National Differences in Capital Budgeting Systems: A Comparison between Indonesian and Australian Firms

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study examines the impact of cross-cultural differences on capital budgeting systems.
Design/ Methodology/ Approach: Drawing on the contingency theory, 67 non-financial firms listed in Indonesia and Australia were analysed on a comprehensive range of capital budgeting systems.
Research findings: The findings support our predictions that relative to Australian firms, the Indonesian firms were found to emphasise more on sophisticated capital budgeting systems (e.g. real options). The results seem to be driven by Indonesia's higher level of perceived environmental uncertainty coupled with Sharia governance rules that aim to mitigate risky transactions. This study also provides evidence to show that the emphasis on sophisticated capital budgeting systems was driven by firm size and finance managers' level of education attainment.
Theoretical contributions/ Originality: Prior research has documented an incomplete picture of the link between national culture and capital budgeting systems. This is attributed to the lack of the development of contextual foundations for looking at cross-cultural differences followed by the narrow range of capital budgeting systems being considered in research.
Practitioner/ Policy implications: The findings of this study reflect the capital budgeting practices of Indonesia and Australia. The

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findings are important for practitioners who wish to evaluate project investments in these two countries.
Research limitation: Future research should consider looking into how Sharia impacts the use of capital budgeting systems and the performance effects of using different approaches.

Keywords: Capital Budgeting Systems, National Culture, Indonesia, Australia, Environmental Uncertainty
JEL Classification: M41

1. Introduction

The contingency theory has been widely applied in business and finance research as a means to observe various phenomena of practices. Drawing on its applicability, this study examines the impact of cross-cultural differences on capital budgeting systems (CBS). Focusing on two countries with different values but have immense prospects for worldwide commerce, this study aims to uncover whether or not there is a significant difference in the use of CBS practices between Indonesia and Australia.

A CBS is a package of formal practices that are used by firms throughout the process of decision-making while appraising project investments (Farragher, Kleiman, & Sahu, 2001). CBS practices encompass an assortment or a multiplicity of items. Researchers (Chittenden & Derregia, 2015; Kannadhasan & Nandagopal, 2010; Chen, 2008; Alkaraan & Northcott, 2013) classify these practices under four headings: capital budgeting techniques (CBT) which are financial techniques used to evaluate project investments (Chittenden & Derregia, 2015); risk management techniques (RMT) which supplement the capital budgeting techniques (CBT) by appraising the uncertainty linked with project investments (Kannadhasan & Nandagopal, 2010); non-financial information (NFI) which provides qualitative information that can be used to supplement the project investment decisions (Chen, 2008) and capital budgeting procedures (CBP) which offer formal structures and processes that are beneficial towards decision-making and which can be used throughout the project investment lifespan (Alkaraan & Northcott, 2013).

CBS may be classified as either naïve (e.g. payback period) or sophisticated (e.g. probability analysis) (Ho & Pike, 1998). Sophisticated CBS has long been acclaimed as the preferred approach for evaluating project investment decisions (Pike, 1988). Over time, a proliferation of

research (Chittenden & Derregia, 2015; Verbeeten, 2006) has provided empirical evidence which support the effectiveness of sophisticated CBS. Although the benefits of sophisticated CBS have been asserted by proponents, studies (Hermes, Smid, & Yao, 2007; Truong, Partington & Peat, 2008) have also reported a significant variation in CBS practices across countries. For example, Asian and European firms have traditionally selected naïve CBT (Hermes, Smid, & Yao, 2007; Sandahl & Sjögren, 2003) as their preferred approach while Anglo-American firms have progressively been selecting sophisticated CBT (Haka, 2006; Truong, Partington, & Peat, 2008). Studies (Haka, 2006; Leon, Isa, & Kester, 2008) seem to suggest that fewer firms choose sophisticated RMT in these settings.

The variation in CBS practices across countries can be attributed to various reasons. One of these can be traced to the respective country's difference in economic development. Hermes et al. (2007) found that Dutch firms employed more sophisticated CBS when compared to Chinese firms. This outcome is also supported by other studies (Andrés, Fuente, & San-Martin, 2015; Benetti, Decourt, & Terra, 2007; Yepes & Cuartas, 2014). Although such studies provide valuable insights into the engagement of sophisticated CBS within the business world of investments, it appears that few firms in developed countries have been observed to use sophisticated CBS practices such as RMT (Alkaraan & Northcott, 2013; Rossi, 2014). The work of Andor, Mohanty, and Toth (2015) have documented significant variations in the use of CBS practices across countries of similar levels of economic development. This suggests that the variations may not be solely due to differences in economic development alone. Based on observations, we propose that part of the reason causing these variations in CBS practices may lie in the failure of firms to control other contingency factors such as environmental uncertainty and national culture (NC). Our arguments are justified as follow.

First, CBS practices may vary across countries because of environmental uncertainty. This is evidenced by the reports shown in several studies (Andrés et al., 2015; Andor et al., 2015; Hermes et al., 2007; Rossi, 2014; Yepes & Cuartas, 2014) which seemed to have overlooked the environmental uncertainty factor. The reason could be because such studies may not recognise that environmental uncertainty can impact cross-country variations in CBS practices, with a few exceptions (Brunzell, Liljeblom, & Vaihekoski, 2013; Liu, Meng, & Fellows, 2015).

Second, CBS practices may vary across countries due to the influence of the national culture of the country (Carr & Tomkins, 1998; Shields, Chow, Kato, & Nakagawa, 1991). National culture (NC) can be defined as the set of beliefs, customs, values and behaviours that exist within a sovereign country (Seymour-Smith, 1986) that sets it apart from other countries. Recent qualitative studies (Carr, Kolehmainen, & Mitchell, 2010; Graham & Sathye, 2017) have investigated the contextual reasons causing cross-cultural differences in CBS practices. Graham and Sathye (2017), for instance, drew on the economic, social, legal and political origins to develop a deeper and holistic underpinning of national differences in CBS practices when investigating Chief Financial Officers (CFOs) and their practices in Indonesia and Australia. The current study extends on Graham and Sathye's (2017) work by looking at environmental uncertainty, firm size and the education attainment of financial managers as factors that may be affecting variations in CBS practices between Indonesia and Australia. This study also extends the sample to include a larger group besides limiting its focus of investigation to only non-financial listed firms. The current study broadly contributes to contingency research on national differences in CBS practices by examining the contextual underpinnings of cross-cultural differences in CBS based on their economic, legal, political and social origins. These contextual differences that are attributed to national culture are then linked with the CBS in order to advance research in this area. To the best of our knowledge, relatively little empirical enquiry on this relationship has been documented in literature.

This study contributes to contingency research by investigating the link between NC and CBS. Prior research has primarily considered CBT and NFI practices which will also be examined in the current study. However, the current study makes headway by also including two other CBS categories of RMT and CBP. In contingency research, CBS is crucial for the effective appraisal of project investment decisions. Improving our knowledge on the use of RMT and CBP practices will assist managers in improving their decision-making thereby, enhancing their project performance.

This study examines the survey results of CBS practices noted by non-financial listed firms of Indonesia and Australia. It specifically aims to understand whether or not NC plays a role in determining the CBS practices applied. A survey was undertaken to collect data on CBS practices, perceived environmental uncertainty, manager education

attainment and firm size. The findings indicate that managers in Indonesian firms regularly use sophisticated CBS practices unlike their Australian counterparts. Thus, it is suggested that differences in NC have a bearing on the results.

This paper comprises seven sections. Section 2 provides the background and rationale for the research setting. Section 3 contrasts the Indonesian and Australian contexts. Section 4 reviews the relevant literature. Section 5 establishes the research design and methodology. Section 6, presents the research findings and Section 7 concludes the study.

2. Background and Research Setting

This study contrasts Indonesian and Australian firms for several reasons. First, these two countries have intrinsically interesting settings given that they share neighbouring locations, have developed strong security and maritime agreements and both countries own the two largest economies in the region. The Australian Department of Foreign Affairs and Trade (DFAT) reported in 2015 that the bilateral trade relationship between Australia and Indonesia was worth over $A15 billion while bilateral investments between the two countries had approached $A10 billion. Second, despite the growing trade relations, leaders in both countries have noted in a joint statement that trade links have not achieved their full potentials (DFAT, 2017). To this end, leaders are committed to augmenting a comprehensive economic partnership so as to create new pathways for trade and investments. Third, since the announcement of the Islamic banking facility in Australia (AUSTRADE, 2010), Australian banks have begun positioning themselves so as to capitalise on the emerging Islamic finance market. The growth of the Sharia compliant banking and finance industry in Australia can further boost its trade and investment opportunities with Indonesia. This is because Indonesia has the world's largest Islamic population (AUSTRADE, 2010) and its legislative milieu is impacted by Sharia laws (National Committee of Corporate Governance, 2006; Fealy & White, 2008; Sakai, 2010). From the Islamic perspective, Sharia laws encourage the mitigation of risks. Since the CBS is used to estimate project outcomes that are impacted by risks, Sharia also informs the design of the CBS (Al-Ajmi, Saleh, & Hussain, 2011; Hamid, Craig, & Clarke, 1993).

3. Indonesian and Australian Contexts

Contingency research argues that the optimal design of a firm's management control system is contingent upon the characteristics of the business. In this regard, Indonesia and Australia have several cross-national differences that may influence the use of the CBS in the respective countries. For this purpose, we organised our discussions along three broad themes: economic development, environmental uncertainty and national culture. Tables 1 and 2 present a summary of our discussion.

As can be seen in Table 1, the two countries with huge commercial prospects are compared through seven factors that highlight their respective economic development.

From Table 2, it appears that Indonesia share some similarities with Australia in terms of unemployment but in other respects, both countries possess different characteristics as can be noted in the political contexts of corruption, religiosity, economic growth and others.

3.1 Economic Development

Prior literature (Andor et al., 2015; Hermes et al., 2007) has proposed that firms increasingly select more sophisticated CBS over time due to their improvements in economic development. These studies have also argued that the selection of CBS practices and the firm's economic development are related. It was claimed that firms from developing countries have access to lesser resources, lesser technology and lesser staff thus lesser opportunity for growth. Consequently, these firms resort to utilising less sophisticated CBS practices. Table 1 summarises the differences noted in the economic development between Indonesia and Australia. It is obvious that the Indonesian GDP per capita is substantially lower than that of Australia. Stark differences also persist in the education attainment and technological development between the two countries, with Australia having an edge in these two aspects. Although the situation in Indonesia seems to be experiencing faster levels of economic growth, it is still lagging behind Australia. Nonetheless, both countries have high penetration rates for mobile subscriptions with more than one subscription per person suggesting that technology is prevalent.

Table 1: Comparisons in Economic Development between Indonesia and Australia

	Indonesia	Australia
Economic development		
Real GDP % change (2015) [a b]	4.8%	2.4%
GDP per capita USD (2015) [a b]	$3,346.5	$51,118
Stock market capitalisation (USD) (2016) [c d]	$426 billion	$1.26 trillion
Education attainment (at least bachelor degree % total for people +25) [c d]	8.5%	29.8%
Government expenditure on education (% GDP) [c d]	3.3%	5.2%
Individuals using internet (% population) [c d]	22%	84.6%
Mobile subscriptions per 100 people [c d]	132.2	132.8

Note: [a] IHS (2017a); [b] IHS (2017b), [c] World Bank (2016a), [d] World Bank (2016b).

Table 2: Summary of the Indonesian and Australian Contexts

Context	Indonesia	Australia
Perceived public corruption	Higher corruption [a]	Lower corruption [b]
Government trade policies	Nationalistic approach [c]	Open and free approach [b f]
Legal system	Based on traditional custom, Sharia, Dutch and Indonesian rules. Going through reform [d]	Based on English models & replaced by Australian law over time. Stable legal system [e]
Economic growth	Higher 5-6% [a]	Lower 2-3% [b]
Inflation rates	Higher, volatile 2-12% [g]	Lower, stable 2-3% [g]
Foreign exchange rates	More volatile [a c]	Less volatile [b e]
Lending interest rates	Higher 12-14% [c]	Lower 6-8% [e]
Stock market growth	Faster growth [h]	Slower growth [i]
Unemployment	Around 6% [a]	Around 6% [b]
Religiosity	Predominantly Muslim [c]	Predominantly Christian [e]
Individual vs collective	Maintain social harmony, collective and cooperative [j]	Independent, assertive and autonomous [k]

Note: [a] EIU (2013a), [b] EIU (2013b), [c] IHS (2017a), [d] Lindsey (2008), [e] IHS (2017b), [f] Business Monitor (2018b), [g] OECD (2016), [h] World Bank (2016a), [i] World Bank (2016b), [j] Tsamenyi, Noormansyah and Uddin (2008), [k] Patel (2003).

3.2 Environmental Uncertainty

Researchers (Liu et al., 2015) have shown that cross national differences in environmental uncertainty have significant impacts on CBS practices. Since project investments involve the contemplation of uncertainty on financial predictions, it would seem that the CBS is among one of the management control practices that may be most strongly impacted by differences in uncertainty (Graham & Sathye, 2017). In this regard, our discussion is organised based on political, legal, economic and social foundations of uncertainty.

Researchers like Liu et al. (2015) and Brunzell et al. (2013) have noted that cross-national differences in political and legal uncertainty can impact on CBS practices. Therefore, the phenomenon is also likely to occur in Indonesia and Australia (Graham & Sathye, 2017) because both countries bear several national differences in culture. Indeed, Wihantoro, Lowe, Cooper and Manochin (2015) have described the political uncertainty in Indonesia as being so severe that it obstructs economic development. Over the years, however, the Indonesian government has undertaken democratic reforms (Harun, Van-Peursem, & Eggleton, 2015). The key planks of these democratic reforms include the creation of a well-organised bureaucracy and the devolution of government responsibilities to provinces (Wihantoro et al., 2015). Nevertheless, despite these reforms, uncertainty in the form of new corruption scandals continue to surface (Lindsey, 2008; IHS, 2017a) and corruption perceptions continue to persist on the high (Transparency International, 2017). It is further observed (Business Monitor, 2018a) that the domestic political scene of Indonesia is also characterised by a proliferation of minority parties that seem to be reducing the efficiency of trade and investments in the country besides dampening the business confidence and investments of prospective firms.

The outlook in Australia is slightly different. Its political and legal uncertainty is minor and more stable in comparison to Indonesia (Business Monitor, 2018b). Australia was also ranked the 13th lowest of 180 countries on a recent corruption perception index (Transparency International, 2017). Nonetheless, the federal government has been subjected to some political uncertainty due to regulation necessities in negotiating with minor political parties (IHS, 2017b).

Since the global financial crisis (GFC) of 2008, Indonesia has faced persistent economic problems which further fuel its political and other environment uncertainties. Inflation, for example, has been oscillating

between 2 per cent to 12 per cent (OECD, 2016) while interest rates have remained comparatively higher than that of other developed economies. The capriciousness of its foreign exchange rate also continues to be of concern (IHS, 2017a). The situation in Australia, however, witnesses a GDP growth that has been modest since the GFC. Similarly, economic uncertainty has remained low with a relatively stable interest rate and inflation (OECD, 2016).

3.3 National Culture

Research (Carr et. al., 2010; Liu et. al., 2015) has consistently demonstrated the impact of cross-cultural differences in the selection of CBS practices. Such research also ponders on the best approach to use so as to capture and measure these cross-cultural differences more precisely. Consistent with prior research (Leach-Lopez, Stammerjohan, & McNair, 2007; Jansen, Zhang, Sobel, & Chowdury, 2009; Heidhues & Patel, 2011), the current study takes a holistic approach in measuring cross-cultural differences by contrasting economic, legal, political and social differences. In addition to this, we further highlight two characteristics of national culture that were identified from literature review. These two characteristics could influence cross-cultural differences when applying CBS practices in the two countries of Indonesia and Australia. They comprise individualism/collectivism and religiosity.

3.3.1 Individualism/Collectivism

Researchers (Efferin & Hopper, 2007; Reisinger & Turner, 1997) from anthropology and other disciplines and traditions have labelled Indonesia as a collectivistic culture. Collectivism reflects customs and preferences that are aimed at maintaining social harmony (*rukan*) (Tsamenyi et al., 2008). It also emphasises on moderating the expression of contentious opinions and the making of cooperative decisions (*gotong royong*) to achieve a consensus (*mufacat*) (Efferin & Hartono, 2015). As the pioneer in looking at cultures, Geertz (1973) noted that collective decision-making approaches have been used for centuries and these are based on agricultural traditions.

In contrast, Australian values centre on independence and autonomy which reflect an individualistic culture or individualism (Hofstede, 2001; Reisinger & Turner, 1997). Individualism has been observed within the Australian society since British settlement in

1788 (Goodnow, Burns & Russell, 1989). From that time onwards, the colonists had been experiencing isolation from other people and power. This developed their self-reliance attitude and behaviour (Borrie, 1989; Patel, 2003).

Graham and Sathye (2017) proposed that there is a distinction between collectivism and individualism among firms. These differences may have significant implications on the firms' CBS practices such as formal committee workings held during project evaluations and approvals. From the Indonesian working context, Graham and Sathye (2017) found that sophisticated committee workings are used when managers evaluate projects. The distinctive decision-making approaches are designed to achieve management consensus. Longer meetings are incorporated so as to accommodate the different points of view. These approaches towards decision-making are found to be most effective for large and complex projects where the firm's economic and socio-political uncertainty have the potential to impact its project outcomes. In contrast, firms in Australia are more self-sufficient, managers make individual judgments that are permitted by their designated roles while the chief executive officer (CEO) made the final call on project decisions.

3.3.2 Religiosity – Indonesia is a Majority Muslim Country

Another potentially important feature that varied between Indonesia and Australia is religiosity. Indonesia is the world's most populous Muslim country (Business Monitor, 2018a). It adheres to the *Sharia* laws which are based on Islamic canonical laws of the Koran and the teachings and traditions of the prophet. *Sharia* is partly regulated in Indonesia; it impacts firms' financial management through the contemplation of risk and uncertainty (Fealy & White, 2008; Lindsey, 2008). *Sharia* also prohibits transactions that involve risks because risks are considered exploitative, placing hardships on the poor. If *Sharia* rules on mitigating risky transactions are considered when making project investment decisions, then it may be that Indonesian firms would adopt sophisticated CBS to moderate environmental uncertainty.

Studies (Ahmad & Hassan, 2007; Chazi, Terra, & Zanella, 2010; Al-Ajmi et al., 2011) have examined *Sharia* compliant approaches in appraising project investment decisions. These studies agree that sophisticated CBS practices such as discounted cash flow calculations that are used to evaluate project investment decisions are permitted

under *Sharia* practices (Ahmad & Hassan, 2007). Similarly, Chazi et al. (2010) and Al-Ajmi et al. (2011) found that firms from Islamic countries also commonly adopt sophisticated CBS practices to appraise project investments and to mitigate risks.

4. Literature Review

Literature on contingency theory (e.g. Chenhall & Morris, 1993) has long proposed that CBS practices must be selected to suit firms' environmental conditions. Such CBS practices include the variety of ways firms appraise project investments throughout their project lifecycles. Literature (Chenhall & Morris, 1993; Chittenden & Derregia, 2015; Alkaraan & Northcott, 2013) drawing on contingency theory has categorised CBS practices under four broad headings: capital budgeting techniques (CBT), risk management techniques (RMT), non-financial information (NFI) and capital budgeting procedures (CBP), as explained earlier.

Applying the contingency theory as an approach, this study examines the national differences that could impact on the CBS practices of non-financial listed firms in Indonesia and Australia. Specific contingency factors that were considered for this study include perceived environmental uncertainty, firm size, education attainment and national culture. We contend that a firm's need for sophisticated CBS practices is dependent upon these four factors. Consistent with prior research (Brunzell et al., 2013; Hermes et al., 2007), this study also posits that a firm's use of sophisticated CBS practices is dependent on firm size, education attainment and the degree of environmental uncertainty faced by the firm. Additionally, it is predicted that Indonesian managers would place more importance on sophisticated CBS practices due to cross-cultural differences.

4.1 Perceived Environmental Uncertainty

Perceived environmental uncertainty is the state where managers perceive their environment to be ambiguous and unclear (Chenhall & Morris, 1993). This is manifested when there is a difference in the information available and the information required (Buchko, 1994). Studies (Haka, 1987; Brunzell et al., 2013; Holmen & Pramborg, 2009) suggested that there is a mixed support for the linkage between uncertainty and sophisticated CBS practices. In sophisticated CBT,

project outcomes are forecasted by discounting the cash flows to their present value (e.g. net present value). Contrary to that, naïve CBT can be easily calculated by using the rules of thumb (e.g. payback period). Chen (2008) posited that the forecasting of sophisticated CBT is dependent on its ability to estimate model parameters. These parameters are accurately calculated only when firms are faced with more certain environments. As a result of facing a more certain environment as noted by a stable political context firms tend to select sophisticated CBT (Haka, 1987; Brunzell et al., 2013; Holmen & Pramborg, 2009).

In comparison, sophisticated RMT formally estimates the impact of environmental uncertainty by looking at the project outcomes (e.g. probability analysis) while naïve RMT incorporates ad hoc adjustments (e.g. sensitivity analysis). Contingency studies (Chen, 2008) concur that although sophisticated RMT is costly in application, the cost effectiveness of applying the technique improves as uncertainty increases. Consequently, firms commonly select sophisticated RMT when facing higher financial (Verbeeten, 2006), socio-economic (Ho & Pike, 1998) and environmental uncertainty (Chittenden & Derregia, 2015).

Firms are only expected to use sophisticated CBT and sophisticated RMT when both are used in assisting project investment decisions. Elmassri, Harris and Carter (2016) argued that in cases of extreme uncertainty, both the CBT and RMT information is of little benefit to decision makers. In such cases, the management collects sophisticated NFI to support its decision making. Sophisticated NFI comprises the provision of strategic NFI (Farragher et. al., 2001) while sophisticated CBP comprises decision making protocols, committees and other formal procedures (Alkaraan & Northcott, 2013).

4.2 Firm Size

Many studies (Alkaraan & Northcott, 2013; Andrés et al., 2015; Brunzell et al., 2013; Hermes et al., 2007; Rossi, 2014; Verbeeten, 2006) have noted the positive relationship that exists between firm size and the use of sophisticated CBS. Arguments supporting this connection include: (a) larger firms make more rational decisions; (b) larger firms have access to resources, qualified and experienced staff; (c) larger firms apply modern and innovative decision making practices; and (d) larger firms are subject to agency problems, so they apply sophisticated practices to minimise political influences.

4.3 Education

Prior literature (Al-Ajmi et al., 2011; Brunzell et al., 2013; Graham & Harvey, 2002) has also observed that management characteristics such as education and age affect the use of sophisticated CBS. These studies acknowledge that higher levels of education significantly impact the use of sophisticated CBS such as net present value.

4.4 National Culture

Previous research (Carr et al., 2010; Carr & Tomkins, 1998; Shields et al., 1991) reported that national culture is significantly linked to the selection of CBS. Several approaches are used to measure the NC and some of these including the holistic approaches, have been improved (Heidhues & Patel, 2011). The national culture was also calculated based on dimensions (Hofstede, 1980; Triandis et al., 1993). An upsurge of research (Hofstede, 2001) has been relying on narrowly focused and calculated NC dimensions such as those developed by Hofstede (1980) but these have led to some difficulties in comprehending the results. Researchers (Baskerville, 2003; Bhimani, 2006) have deliberated on which path to take in addressing these methodological limitations. In the context of this study, the approach utilised by Heidhues and Patel (2011) was applied for developing the holistic foundations for the national culture differences. This approach was built upon the themes of the economic, legal, political and social lines.

Focussing on Indonesia and Australia, this study aims to link the environmental contexts of both countries to their selection of CBS practices by comparing their respective economic, legal, political and social contexts. Since there are wide differences in the economic development between Indonesia and Australia, it is expected that Indonesia would be utilising more sophisticated CBS, especially, RMT, CBP and NFI. The following reasons support Indonesia's position.

Managers in the Indonesian context would typically experience higher levels of environmental uncertainty and more inclined towards using sophisticated CBP and NFI because of Indonesia's economic, legal, political and social differences. Moreover, the *Sharia* based governance guidelines applied in Indonesia have a bearing on mitigating risks (Sakai, 2010). In that regard, it is expected that managers will be using sophisticated RMT. In comparison, managers in the Australian context would experience lower levels of uncertainty hence their inclination towards using naïve CBS.

From their study, Graham and Sathye (2017) noted several reasons which can explain why sophisticated CBS would suit the Indonesian context. Firstly, in accordance with the practice to mitigate risky transactions, it is obvious that sophisticated RMT would consist of an extensive analysis of uncertainty. Secondly, sophisticated CBP involves the use of formal approaches that can be used to mitigate risks throughout the project management. Thirdly, the NFI provides qualitative information that can be used to moderate uncertainty in project evaluations. Chen (2008) stated that while sophisticated CBT provides superior information for making project investment decisions, sophisticated CBT can only be adequately calculated in certain environments due to difficulties in estimating discounted cash flow parameters. Based on this, it is therefore argued that Indonesian managers are more likely to adopt naïve CBT. Thus, the following hypotheses are developed for testing:

H_1: Indonesian firms will place less importance on sophisticated capital budgeting techniques than Australian firms due to national culture differences.

H_2: Indonesian firms will place more importance on sophisticated risk management techniques than Australian firms due to national culture differences.

H_3: Indonesian firms will place more importance on sophisticated non-financial information than Australian firms due to national culture differences.

H_4: Indonesian firms will place more importance on sophisticated capital budgeting procedures than Australian firms due to national culture differences.

5. Research Design and Methodology

A postal survey was administered on finance managers holding senior positions in 120 non-financial listed firms. Prior to this, the questionnaire was piloted on two managers in Australia and two in Indonesia. Based on the outcome, the final questionnaire was adjusted to 21 questions. The time estimated for answering the questionnaire was between 15 to 20 minutes. Only non-financial listed firms were selected from Indonesia and Australia which totalled 644 and 255 firms respectively. This is because larger firms were expected to be

making project investment decisions with certainty. Given the available resources, the sample size was set at 120 and this number was equally divided between Indonesia and Australia. A random sample was picked based on the random number tables that were available online.

The questionnaires were distributed to the respondents between October 2013 and April 2014. A total of 70 questionnaires were retrieved from the sample of 120 sent to non-financial listed firms – 34 (57 per cent response rate) from Australia and 36 (60 per cent response rate) from Indonesia. Three responses were discarded due to incompleteness, leaving a final sample of 32 Australian and 35 Indonesian firms. The final sample totalled 67 usable responses (56 per cent response rate). It is acknowledged that the sample size is not large, but statistically adequate for analysing the data. Van der Stede, Young and Chen (2005, p. 669) had argued that instead of focussing on a large sample size, it is more crucial to focus on minimising non-response bias as this criteria can critically affect the quality of data assessment. The response rate of this study is similar to the average response rate of other survey studies (Van der Stede et al., 2005) done in management accounting.

The demographic information of these samples revealed that all the finance managers were experienced in making project investment decisions. Of these, 97 per cent of the respondents had attained at least a bachelor degree. The respondents' education attainment shows that 84 per cent of the Australian respondents were educated in Australia and 97 per cent of the Indonesian respondents were educated in Indonesia.

5.1 Dependent Variables

In line with Pike's (1988) recommendation, the respondents were asked to rate how important each CBS practice was for making project investment decisions. A five-point Likert scale was used with anchors of 1 = not at all important and 5 = extremely important. Consistent with Graham and Sathye's (2017) outcomes, 31 CBS items were applied on the two countries. These are listed in Figure 1.

As can be seen, five capital budgeting techniques and seven risk management techniques noted in CBS practices were provided followed by nine non-financial information and 10 capital budgeting procedures, totalling 31 items.

Capital Budgeting Techniques	Risk Management Techniques
1. Return on investment 2. Discounted payback 3. Internal rate of return 4. Net present value 5. Payback period	1. Certainty equivalents 2. Discount rate adjustments 3. Monte Carlo simulations 4. Probability analysis 5. Real options and decision trees 6. Scenario analysis 7. Sensitivity analysis
Non-financial Information	**Capital Budgeting Procedures**
1. Strategic and competitiveness information 2. Customer information 3. Employee information 4. Environmental information 5. Political and regulatory information 6. Quality information 7. Social and community information 8. Supplier and raw materials information 9. Synergy information	1. Obtaining advice from experts and consultants 2. Formal project committees 3. Generation and screening of ideas for new project investments 4. Maintenance of long-term capital plans 5. Post implementation reviews 6. Formal project approvals 7. Preparation of business cases 8. Project monitoring and reviewing 9. Searching and screening of project alternatives 10. Remuneration and rewards linked to project outcomes

Figure 1: Capital Budgeting System Items Included in the Survey and Classified by CBS

5.2 Independent Variables

5.2.1 National Culture

Following several prior studies (Chow, Shields, & Wu, 1999; Leach-Lopez et al., 2007; Jansen et al., 2009), a dummy variable (INDONESIA) was used to proxy for national culture (NC) where zero represents Australia and one represents Indonesia. The purpose is to observe how the NC affected the dependent variable.

5.2.2 Perceived Environmental Uncertainty (PEU)

Prior studies (Brunzell et al., 2013; Ho & Pike, 1998; Verbeeten, 2006) have shown that various measures of environmental uncertainty can impact the use of sophisticated CBS. In those studies, perceived environ-

mental uncertainty was measured through Gordon and Narayanan's (1984) model which consists of seven item instruments that can measure uncertainty from several perspectives including: environment, industry, competitor actions, customer preferences, scientific discoveries in the industry as well as regulatory and economic factors. This approach in measuring perceived environmental uncertainty has been noted to possess a single factor structure (Cronbach alpha = 0.77) which has also been used in a CBS context previously (Chenhall & Morris, 1993).

5.2.3 Firm Size (LOGSIZE)

Firm size impacts the sophistication of CBS (Chen, 2008). In this study, it was measured by using the log of annual sales turnover for the respondent's firm. This is consistent with the assertion made by Hermes et al. (2007).

5.2.4 Education Attainment (EDUC)

Higher education attainment impacts the use of more sophisticated CBS practices (Brunzell, et al., 2013). In this study, education attainment was measured through six items of choices (1 = high school, 2 = technical college, 3 = bachelor degree, 4 = honours degree, 5 = master degree, 6 = doctorate degree).

Table 3 illustrates the descriptive statistics derived for the continuous variables. They encompass perceived environmental uncertainty (PEU), firm size (LOGSIZE) and education attainment (EDUC). The survey responses indicate that on average, respondents consider the PEU to be moderately uncertain (Mean = 3.21; SD = 0.44). The average LOGSIZE for the sample firms was 11.82 (SD = 2.18). Data revealed that managers had an average education level of an honours degree (Mean = 4.13, SD = 1.12).

Table 3: Descriptive Statistics on Continuous Variables

Variable	N	Mean	St. Dev	Min	Max
PEU	67	3.21	0.44	1.90	4.20
LOGSIZE	67	11.82	2.18	5.39	16.70
EDUC	67	4.13	1.12	1.00	6.00

Note: PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

6. Results

6.1 Univariate Analysis

6.1.1 Univariate Tests for Hypothesis 1

Hypothesis 1 (H_1) predicts that Indonesian firms will place less importance on sophisticated capital budgeting techniques (CBT) than Australian firms due to NC differences. As a univariate test of this hypothesis, the t-test results of cross-cultural differences for the CBT practices were calculated. Consistent with prior studies (Hermes, et al., 2007), the respondents were asked to rate the level of importance their firms placed on CBT practices (where 1 = not at all important and 5 = extremely important). Table 4 shows the mean scores for importance placed for each of the CBT practices. This will indicate whether firms from both countries place greater importance on the naïve techniques or on the sophisticated techniques.

In this regard, it was found that the univariate analysis did not support the prediction of H_1. The t-test results for cross-cultural difference as noted in the means for two of the sophisticated CBT (net present value, internal rate of return) were observed to be significant. However, the direction is contrary to expectation. For instance, the mean score for net present value for the Indonesian and Australian samples remained as 3.75 and 2.97 respectively. Further, the difference between the means was also significant at the 10 per cent level (t = -1.880, ρ = 0.066). Stronger results were also reported for the internal rate of return where the mean score for internal rate of return for Indonesian

Table 4: Importance Placed on Capital Budgeting Techniques (CBT) Used by Indonesian and Australian Firms

Capital Budgeting Technique (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
Sophisticated approaches				
1. Net present value	2.97	3.75	-1.880	0.066*
2. Internal rate of return	2.03	3.19	-2.486	0.016**
3. Discounted payback period	1.23	1.92	-1.432	0.157
Naïve approaches				
4. Payback period	3.03	3.97	-2.662	0.011**
5. Return on investment	3.84	4.28	-1.528	0.131

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

and Australian samples stood as 3.19 and 2.03 respectively (t = -2.486, ρ = 0.016). Finally, the naive payback period was perceived to be significantly more important for Indonesia than for Australia (t = -2.662, ρ = 0.011). Here, the mean scores were 3.97 and 3.03 respectively. The results therefore, suggest that while payback remains to be important in both countries, sophisticated CBT practices are gaining prominence in Indonesia (Leon et al., 2008) but are diminishing in Australia (Truong et. al., 2008). Contrary to predictions, Indonesian managers seem to place more importance on sophisticated CBT than their Australian counterparts, despite theoretical difficulties in using them when faced with higher levels of uncertainty.

6.1.2 Univariate Tests for Hypothesis 2

The variety of risk management techniques (RMT) used by Indonesian and Australian firms were also noted in the results. The mean score demonstrating the evidence is shown in Table 5. The results of the statistical tests of cross-cultural differences project the importance placed on the RMT. It is obvious that scenario analysis, discount rate adjustments and sensitivity analysis are all considered as naïve techniques. At the same time, real options, probability analysis, simulations and certainty equivalents are considered to be sophisticated. H_2 predicts that Indonesian firms will place more importance on

Table 5: Importance Placed on Risk Management Techniques (RMT) Used by Indonesian and Australian Firms

Risk Management Technique (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
Sophisticated approaches				
1. Real options	0.81	3.25	-6.211	0.000***
2. Probability analysis	1.42	3.03	-3.868	0.000***
3. Simulations	0.00	1.33	-4.83	0.000***
4. Certainty equivalents	2.48	3.69	-3.125	0.003***
Naïve approaches				
5. Scenario analysis	3.52	3.56	1.080	0.914
6. Discount rate adjustment	2.35	2.03	0.675	0.502
7. Sensitivity analysis	3.61	3.19	0.996	0.323

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

sophisticated RMT than Australian firms do due to NC differences. The results demonstrate that all the differences of the sophisticated RMT were statistically significant, as noted in Table 5.

The findings of the current study are consistent with the work of Kester et al. (1999). It is apparent that the Australian firms placed more importance on naïve RMT (scenario analysis, sensitivity analysis and discount rate adjustment). In contrast, the Indonesian firms placed more importance on a broader range of RMT. The mean score for real options, as noted by the Indonesian firms, is significantly higher at 3.25, as compared to 0.81 noted in Australian firms ($t = -6.211$, $\rho = 0.000$). Similarly, the mean score for probability analysis, simulations and certainty equivalents were significantly higher for Indonesian firms at 3.03, 1.33 and 3.69 respectively as compared to Australian firms, at 1.42, 0.00 and 2.48 respectively. No significant difference was found for the importance placed on the naïve scenario analysis, discount rate adjustment and sensitivity analysis for both countries. The univariate results can thus be said to support H_2 which states that Indonesian firms will place more importance on sophisticated RMT than Australian firms due to national culture differences. The results drawn from the Indonesian firms suggest that the use of sophisticated RMT is expanding in comparison to the results provided by prior studies (Leon et al., 2008).

6.1.3 Univariate Tests for Hypothesis 3

Table 6 presents statistics which describe the importance firms from both countries placed on the various NFI when making project investment decisions. NFI is the qualitative information derived from a strategic nature that can be used to supplement project investment decision-making. H_3 predicts that Indonesian firms will place more importance on sophisticated NFI than Australian firms due to national culture differences. The outcome drawn from the analysis is projected in Table 6. It shows the t-test results of the cross-cultural differences for the NFI practices of the firms involved.

The results illustrate that the respondents placed particular importance on several types of NFI. Among the Australian firms, the most important types of NFI used include strategic, synergistic and customer information. This is evidenced in the mean score of 4.00, 3.77 and 3.39 respectively. Likewise, the Indonesian firms also placed emphasis on similar concerns but greater emphasis was placed on a broader range of the NFI. For instance, the results of the statistical tests

Table 6: Importance Placed on Non-Financial Information (NFI) Used by Indonesian and Australian Firms

Non-financial information (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
1. Customer	3.39	4.39	-3.149	0.003***
2. Employees	3.00	3.17	-0.401	0.690
3. Environmental	2.29	3.39	-2.425	0.019**
4. Political	2.90	2.47	0.873	0.386
5. Quality	2.90	3.86	-2.428	0.019**
6. Social	1.55	1.83	-0.578	0.565
7. Strategic	4.00	4.36	-1.482	0.143
8. Suppliers	2.74	4.06	-3.359	0.001***
9. Synergies	3.77	4.22	-2.051	0.044**

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

indicate that Indonesian firms placed significant emphasis on other types of NFI such as customer, environment, quality, supplier and synergy information. These results support H_3 which states that Indonesian firms will use more sophisticated NFI than Australian firms due to national culture differences. The importance firms placed in strategic NFI has been documented previously (Abdel-Kader & Dugdale, 2001; Alkaraan & Northcott, 2006, Carr et. al, 2010). This study highlights that a broader range of NFI including synergy and environmental NFI, can be important for project investment decision-making.

6.1.4 Univariate Tests for Hypothesis 4

H_4 predicts that Indonesian firms will place more importance on sophisticated CBP due to NC differences when compared to Australian firms. The hypothesis was tested by comparing the t-test results of the cross-cultural differences in the various items of the CBP practices. The t-test analysis shows significant differences for five of the ten CBP items (Table 7).

Consistent with H_4, the Indonesian firms placed greater importance on four of the sophisticated CBP practices. In Indonesia, for example, the mean score for long term capital plan was 3.64 whereas in Australia it was 2.29 ($t = -3.193$, $\rho = 0.002$). Similarly, the importance placed on the generation and screening of ideas for the Indonesian and Australian

Table 7: Importance Placed on Capital Budgeting Procedures (CBP) Used by Indonesian and Australian Firms

Capital budgeting procedures (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
1. Advice from experts	3.16	3.47	-0.816	0.417
2. Formal project committees	1.90	2.56	-1.317	0.192
3. Long term capital plan	2.29	3.64	-3.193	0.002***
4. Generation and screening of ideas for new investments	2.48	3.56	-3.010	0.004***
5. Search and screening of project alternatives	2.87	3.64	-2.241	0.029**
6. Preparation of business case	4.26	2.81	4.015	0.000***
7. Formal project approval	4.00	3.64	1.087	0.281
8. Project monitoring and review	3.71	3.64	0.199	0.843
9. Post implementation review	3.19	3.61	-1.102	0.274
10. Remuneration and rewards linked to project outcomes	2.00	2.97	-2.091	0.041**

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

samples were 3.56 and 2.48 respectively (t = -3.010, ρ = 0.004). It was also observed that the search and screening of project alternatives had been given less emphasis in Australia (2.87) unlike Indonesia (3.64) (t = -2.241, ρ = 0.029). Finally, the results indicate that remuneration linked to project outcomes was significantly higher for the Indonesian firms when compared to Australian firms (2.97 versus 2.00 respectively).

Contrary to H_4, Australian firms placed greater importance on preparing a business case when compared to Indonesian firms. The mean score for a business case in Australia was 4.26 whereas in Indonesia the mean score was 2.81 (t = 4.015, ρ = 0.000). Nevertheless, the differences in the remaining five CBP practices were not significant.

Overall, these results offer some support for H_4. The importance placed on four of the ten sophisticated CBP practices was significantly higher in Indonesia. Prior studies have given limited attention to CBP practices such as decision-making procedures (Alkaraan & Northcott, 2013; Alkaraan, 2016). This study reveals that a variety of CBP practices are important for making project investment decisions in the Indonesian and Australian context.

6.2 Multivariate Analysis

By making reference to the results presented in Tables 5 to 8, it is obvious that certain CBS practices assumed higher importance in the decision-making practices of the managers in Indonesian firms when compared to managers in Australian firms. It was further observed that managerial preferences were related to other characteristics such as firm size, perceived environmental uncertainty and education attainment.

In looking at the capital budgeting techniques (CBT), only net present value, internal rate of return and payback period were examined. The other CBT practices were excluded since their results in Table 4 showed no significant difference in the mean scores between Indonesian and Australian firms. The results of the regression analysis for CBT as presented in Table 8 support the conclusions drawn from the univariate analyses. These had emphasised that Indonesian managers placed significantly higher importance on the techniques of the internal rate of return and payback period. The use of net present value was observed to be positively related to perceived environmental uncertainty, firm size and education attainment of the managers. Further, the national setting also indicates a significant effect hence, H_1 was not supported. Contrary to expectations, Indonesian managers placed higher importance on both the sophisticated and naïve CBT items.

Table 8: Regression Analysis on the Determinants of Capital Budgeting Techniques (CBT)

	Net Present Value	Internal Rate of Return	Payback Period
Constant	-3.65**(1.73)	-0.65(2.12)	0.30(1.57)
INDONESIA	0.48(0.40)	1.15**(0.48)	0.88**(0.36)
PEU	1.05**(0.43)	-0.07(0.53)	0.56(0.39)
LOGSIZE	0.18*(0.09)	0.13(0.11)	0.02(0.08)
EDUC	0.32**(0.15)	0.34*(0.18)	0.18(0.13)
N	67	67	67
R^2	24.7%	16.2%	16.1%
F-statistic	5.084***	2.987**	2.972**

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

Table 9 shows the results of the regression analysis for sophisticated risk management techniques (RMT). Results from naïve RMT were not displayed because Table 5 had earlier shown that there was no significant difference between Indonesian and Australian firms. The results had noted that real options, probability analysis, simulations and certainty equivalents had assumed a higher importance in the CBS practices of the Indonesian managers. These findings therefore, support H_2. Of these factors, real options were shown to be significantly related to the level of perceived environmental uncertainty as experienced by managers. In addition, larger firms were more likely to place importance on using certainty equivalents.

Table 9: Regression Analysis on the Determinants of Risk Management Techniques (RMT)

	Real Options	Probability Analysis	Simulations	Certainty Equivalents
Constant	1.16(1.23)	1.60(1.24)	1.08(0.91)	3.88***(1.22)
INDONESIA	1.4***(0.28)	0.74**(0.28)	1.19***(0.21)	0.64**(0.28)
PEU	0.71**(0.31)	0.47(0.31)	0.28(0.23)	0.09(0.31)
LOGSIZE	-0.10(0.06)	-0.05(0.06)	-0.03(0.05)	-0.11*(0.06)
EDUC	-0.02(0.10)	0.04(0.10)	-0.02(0.08)	0.07(0.10)
N	67	67	67	67
R^2	38.4%	15.0%	40.7%	10.1%
F-statistic	9.677***	2.737**	10.636***	1.745

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

Table 10 shows the results for the determinants of non-financial information (NFI). Only those results that carried significant differences in the mean scores between Indonesian and Australian firms, as noted in Table 6, are displayed. Results presented in Table 10 suggest that Indonesian managers placed higher importance on customers, quality, suppliers and synergies. Managers with higher perceived environmental uncertainty placed more importance on customers. These results henceforth, support H_3.

Table 10: Regression Analysis on the Determinants of Non-Financial Information (NFI)

	Customers	Environment	Quality	Suppliers	Synergies
Constant	-0.95(1.34)	-2.14(2.06)	0.08(1.83)	3.19*(1.83)	2.45**(1.02)
INDONESIA	0.75**(0.31)	0.77(0.47)	0.76*(0.42)	1.36***(0.42)	0.47**(0.23)
PEU	0.97***(0.34)	0.68(0.51)	0.55(0.46)	0.06(0.46)	0.36(0.26)
LOGSIZE	0.08(0.07)	0.18*(0.11)	0.09(0.09)	-0.05(0.09)	-0.03(0.05)
EDUC	-0.10(0.11)	0.08(0.17)	0.04(0.15)	-0.02(0.15)	0.13(0.09)
N	67	67	67	67	67
R^2	27.7%	15.8%	12.3%	16.0%	12.0%
F-statistic	5.935***	2.915	2.181*	2.955**	2.105*

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

The determinants of various capital budgeting procedures (CBP) are displayed in Table 11. Other CBP items have been omitted since results in Table 7 had identified no significant differences between Indonesian and Australian firms. The results presented in Table 11

Table 11: Regression Analysis on the Determinants of Capital Budgeting Procedures

	Long Term Capital Plan	Generate and Screen Ideas	Project Alter-natives	Business Case	Rewards Linked to Project Outcomes
Constant	2.05(1.94)	-1.15(1.60)	1.31(1.58)	1.92(1.80)	-1.02(2.17)
INDONESIA	1.47***(0.44)	0.87**(0.37)	0.59(0.36)	-1.60***(0.41)	0.88*(0.50)
PEU	-0.43(0.48)	0.67*(0.40)	0.38(0.40)	0.43(0.45)	0.20(0.54)
LOGSIZE	0.05(0.10)	0.09(0.08)	0.06(0.08)	0.07(0.09)	0.12(0.11)
EDUC	0.24(0.16)	0.12(0.13)	-0.07(0.13)	0.05(0.15)	0.25(0.18)
N	67	67	67	67	67
R^2	18.4%	19.8%	10.3%	20.9%	11.2%
F-statistic	3.503**	3.824***	1.785	4.088***	1.947

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

demonstrate that Indonesian managers perceived certain capital budgeting procedures such as long-term capital plan, generation and screening of ideas, and rewards linked to project outcomes to be more important, unlike their Australian counterparts who perceived business case to be of higher importance. These results are consistent with the univariate results which hereby, support H_4.

7. Discussion and Conclusion

The present study had set out to compare the impact of national culture on the use of capital budgeting systems (CBS) by non-financial listed firms in Indonesia and Australia. Based on a sample of 67 useable responses, it is found that national culture and other variables identified by the contingency theory are useful for predicting the importance which such firms place on capital budgeting systems (capital budgeting techniques, risk management techniques, non-financial information and capital budgeting procedures) when making project investment decisions.

Specifically, this study offers evidence to support three of the four hypotheses formulated. It appears that Indonesian managers place more importance on using sophisticated risk management techniques (e.g. real options, simulations) when compared to Australian managers. Indonesian managers also place greater importance on using non-financial information (e.g. customers, synergies) than their Australian counterparts. In addition, Indonesian managers also place significantly more importance on capital budgeting procedures for long-term capital planning, the generation and screening of ideas for investments and the search and screening of project alternatives. Contrary to expectations, Australian managers place more importance on the capital budgeting procedures for preparing a business case. The outcome derived from this study can be attributed to one possibility, which is that the Indonesian managers do not commonly utilise a business case to weigh out the project outcomes.

Opposite to the expectations made, Indonesian firms also place higher importance on sophisticated capital budgeting techniques such as the net present value and the internal rate of return when compared to Australian firms. Nonetheless, both countries used naïve techniques such as payback period and return on investment. This outcome may be attributed to the possibility that Indonesian managers desire to mitigate risk, hence propelling them to emphasise on sophisticated capital

budgeting techniques. This has occurred despite research suggesting that environmental uncertainty forms a barrier in estimating discounted cash flow model parameters (Chen, 2008).

To check the robustness of our results, that is whether cross-cultural differences in capital budgeting systems are really present, the multivariate analysis was conducted. The variable "Indonesia/country" was found to be significant in all the variables except for net present value, environmental information and project alternatives. Accordingly, the national culture factor exerted a significant impact on the firm's capital budgeting systems.

This study contributes to the contingency theory literature. It provides evidence which support the impact contributed by the national culture setting. Differences in the economic development of the two countries, consistent with findings from prior studies (Andor et al., 2015; Hermes et al., 2007), can be used to explain the above results. Moreover, it is argued that the different national cultures of the two countries may have impacted these results. Prior research (Carr et. al., 2010; Heidhues & Patel, 2011) has emphasised on the importance of providing a contextual basis for examining national culture differences. This study is a response to that call. The Indonesian culture continues to emphasise on the avoidance of risk (Lindsay, 2008; Graham & Sathye, 2017). Consequently, more focus was given to using the sophisticated capital budgeting systems. This enabled the Indonesian managers to be more confident about the planned investment yielding benefits. Indonesia's experience in the Asian financial crisis and the global financial crisis appear to have made the Indonesian managers less confident about investing before all aspects of the investment risks are considered through the various capital budgeting systems. Australian managers, in contrast, although affected by the global financial crisis, appeared to be more confident about the stable Australian economy. Consequently, the Australian managers appeared to be risk-takers. This is demonstrated by their use of the naïve capital budgeting systems rather than the more sophisticated approaches (Hofstede, 2001).

The results drawn from this study also contribute to academic literature. It provides evidence which links contingency factors such as perceived environmental uncertainty, firm size and education attainment with the importance placed on capital budgeting systems. Additionally, this study had examined the impact of national culture on four broad categories of capital budgeting systems – a focus that has

largely escaped the attention of researchers. This therefore, expands on the knowledge of CBS.

The current findings have important practical implications for managers operating in Indonesia and Australia. They can utilise these findings to revise the design of their capital budgeting systems. The managers involved need to be guided by the national culture of the respective countries and the importance these countries attach to their sophisticated budgeting systems. In an individualistic culture such as Australia where there is economic certainty, project investments can be made with guidance from naïve practices. In a collectivistic culture such as Indonesia, economic uncertainty would be higher because the implementation of laws and governance systems may not be as one finds them in developed countries. In this regard, reliance on less sophisticated capital budgeting systems would be recommended. The results noted from this study assume an increasing importance when noted from the context of foreign direct investments in Indonesia.

This study has revealed some striking cross-cultural differences which are noted in the practices related to the design and use of capital budgeting systems. However, the understanding of the nature and causes of these differences is just the tip of the iceberg. More research needs to be conducted so as to address the limitations of this study and to extend the research in new directions. Specifically, future research looking into the impact of national culture can focus on how *Sharia* impacts the use of capital budgeting systems and the performance effect of using different approaches. The other limitation of this study can be traced to the nature of survey research which is based on perceptions rather than reality. The approach could have been further fortified through other tasks such as interviews. Further to this are the low response rates incurred and other social desirability biases. Since this study had focused on non-financial listed firms in Indonesia and Australia during the recovery period following the GFC, inferences cannot be made to other time periods or countries.

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