2: List of Ministries in Indonesia

	Name of Ministry
1	Coordinating Ministry for Political, Legal, and Security
2	Coordinating Ministry for Economic Affairs
3	Coordinating Ministry for Maritime Affairs and Investment
4	Coordinating Ministry for Human Development and Culture
5	Ministry of the State Secretariat of the Republic of Indonesia
6	Ministry of Home Affairs of the Republic of Indonesia
7	Ministry of Foreign Affairs of the Republic of Indonesia
8	Ministry of Defence of the Republic of Indonesia
9	Ministry of Justice and Human Right
10	Ministry of Finance
11	Ministry of Energy and Mineral Resources
12	Ministry of Industry
13	Ministry of Trade
14	Ministry of Agriculture
15	Ministry of Environment and Forestry
16	Ministry of Transportation
17	Ministry of Marine Affairs and Fisheries
18	Ministry of the Manpower
19	Ministry of Public Works and Public Housing
20	Ministry of Health
21	Ministry of Social Affairs
22	Ministry of Religious Affairs
23	Ministry of Culture and Elementary & Secondary Education
24	Ministry of Research, Technology and Higher Education
25	Ministry of Villages, Disadvantaged Regions and Transmigration
26	Ministry of Tourism
27	Ministry of Communication and Information
28	Ministry of Cooperatives and Small & Medium Enterprises
29	Ministry of Women Empowerment and Child Protection
30	Ministry of Administrative and Bureaucratic Reform
31	Ministry of National Development Planning / BAPPENAS
32	Ministry of Land and Spatial Planning
33	Ministry of State Enterprises
34	Ministry of Youth and Sports Affairs

Appendix 3: Invitation Letter, Consent Form, and Information Sheet—Interviews

Appendix 3.1 Invitation Letter

<div align="right">

Mr. Achmad Fauzi
Research School of Accounting
College of Business and Economics
The Australian National University
+61 2 612 59505
Achmad.Fauzi@anu.edu.au

</div>

DD Month YYYY

Name
Position
Organisation
Address

Interviews on "Individual and Institutional Influences on Managers' Use of Accrual Accounting for Decision Making in Indonesian Public Sector"

Dear xxx,

My name is Achmad Fauzi. I am a PhD candidate at the Australian National University. I would like to invite your organisation to participate in my PhD research project in relation to the use of accrual accounting information for decision making in the public sector.

The objective of this research is to examine the factors potentially influencing the use of accrual accounting for decision making in the Indonesian public sector. In particular, the research aims to explore the extent to which accrual accounting information is used for decision making and to examine the individual and institutional factors that may influence the use of accrual accounting for decision making. The research is expected to contribute to public sector management through a better understanding of the factors influencing the use of accrual accounting for decision making. Your views will help to gain better insight into the issues.

Should you kindly consent for your staff members to participate in this research project, I would appreciate your nomination of six top/senior managers (including you) who are involved in the use of accrual accounting information for decision making. I will directly invite them to attend an individual interview. Each interview will take approximately 60 minutes. Participation in interviews is voluntary. This research project will not seek sensitive information within your organisation and will not identify any individuals.

More information regarding this research project can be found in the enclosed information sheet and consent form. Should you consent for your staff members to participate in this research project, please contact me via email at Achmad.Fauzi@anu.edu.au or by phone on +61 2 612 59505 (Australia) or 085319319676 (Indonesia). I greatly appreciate your participation in this research project.

Sincerely,

Achmad Fauzi

Appendix 3.2 Consent Form

WRITTEN CONSENT for Participants

Individual and Institutional Influences on Managers' Use of

Accrual Accounting for Decision Making in Indonesian Public Sector

I have read and understood the Information Sheet you have given me about the research
project, and I have had any questions and concerns about the project (listed here

_____

_____)

addressed to my satisfaction.

I agree to participate in the project.   YES ☐   NO ☐

I agree to this interview being audio-recorded   YES ☐   NO ☐

Signature:…………………………………………….

Date:…………………………………………….

Researcher:
This research is being undertaken by Achmad Fauzi as part of his PhD studies at the Research School of Accounting, College of Business and Economics, The Australian National University.

Project Title:
Individual and Institutional Influences on Managers' Use of Accrual Accounting for Decision Making in Indonesian Public Sector

General Outline of the Project:
Description and Methodology: The study seeks to explore the extent to which accrual accounting information is used by managers for decision making and the factors influencing their use of accrual accounting for decision making in the Indonesian public sector. In particular, the research aims to examine individual and institutional factors that may influence the use of accrual accounting for decision making by public sector managers.
Participants: You are invited to take part in this study. Your views are valuable to provide insight into the extent to which accrual accounting information is used for decision making and the factors influencing the use of accrual accounting for decision making. There will be approximately thirty participants including top and senior managers involved in the use of accrual accounting for decision making in the central government ministries/agencies.
Use of Data and Feedback: The results of this study will be reported in a PhD thesis and may be published in academic journals or books. In addition, a summary of the results of this research will be provided to the organisations participating in this research.

Participant Involvement:
Voluntary Participation & Withdrawal: Participation is voluntary, and there will be no adverse consequences if you decide not to participate. You may withdraw from participation in the project at any time until the date of submission of my thesis, and you do not need to provide any reason to the researcher. If you decide to withdraw from the project, the researcher will not use any of the information you have provided.
What does participation in the research entail? Participants will be invited to take part in an individual interview. This will involve signing the interview Consent Form and answering questions about the use of accrual accounting for decision making in an organisation. With your permission, the interview may also be audio-taped.
Location and Duration: The interviews will take approximately 60 minutes, and can be undertaken either at the room designated by you or your organisation or the researcher.
Risks: By participating in this research project, there may be risk that you might be identified by what you say. To mitigate the risk, data will be used in aggregated forms unless direct quotes are used. In any case, your identity will not be revealed in the thesis or subsequent publications.
Benefits: It is expected that the research can contribute to the existing literature and accrual accounting practices in the public sector so as to better understand the extent to which accrual accounting information is used by managers for decision making and the factors influencing their use of accrual accounting for decision making.

Confidentiality:

You and your organisation will not be identified in the results, unless you have explicitly consented to be identified. Only the researcher and supervisory panel members will have access to the original data.

Confidentiality will be protected as far as the law allows. The researcher does not intend to seek any information in interviews which is particularly sensitive or confidential within government. However, it is important that you do not provide information which is of confidential status, or which is sensitive or defamatory.

Privacy Notice:

In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at https://policies.anu.edu.au/ppl/document/ANUP_010007 and it contains information about how a person can:

Access or seek correction to their personal information;

Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

Data Storage:

Where: All information obtained in interviews will be kept confidential as far as the law allows. Paper-based materials will be stored in a locked file drawer in a locked office at the ANU. Electronic data will be kept in a password-protected computer accessible only by the researcher.

How long: In accordance with the ANU's Code of research conduct, the data will be stored for five years after the publication of the results.

Destruction of Data: After five years from the date of publication of the results, the data will be destroyed.

Queries and Concerns:

If you have any queries on this project or would like to request further information, the researcher can be contacted via email or by phone.

Researcher:	Supervisor:
Achmad Fauzi	Associate Professor Janet Lee
Phone: +61 2 612 59505 (Australia)	Phone: +61 2 612 54336
Email: Achmad.Fauzi@anu.edu.au	Email: Janet.Lee@anu.edu.au

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2018/319). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Officer@anu.edu.au

Appendix 4: Questionnaire

The Australian National University
Questionnaire
Factors Influencing the Use of Accrual Accounting
for Decision Making in the Indonesian Public Sector

INTRODUCTION

This study relates to the use of accrual accounting information for financial reporting and decision making in your organisation and the factors influencing such use.

The questionnaire consists of two sections, A and B. Section A seeks your views regarding the use of accrual accounting for various purposes and the factors affecting your use of accrual information for such purposes. There are no *correct* or *incorrect* answers to the questions included in this questionnaire. Section B asks for the demographic information.

It should take approximately 20 minutes for you to complete the survey.

By completing this questionnaire you are giving consent for your response to be included in this project. All information that you provide will remain **confidential** and will be presented in a summarised form.

If you have any queries or concerns, please contact Achmad Fauzi via email (achmad.fauzi@anu.edu.au) or telephone (+61 2 6125 9505).

Thank you for participating in this project.
==

GLOSSARY

Accrual accounting: an accounting method that records economic events when they occur rather than when money is actually exchanged.

Accrual accounting information (**accrual information**): information produced from an accrual accounting system such as all information from a balance sheet, e.g. tax/non-tax receivable, asset and depreciation, liabilities.

Decision making: the process of selecting choices among several alternative possibilities when undertaking your tasks.

Financial reporting: the process of preparing financial statements, including the preparation process from the ministerial level to the central government financial reports.

Budget planning: all processes related to the preparation of a budget until the approval of the budget documents.

Budget implementation: the execution of the approved budget in the budgetary year.

Liability management: the process of managing liabilities, e.g. loans, bonds, other obligations to third parties.

Section A

For each of the following questions, please tick the appropriate box or answer in the space provided.

Q1.   The following questions ask you about the *frequency* of your use of accrual information for different *decision situations*. Please tick "Not Applicable" if you do not perform the task.

I use accrual information for:	Not Applicable	**How often** do you use accrual information for that purpose?						
		Never	Almost Never	Occasionally	Frequently	Usually	Almost Always	Always
		1	2	3	4	5	6	7
1. Budget planning	☐	☐	☐	☐	☐	☐	☐	☐
2. Budget implementation	☐	☐	☐	☐	☐	☐	☐	☐
3. Revenue management *(Including tax and non-tax revenue collection and administration)*	☐	☐	☐	☐	☐	☐	☐	☐
4. Asset management *(Including asset procurement, maintenance, and disposal)*	☐	☐	☐	☐	☐	☐	☐	☐
5. Liability management	☐	☐	☐	☐	☐	☐	☐	☐
6. Performance measurement	☐	☐	☐	☐	☐	☐	☐	☐
7. Risk management	☐	☐	☐	☐	☐	☐	☐	☐
8. Assessing cash flow needs	☐	☐	☐	☐	☐	☐	☐	☐
9. Investment management	☐	☐	☐	☐	☐	☐	☐	☐
10. Fiscal and macroeconomic matters	☐	☐	☐	☐	☐	☐	☐	☐
11. Provision of goods/services	☐	☐	☐	☐	☐	☐	☐	☐
12. Other tasks (please specify) …………………	☐	☐	☐	☐	☐	☐	☐	☐
………………………………………………………	☐	☐	☐	☐	☐	☐	☐	☐
……………………………………………....	☐	☐	☐	☐	☐	☐	☐	☐

Q2.   The following questions ask you about the *usefulness* of accrual information for your *decisions*. Please indicate the *extent* to which you *agree* with the following statements.

In my opinion, accrual information is useful for:	Not Applicable	Strongly Disagree ←———→ Strongly Agree						
		1	2	3	4	5	6	7
1. Budget planning	☐	☐	☐	☐	☐	☐	☐	☐
2. Budget implementation	☐	☐	☐	☐	☐	☐	☐	☐
3. Revenue management *(Including tax and non-tax revenue collection and administration)*	☐	☐	☐	☐	☐	☐	☐	☐
4. Asset management *(Including asset procurement, maintenance, and disposal)*	☐	☐	☐	☐	☐	☐	☐	☐
5. Liability management	☐	☐	☐	☐	☐	☐	☐	☐
6. Performance measurement	☐	☐	☐	☐	☐	☐	☐	☐
7. Risk management	☐	☐	☐	☐	☐	☐	☐	☐
8. Assessing cash flow needs	☐	☐	☐	☐	☐	☐	☐	☐
9. Investment management	☐	☐	☐	☐	☐	☐	☐	☐
10. Fiscal and macroeconomic matters	☐	☐	☐	☐	☐	☐	☐	☐
11. Provision of goods/services	☐	☐	☐	☐	☐	☐	☐	☐
12. Other tasks (please specify) ……………………	☐	☐	☐	☐	☐	☐	☐	☐
……………………………………………………	☐	☐	☐	☐	☐	☐	☐	☐
…………………………………………………......	☐	☐	☐	☐	☐	☐	☐	☐

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Q3. Please indicate the *extent* to which you *agree* with the following accrual-related statements for *financial reporting* and for your *decision making*.

	for financial reporting:							for decision making:						
	Strongly Disagree						Strongly Agree	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Accrual information is relevant	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Accrual information is worthwhile	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. It is rewarding to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. It is enjoyable to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. Most of my stakeholders think that I should use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. Most of my stakeholders would expect me to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Most of my stakeholders use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Most other government organisations use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. It is easy to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. I am confident in my use of accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. I have control over the use of accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. I have sufficient authority to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. I am willing to use accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. I am committed to using accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q4. Please indicate how *likely* the following situations will occur if accrual information is used for *financial reporting* and for your *decision making*.

It is unlikely/likely that:	of financial reporting:							of my decision making:						
	Very Unlikely						Very Likely	Very Unlikely						Very Likely
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Accrual information will improve the accuracy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Accrual information will promote the transparency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Accrual information will increase the reliability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Accrual information will increase the comprehensiveness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q5. Please indicate the extent to which accrual information is needed for *financial reporting* and for your *decision making*.

Accrual information is needed for:	of financial reporting:							of my decision making:						
	Small extent						Large extent	Small extent						Large extent
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Improving the accuracy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Promoting the transparency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Increasing the reliability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Increasing the comprehensiveness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q6. In your opinion, how *likely* it is that the following *stakeholders* will *expect* you to *use accrual information* for *financial reporting* and your *decision making*?

	for financial reporting:							for decision making:						
	Extremely Unlikely ←→ Extremely Likely							Extremely Unlikely ←→ Extremely Likely						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Supreme Audit Board (BPK)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Ministry of Finance (MoF)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. National Government Internal Auditor (BPKP)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Accounting profession (e.g. IAI)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. Parliament (DPR)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. Citizens (society)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Accounting standard setter (KSAP)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Top management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. Peers/colleagues	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. International financing agencies (e.g. WB, IMF)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. Creditors or lenders	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. Consultants	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. Credit rating agencies (e.g. S&P, Moody's, Fitch)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. Other Indonesian public sector agencies (e.g. Pemda, BI, BUMN)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. Other parties (please specify) ………………………………………	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
………………………………………	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
………………………………………	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q7. How likely it is that you will *comply* with the expectations of the following *stakeholders* with regards to *using accrual information* for *financial reporting* and *decision making*?

	for financial reporting:							for decision making:						
	Extremely Unlikely ←→ Extremely Likely							Extremely Unlikely ←→ Extremely Likely						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Supreme Audit Board (BPK)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
2. Ministry of Finance (MoF)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
3. National Government Internal Auditor (BPKP)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
4. Accounting profession (e.g. IAI)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
5. Parliament (DPR)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6. Citizens (society)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
7. Accounting standard setter (KSAP)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
8. Top management	□	□	□	□	□	□	□	□	□	□	□	□	□	□
9. Peers/colleagues	□	□	□	□	□	□	□	□	□	□	□	□	□	□
10. International financing agencies (e.g. WB, IMF)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
11. Creditors or lenders	□	□	□	□	□	□	□	□	□	□	□	□	□	□
12. Consultants	□	□	□	□	□	□	□	□	□	□	□	□	□	□
13. Credit rating agencies (e.g. S&P, Moody's, Fitch)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
14. Other Indonesian public sector agencies (e.g. Pemda, BI, BUMN)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
15. Other parties (please specify) ……………………………………	□	□	□	□	□	□	□	□	□	□	□	□	□	□
……………………………………	□	□	□	□	□	□	□	□	□	□	□	□	□	□
……………………………………	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Q8. Please indicate the *extent* to which the following *factors* influence *your ability* to *use accrual information* for *financial reporting* and *decision making*?

	for financial reporting:							for decision making:						
	Small Extent	← →					Large Extent	Small Extent	← →					Large Extent
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Accrual accounting knowledge	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Availability of financial resources (budget allocation)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Support from top management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Access to accrual accounting training	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. Availability of skilled human resources	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. Exposure to the potential benefits of accrual information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Ease in accessing accrual accounting system	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Availability of reliable data	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. Ease in changing the mindset of management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. Availability of accrual accounting facilities and infrastructure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. Existence of rules and regulations regarding accrual accounting	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. Time needed to become familiar with accrual accounting practices	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. Other factors (please specify) ……………………………………..	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
…………………………………………	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
…………………………………………	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q9. How *important* are the following *factors* in enabling you to *use accrual information* for *financial reporting* and *decision making*?

	for financial reporting:							for decision making:						
	Extremely Unimportant ← → Extremely Important							Extremely Unimportant ← → Extremely Important						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Accrual accounting knowledge	□	□	□	□	□	□	□	□	□	□	□	□	□	□
2. Availability of financial resources (budget allocation)	□	□	□	□	□	□	□	□	□	□	□	□	□	□
3. Support from top management	□	□	□	□	□	□	□	□	□	□	□	□	□	□
4. Access to accrual accounting training	□	□	□	□	□	□	□	□	□	□	□	□	□	□
5. Availability of skilled human resources	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6. Exposure to the potential benefits of accrual information	□	□	□	□	□	□	□	□	□	□	□	□	□	□
7. Ease in accessing accrual accounting system	□	□	□	□	□	□	□	□	□	□	□	□	□	□
8. Availability of reliable data	□	□	□	□	□	□	□	□	□	□	□	□	□	□
9. Ease in changing the mindset of management	□	□	□	□	□	□	□	□	□	□	□	□	□	□
10. Availability of accrual accounting facilities and infrastructure	□	□	□	□	□	□	□	□	□	□	□	□	□	□
11. Existence of rules and regulations regarding accrual accounting	□	□	□	□	□	□	□	□	□	□	□	□	□	□
12. Time needed to become familiar with accrual accounting practices	□	□	□	□	□	□	□	□	□	□	□	□	□	□
13. Other factors (please specify) ……………………………………..	□	□	□	□	□	□	□	□	□	□	□	□	□	□
…………………………………………	□	□	□	□	□	□	□	□	□	□	□	□	□	□
…………………………………………	□	□	□	□	□	□	□	□	□	□	□	□	□	□

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Q10. Please indicate the *extent* to which you *agree* the following statements about *your organisation*

In my organisation,	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Unsure
1. Written procedures are important in guiding the actions of our employees	☐	☐	☐	☐	☐	☐	☐	☐
2. We formulate procedures based on the rules and regulations	☐	☐	☐	☐	☐	☐	☐	☐
3. We have written procedures regarding accrual accounting	☐	☐	☐	☐	☐	☐	☐	☐
4. We provide training to support accrual accounting	☐	☐	☐	☐	☐	☐	☐	☐
5. Our employees use accrual accounting in carrying out their tasks	☐	☐	☐	☐	☐	☐	☐	☐
6. Our employees perceive that accrual information is useful	☐	☐	☐	☐	☐	☐	☐	☐
7. When we develop strategy, it is planned in detail	☐	☐	☐	☐	☐	☐	☐	☐
8. Strategy develops through a process of negotiation with other organisations	☐	☐	☐	☐	☐	☐	☐	☐
9. We have strategy in place to support accrual accounting	☐	☐	☐	☐	☐	☐	☐	☐

Q11. Please indicate the *extent* to which you *agree* with the following statements about the *location-related differences of organisations*.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Unsure
1. Human resources in remote areas (e.g. Papua, Maluku) receive less accrual accounting training compared to those in Jakarta	☐	☐	☐	☐	☐	☐	☐	☐
2. Organisations in Jakarta have more human resources who understand accrual accounting compared to those in remote areas (e.g. Papua, Maluku)	☐	☐	☐	☐	☐	☐	☐	☐
3. The facilities and infrastructure (e.g. equipment, internet access) related to the use of accrual accounting system in Jakarta are better than those in remote areas (e.g. Papua, Maluku)	☐	☐	☐	☐	☐	☐	☐	☐

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Q12. Do you have any additional comments regarding the use of accrual accounting information for financial reporting and decision making?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

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Section B. Demographic Data

1. What is your current position? ☐ Echelon II ☐ Echelon III ☐ Echelon IV

2. How long have you been in your current position? _____ year(s) _____ month(s)

3. How long have you been in this ministry/agency? _____ year(s) _____ month(s)

4. Where is your organisation located?

   ☐ DKI Jakarta   ☐ Outside DKI Jakarta, please specify …………………………..

5. What is the number of employees in your office where you are currently working?

   ☐ Up to 10   ☐ 21 – 30   ☐ 41 – 50

   ☐ 11 - 20   ☐ 31 – 40   ☐ Over 50

6. What is your highest level of education?

   ☐ Bachelor degree   ☐ Doctoral degree

   ☐ Master degree   ☐ Other, please specify: _____

7. Have you ever obtained accounting education at any level?   ☐ Yes   ☐ No

8. Have you ever graduated from a foreign university?   ☐ Yes   ☐ No

9. Have you ever attended accrual accounting training?   ☐ Yes   ☐ No

10. Are (were) you a member of any accounting profession (e.g. IAI)?   ☐ Yes   ☐ No

11. Are you involved in the preparation of financial statements?   ☐ Yes   ☐ No

12. Are you involved in the preparation of Government Finance Statistics (GFS) or SIKAPI?

    ☐ Yes   ☐ No

13. Do you use information from financial statements for decision making?

    ☐ Yes   ☐ No

14. Do you use information from GFS for decision making?   ☐ Yes   ☐ No

15. Please rate your level of accrual accounting knowledge on a scale of 1 to 10? Please tick one.

    ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

    Basic ⟵————————————⟶ Advanced

Thank you very much for your participation.

Please put your completed questionnaire into the enclosed envelope, seal the envelope, and return it to the collection bag provided in your office.

Appendix 5: Invitation Letter to Individual Participants—Survey

<div align="right">
Mr. Achmad Fauzi
Research School of Accounting
College of Business and Economics
The Australian National University
+61 2 612 59505
Achmad.Fauzi@anu.edu.au
</div>

DD Month YYYY

Name
Position
Organisation
Address

Questionnaire Survey on "Factors Influencing the Use of Accrual Accounting for Decision Making by Managers in the Indonesian Public Sector"

Dear xxx,

My name is Achmad Fauzi. I am a PhD candidate at the Australian National University. I would like to invite you to participate in my PhD research project in relation to the use of accrual accounting information for decision making in the public sector.

The objective of this research is to examine the factors potentially influencing the use of accrual accounting for decision making in the Indonesian public sector. In particular, the research aims to explore the extent to which accrual accounting information is used for decision making and to examine the individual and institutional factors that may influence the use of accrual accounting for decision making. The research is expected to contribute to public sector management through a better understanding of the factors influencing the use of accrual accounting for decision making. Your views will help to gain better insight into the issues.

I would appreciate your participation in the questionnaire survey. The survey will take approximately 20 minutes for you to complete. Participation is voluntary. This research project will not seek sensitive information within your organisation and will not identify any individuals.

More information regarding this research project can be found in the enclosed information sheet.

If you wish to participate, please complete the enclosed questionnaire, and return it into the bag provided at your office. Should you have any questions, please contact me via email at Achmad.Fauzi@anu.edu.au or by phone on +61 2 612 59505 (Australia) or 085319319676 (Indonesia). I greatly appreciate your participation in this research project.

Sincerely,

Achmad Fauzi

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Appendix 6: Questionnaire Participant Information Sheet—Survey

Researcher:
This research is undertaken by Achmad Fauzi as part of his PhD studies at the Research School of Accounting, College of Business and Economics, The Australian National University.

Project Title:
Factors influencing the use of accrual accounting for decision making by managers in the Indonesian public sector.

General Outline of the Project:
Description and Methodology: The study seeks to explore the extent to which accrual accounting information is used by managers for decision making and the factors influencing their use of accrual accounting for decision making in the Indonesian public sector. In particular, the research aims to examine individual and institutional factors that may influence the use of accrual accounting for decision making by public sector managers.

Participants: You are invited to take part in this study. Your views are valuable to provide insight into the extent to which accrual accounting information is used for decision making and the factors influencing the use of accrual accounting for decision making. The participants are managers involved in the use of accrual accounting for decision making in the central government ministries/agencies.

Use of Data and Feedback: The results of this study will be reported in a PhD thesis and may be published in academic journals or books. In addition, a summary of the results of this research will be provided to the organisations participating in this research.

Participant Involvement:
Voluntary Participation & Withdrawal: Participation is voluntary, and there will be no adverse consequences if you decide not to participate. You may withdraw from participation in the project prior to the return of the questionnaire. Once the questionnaire is submitted, it will not possible to withdraw participants' responses because the researcher will not be able to identify individuals.

What does participation in the research entail? Participants will be invited to take part in completing the questionnaire survey. The process will involve completing responses to the questions provided, and returning the completed questionnaire indicates a participant's consent to participate in the survey.

Location and Duration: The questionnaire can be completed in any places and it should take approximately 20 minutes to complete.

Risks: No risk is perceived by participating in this research project. Data will be used in aggregated forms and your identity will not be revealed in the thesis or subsequent publications.

Benefits: It is expected that the research can contribute to the existing literature and accrual accounting practices in the public sector so as to better understand the extent to which accrual accounting information is used by managers for decision making and the factors influencing their use of accrual accounting for decision making.

Confidentiality:
Individual respondents will remain anonymous. Also, all the data will be presented in a summarised form in the PhD thesis and other research outputs. Only the researcher and supervisory panel members will have access to the original data. Confidentiality will be protected as far as the law allows. The researcher does not intend to seek any information which is particularly sensitive or confidential. However, it is important that you do not provide information which is of confidential status, or which is sensitive or defamatory.

Privacy Notice:
In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at
https://policies.anu.edu.au/ppl/document/ANUP_010007 and it contains information about how a person can:
Access or seek correction to their personal information;
Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

Data Storage:
Where: All information obtained in interviews will be kept confidential as far as the law allows. Paper-based materials will be stored in a locked file drawer in a locked office at the ANU. Electronic data will be kept in a password-protected computer accessible only by the researcher.
How long: In accordance with the ANU's Code of research conduct, the data will be stored for five years after the publication of the results.
Destruction of Data: After five years from the date of publication of the results, the data will be destroyed.

Queries and Concerns:
If you have any queries on this project or would like to request further information, the researcher can be contacted via email or by phone.

Researcher:	Supervisor:
Achmad Fauzi	Associate Professor Janet Lee
Phone: +61 2 612 59505 (Australia)	Phone: +61 2 612 54336
Email: Achmad.Fauzi@anu.edu.au	Email: Janet.Lee@anu.edu.au

Ethics Committee Clearance:
The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2019/209). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager
The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Officer@anu.edu.au

Appendix 7: Invitation Letter to the Head of the Organisation—Survey

<div align="right">

Mr. Achmad Fauzi
Research School of Accounting
College of Business and Economics
The Australian National University
+61 2 612 59505
Achmad.Fauzi@anu.edu.au

</div>

DD Month YYYY

Name
Position
Organisation
Address

Questionnaire Survey on "Factors Influencing the Use of Accrual Accounting for Decision Making by Managers in the Indonesian Public Sector"

Dear xxx,

My name is Achmad Fauzi. I am a PhD candidate at the Australian National University. I would like to invite you to participate in my PhD research project in relation to the use of accrual accounting information for decision making in the public sector.

The objective of this research is to examine the factors potentially influencing the use of accrual accounting for decision making in the Indonesian public sector. In particular, the research aims to explore the extent to which accrual accounting information is used for decision making and to examine the individual and institutional factors that may influence the use of accrual accounting for decision making. The research is expected to contribute to public sector management through a better understanding of the factors influencing the use of accrual accounting for decision making. Your views will help to gain better insight into the issues.

Should you kindly consent for your staff members to participate in this research project, it would be much appreciated if you allow me to distribute 25 questionnaires to managers who are involved in in the use of accrual accounting for decision making in your organisation. It should take approximately 20 minutes for a participant to complete the questionnaire. A bag will be provided in your office as a means of questionnaire collection. This research project will not seek sensitive information within your organisation and will not identify any individuals or your organisation.

More information regarding this research project can be found in the enclosed information sheet. Should you have any questions, please contact me via email at Achmad.Fauzi@anu.edu.au or by phone on +61 2 612 59505 (Australia) or 085319319676 (Indonesia). I recognise that your time is valuable and thank you in advance for your generous your participation in this research project.

Sincerely,

Achmad Fauzi

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Appendix 8: Respondents' Profile

Table A8.1: Respondents' Education Level

Highest Education	Frequency	Percentage
Bachelor	166	32.7
Master	332	65.5
Doctor	9	1.8
Total	507	100

Table A8.2: Respondents' Accounting Education

Accounting Education	Frequency	Percentage
No	184	36.3
Yes	323	63.7
Total	507	100

Table A8.3: Respondents' Education from Overseas

Overseas Graduate	Frequency	Percentage
No	438	86.4
Yes	69	13.6
Total	507	100

Table A8.4: Accrual Accounting Training

Accrual Accounting Training	Frequency	Percentage
No	201	39.6
Yes	306	60.4
Total	507	100

Table A8.5: Member of Accounting Profession

Accounting Profession	Frequency	Percentage
No	442	87.2
Yes	65	12.8
Total	507	100

Appendix 9: Box Plot Graphs for Univariate Outliers

Figure A9.1: Box Plot – Behavioural, Normative, and Control Belief
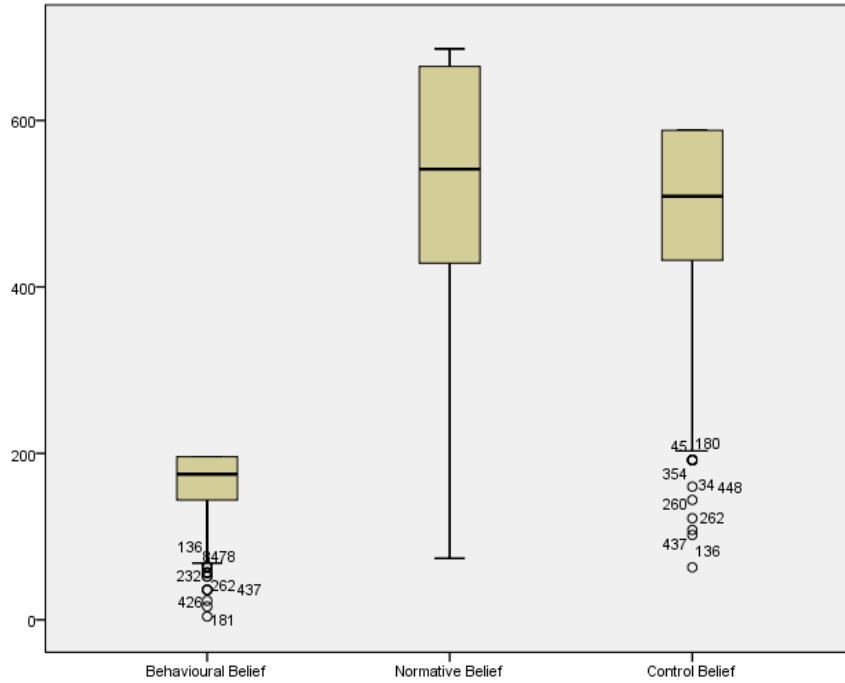
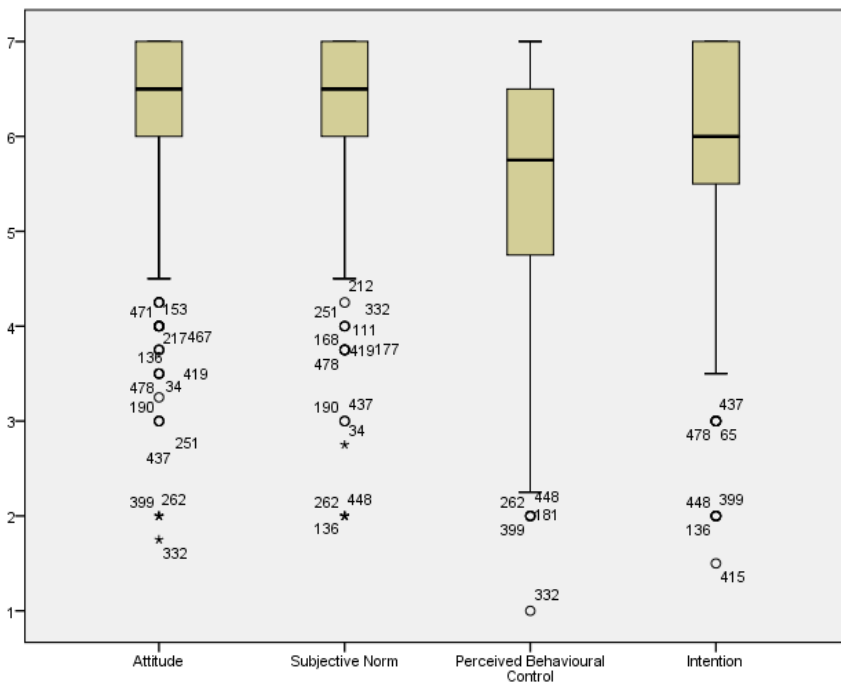Figure A9.2: Box Plot – Attitude, Subjective Norm, PBC, and Intention

Figure A9.3: Box Plot – Behaviour, Organisational Characteristics, Usefulness, and Location-Related Differences
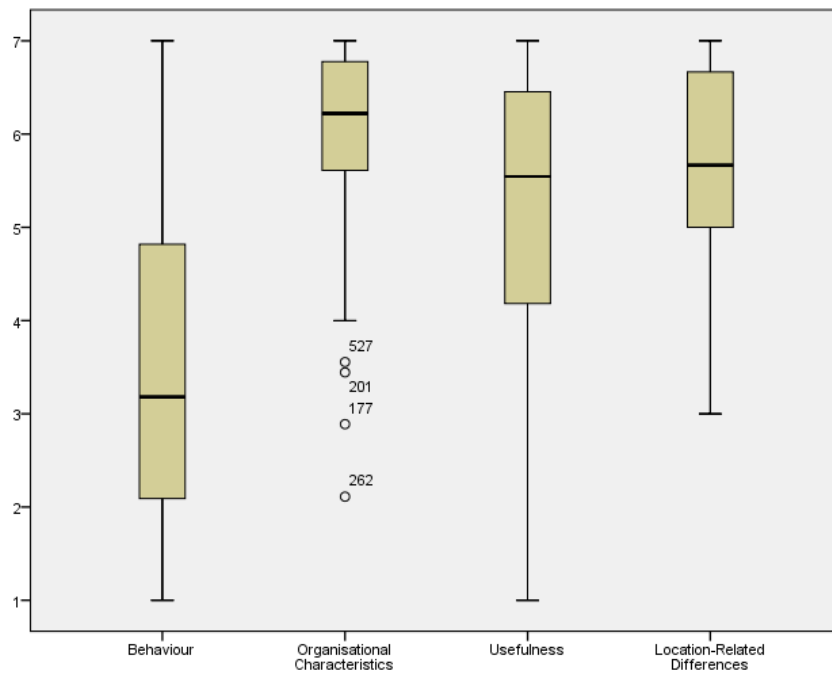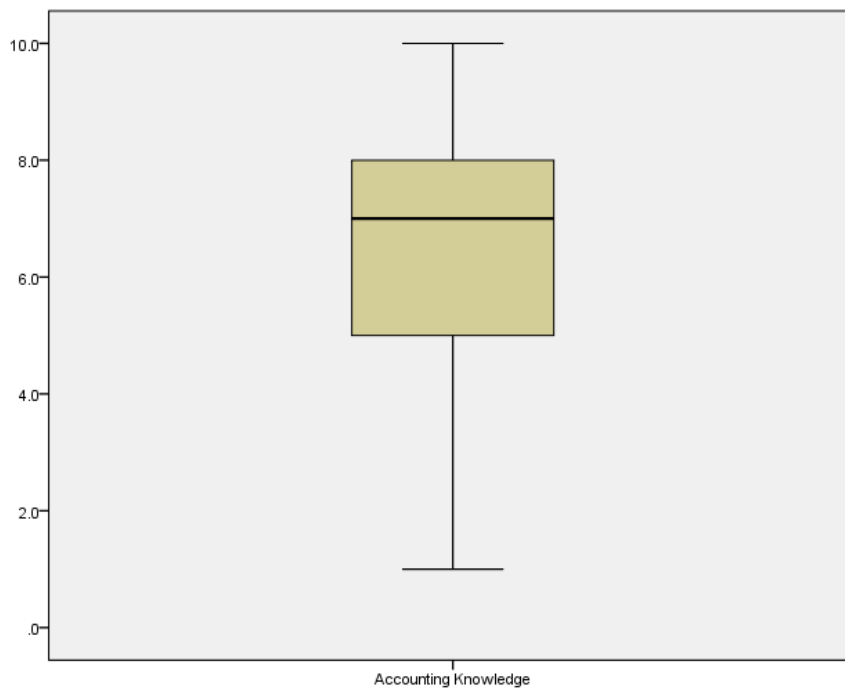

Figure A9.4: Box Plot – Accounting Knowledge

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Appendix 10: Histogram for Univariate Normality
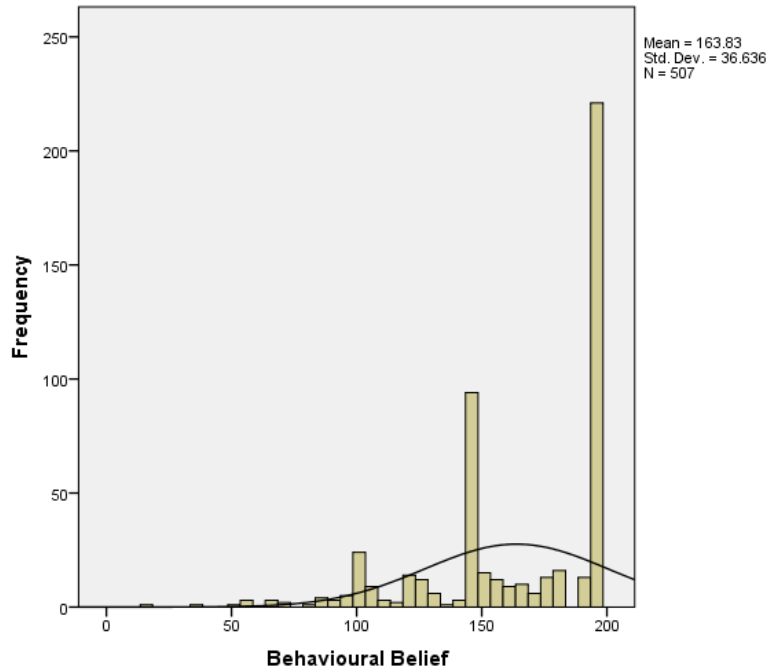
Figure A10.1: Histogram – Behavioural Belief

Mean = 163.83
Std. Dev. = 36.636
N = 507

Figure A10.2: Histogram – Normative Belief

Mean = 529.7
Std. Dev. = 138.838
N = 507
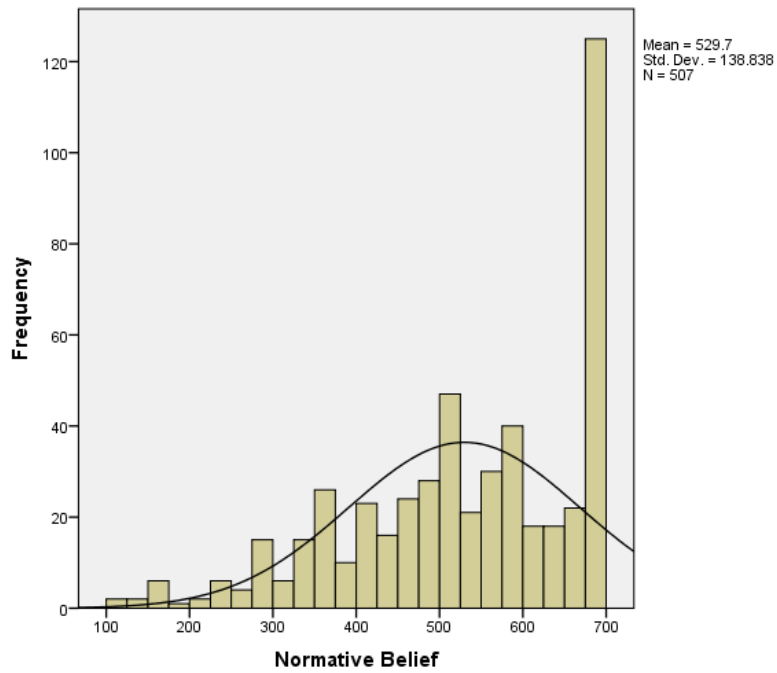
Figure A10.3: Histogram – Control Belief

Mean = 489.3
Std. Dev. = 98.814
N = 507
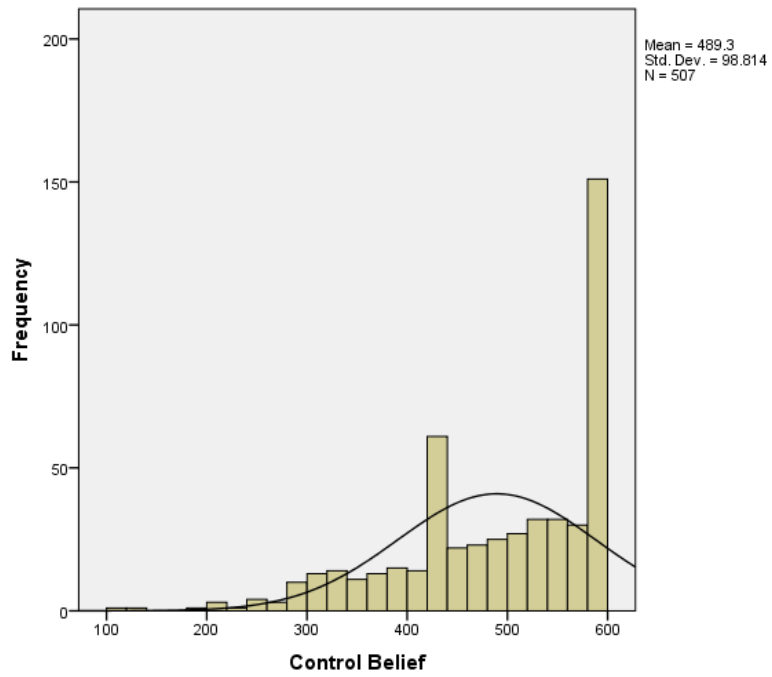
Figure A10.4: Histogram – Attitude

Mean = 6.25
Std. Dev. = .846
N = 507
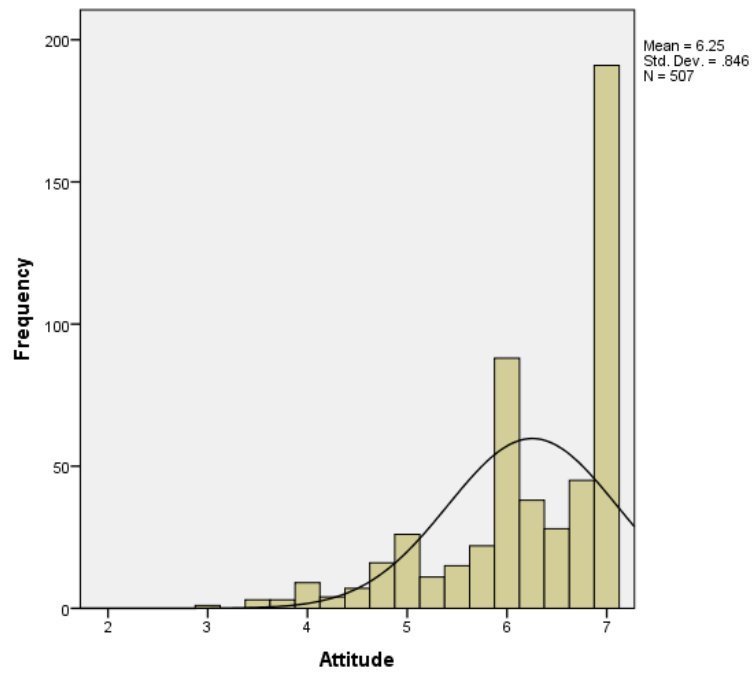
Figure A10.5: Histogram – Subjective Norm

Mean = 6.41
Std. Dev. = .652
N = 507
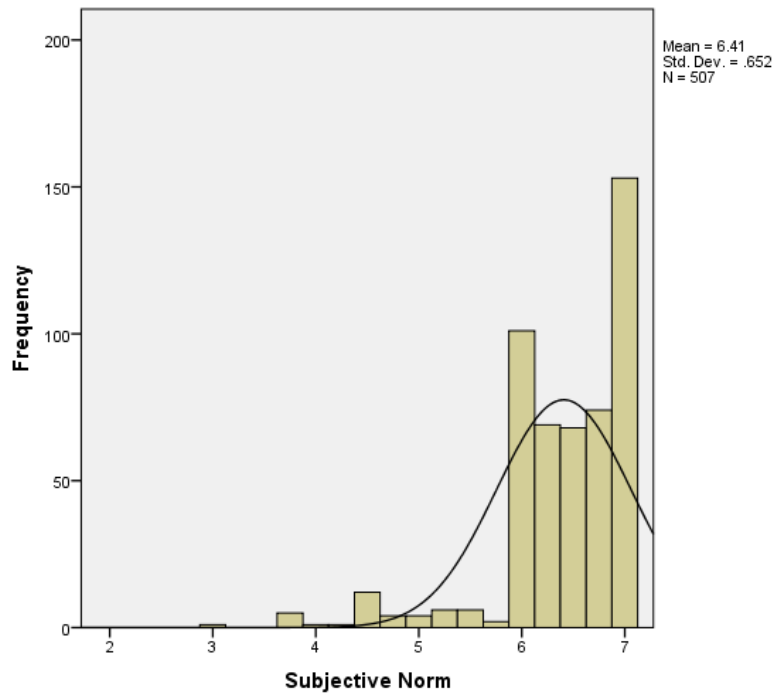
Figure A10.6: Histogram – Perceived Behavioural Control

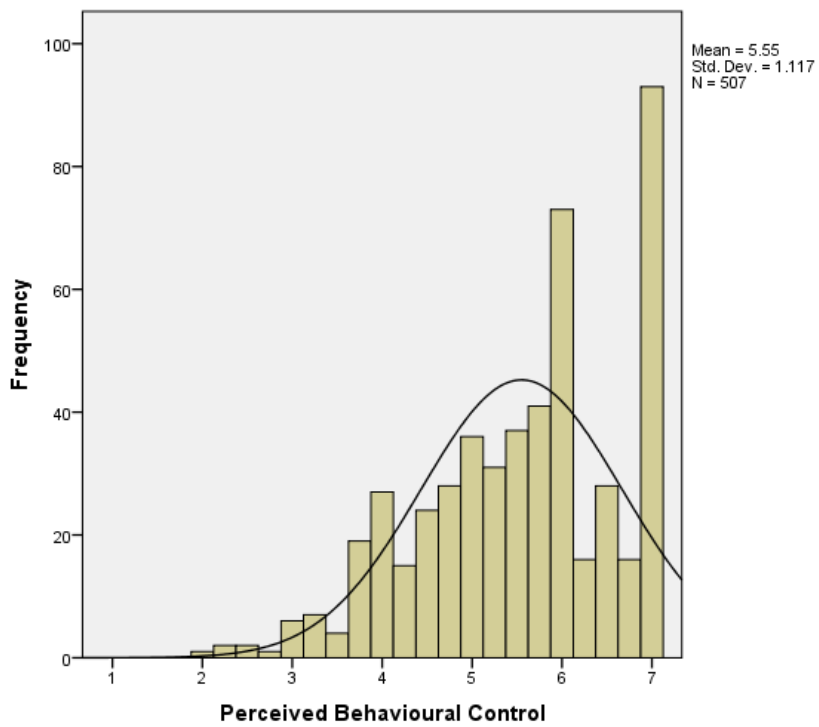
Mean = 5.55
Std. Dev. = 1.117
N = 507

Figure A10.7: Histogram – Intention
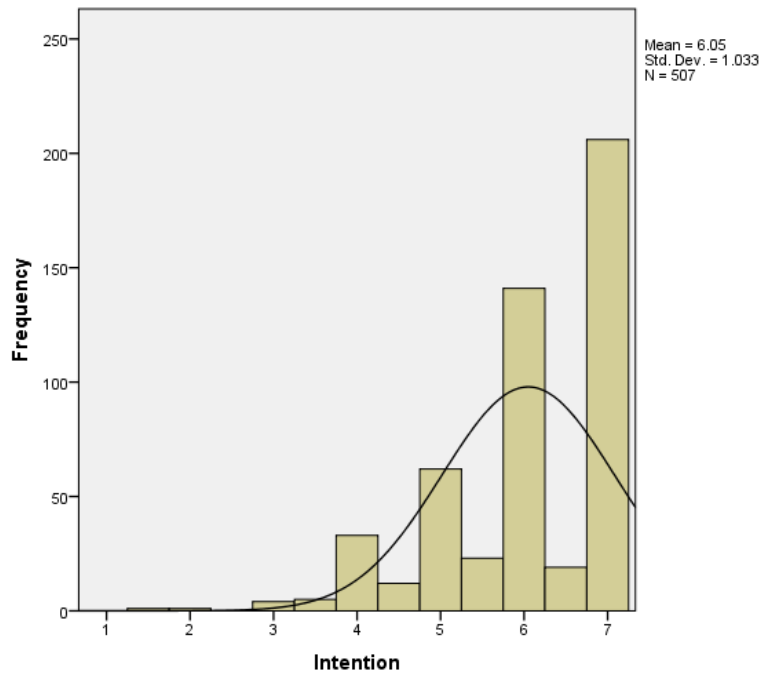
Figure A10.8: Histogram – Behaviour

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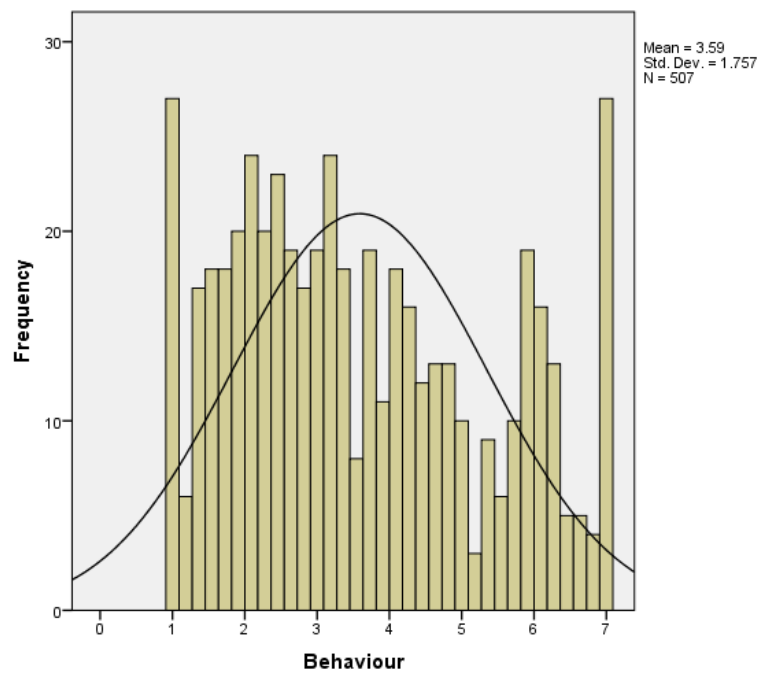
Figure A10.9: Histogram – Organisational Characteristics

Mean = 6.15
Std. Dev. = .754
N = 507
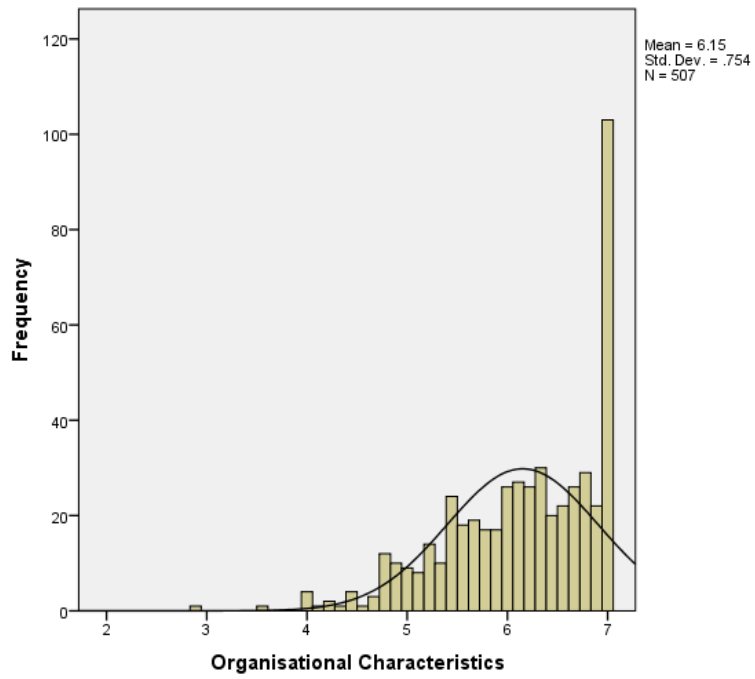
Figure A10.10: Histogram – Usefulness

Mean = 5.20
Std. Dev. = 1.549
N = 507
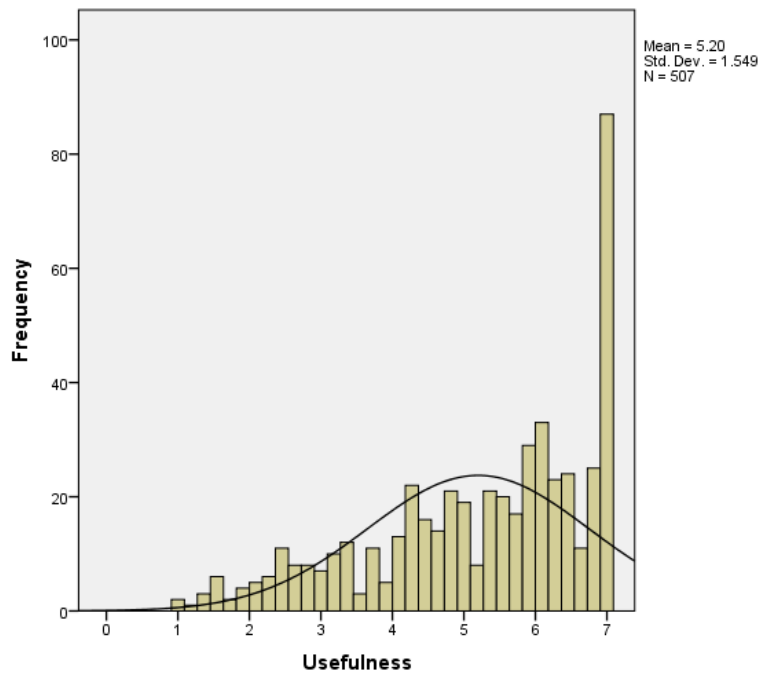
243

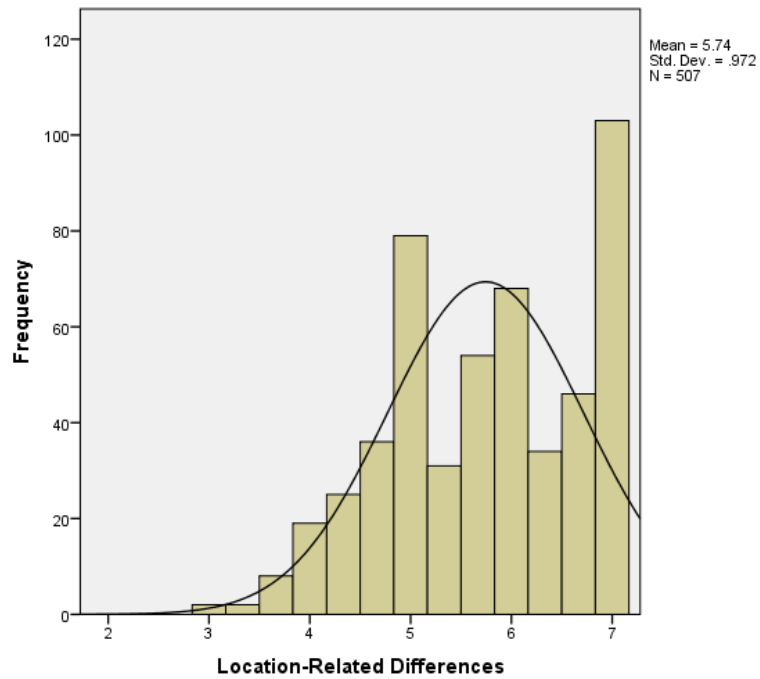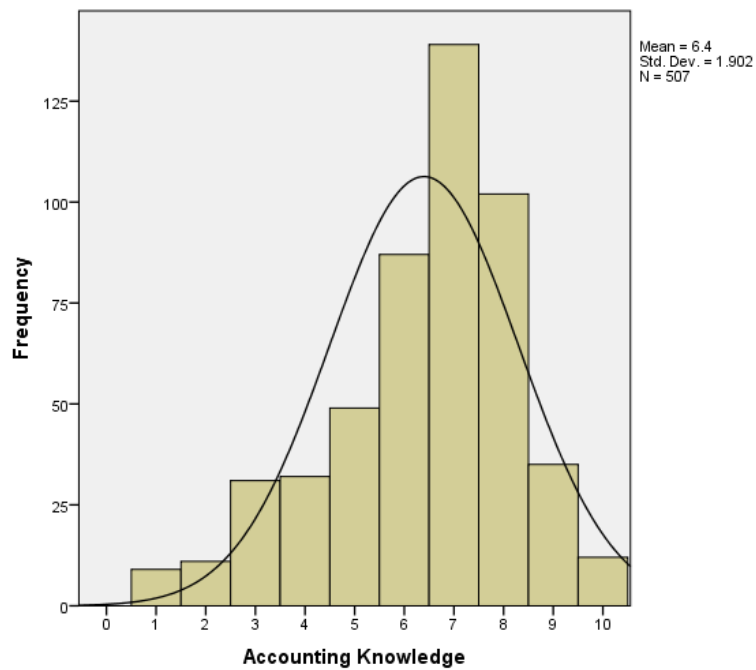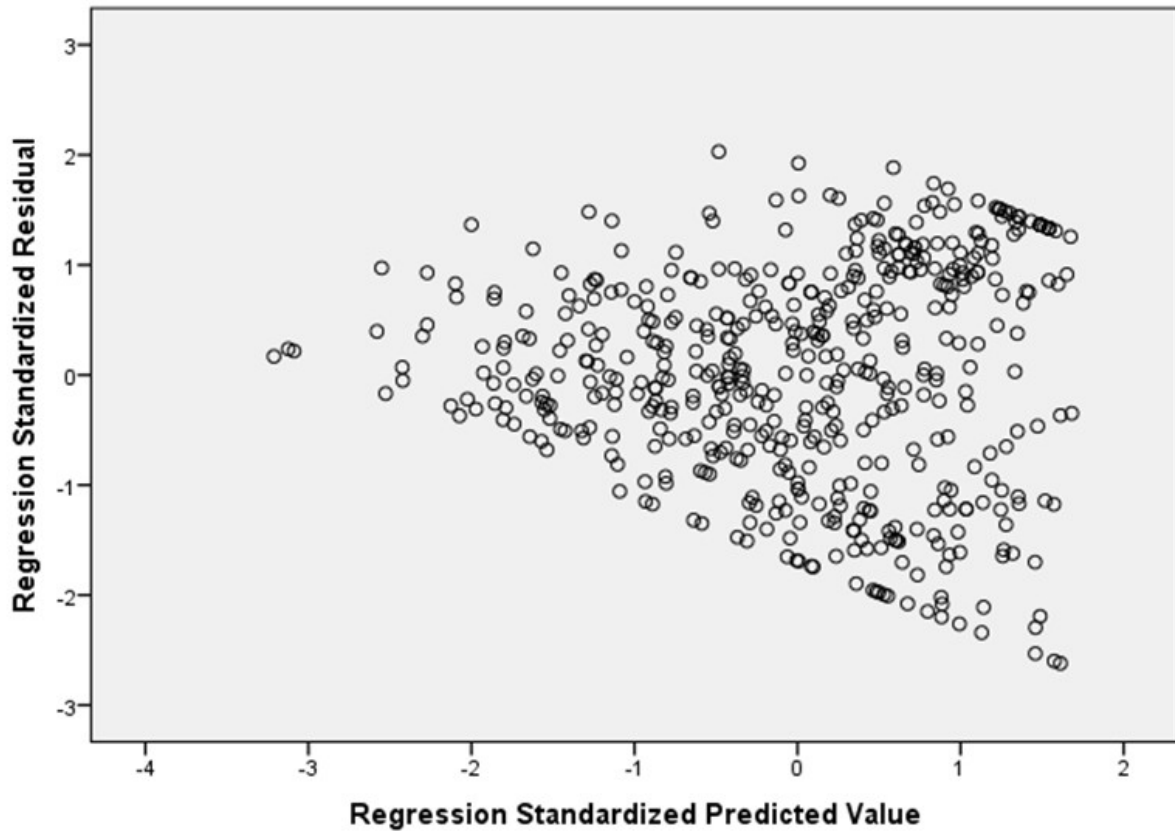Figure A10.11: Histogram – Location-Related Differences

Figure A10.12: Histogram – Accounting Knowledge

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Appendix 11: Assumption Tests of Linearity, Homoscedasticity, and Independence

Scatterplot

Appendix 12: Level of Use of Accrual Accounting for Decision Situations

Decision situation	Mean	Median	Frequency (in %)		
			Never (1)	Low (2+3+4)*	High (5+6+7)**
Budget planning	3.95	4	26	31	43
Budget implementation	4.48	5	17	33	50
Revenue management	3.60	3	36	26	38
Asset management	3.87	4	32	26	42
Liability management	3.26	3	45	22	33
Performance measurement	3.90	4	26	32	42
Risk management	3.87	4	27	31	42
Assessing cash flow needs	3.75	4	34	25	41
Investment management	2.71	1	56	19	25
Fiscal and macroeconomic matters	2.77	1	53	19	28
Provision of goods/services	3.32	3	40	25	35

*Low level of use of accrual accounting is defined as the total of 2 (almost never), 3 (occasionally), and 4 (frequently). ** High level of use of accrual accounting is defined as the total of 5 (usually), 6 (almost always), and 7 (always)*

Appendix 13: T-Tests of Path Coefficients Differences on Intention to Use Accrual Accounting—Decision Making vs Financial Reporting

Path (Decision Making – Financial Reporting)	t	Sig.
Behavioural belief - Attitude	-31.153	0.000
Normative belief – Subjective norm	-7.416	0.000
Control belief – PBC	-2.820	0.005
Attitude – Intention	28.229	0.000
Subjective norm - Intention	-28.367	0.000
PBC - Intention	-4.871	0.000

Appendix 14: Extent of Usefulness of Accrual Accounting for Decision Making

Decision situation	Mean	Median	Strongly Disagree						Strongly Agree
			1	2	3	4	5	6	7
Budget planning	5.62	6	9%	1%	3%	7%	15%	22%	45%
Budget implementation	5.73	6	5%	1%	4%	7%	14%	24%	44%
Revenue management	5.35	6	13%	1%	3%	6%	15%	20%	42%
Asset management	5.36	6	12%	1%	2%	8%	15%	22%	39%
Liability management	5.05	6	20%	1%	2%	6%	12%	20%	39%
Performance measurement	5.25	6	9%	2%	5%	12%	18%	20%	35%
Risk management	5.29	6	10%	2%	4%	11%	17%	21%	36%
Assessing cash flow needs	5.39	6	13%	1%	4%	7%	11%	23%	42%
Investment management	4.62	6	25%	1%	4%	6%	12%	19%	31%
Fiscal and macroeconomic matters	4.54	5	26%	2%	4%	8%	12%	19%	30%
Provision of goods/services	5.00	6	17%	2%	2%	9%	16%	18%	36%

Appendix 15: List of Stakeholders

Stakeholders	Expectation (Q6)		Compliance (Q7)	
	Mean	Median	Mean	Median
Audit Office	6.49	7	6.41	7
Ministry of Finance	6.54	7	6.42	7
Government Internal Auditor	6.40	7	6.29	7
Accounting profession	6.25	7	6.03	6
Parliament	5.91	6	5.89	6
Citizens	5.74	6	5.72	6
Accounting standard setter	6.34	7	6.14	7
Top management	6.15	7	6.18	6
Colleagues	5.61	6	5.69	6
International financing agencies	6.15	7	5.99	6
Creditors	5.99	6	5.81	6
Consultants	5.97	6	5.79	6
Credit rating agencies	6.04	6	5.89	6
Other public sector agencies	5.99	6	5.89	6