CHAPTER 4:
RESEARCH FRAMEWORK AND
HYPOTHESIS DEVELOPMENT

4.1 RESEARCH FRAMEWORK

As stated in Chapter 1, the primary objective of this study is to explore the level of sophistication in budgeting practices among the public listed companies and its influence on the listed firm’s financial and operational performance. Following on from the primary objective, the second objective of the study is to investigate the relationship between the level of budget sophistication and organizational performance. This study also investigates the importance of budgeting in organizations and motivations for organizational adoption of budgets.

In developing the research framework, this study builds extensively on comprehensive reviews of contingency-based research into control system design that have been conducted in recent years (Chapman, 1997; Chenhall, 2003; Hartmann, 2000; Langfield-Smith, 2006). Contingency research proposes that the appropriateness of different control systems, including budgets, is dependent upon the setting of the business (Otley, 1978; Fisher, 1995). Further, Gorton (1999) found evidence of a positive association between the use of budgets and financial performance, as proxied by growth, in small and medium enterprises. On this basis, it is predicted in this study that public listed companies that use sophisticated budgets experience better performance. The model developed to analyze and empirically test these relationships is depicted in Figure 4.1.
Figure 4.1: Research Framework

Contingency Factors
- Perceived Environmental Uncertainty
- Organizational Size
- Organizational Age
- Organizational Structure
- Organizational Strategy

Budget Sophistication
- Budget Planning Sophistication
  - Complex Techniques
  - Complex Process
  - Budget Formality
  - Time Horizon
  - Budget Information Systems
  - Strategy Congruence
  - Rolling Forecast
  - Interactive Use of Budgets
  - Budget Flexibility
- Budget Control Sophistication
  - Frequency of Variance Monitoring
  - Budget Deviation
  - Budget Emphasis

Organizational Performance
- Revenue
- Profit
- Return on Investment
- Market Share
- Cost Effectiveness
- Quality of Product or Service
- Productivity
4.2 DEFINING BUDGET SOPHISTICATION

In this paper, the term “budget sophistication” serves a central role. Therefore, it is important to establish its definition. It is interesting to note that though the meaning of budgets has been extensively defined and developed over time, its definition in terms of budget sophistication has not been developed as extensive as in studies of capital budgeting. Previous studies on capital budgeting have developed increasingly detailed and more complicated definitions of capital budgeting sophistication. Hence, in this current study, the researcher, based on reviews, readings and understanding on the evolution of budgeting approaches and models presented in Chapter 2 have developed the dimension to define budget sophistication.

Before conceptualizing budget sophistication, an understanding on the definition of sophistication is sought. By analyzing literature on the subject used by various researches, it was revealed that Pike’s (1984) definition of sophistication is frequently used as reference in development of definition of capital budgeting sophistication. In his own terms, sophistication refers to “the use of theoretically complex and superior methods and the operation of systematic procedures” (Pike, 1984). Literature searches from various fields also revealed that instead of limiting Pike’s simple definition of sophistication to the techniques employed, the definition has also been extended to cover the entire process.

In constructing the dimension, this study builds the definition of budget sophistication by combining Pike’s definition of sophistication and the evolving nature of the budgeting process over the years presented extensively in Chapter 3. Within this
stream of literature, budget sophistication is consequently defined along twelve different dimensions as depicted in Figure 4.1.

 Majority of the dimensions stated above are supported by literature as well as opinions from experts and practitioners; it does also reflect the researcher’s opinion of how budget sophistication should be defined. The dimensions are further explained below.

### 4.3 DEFINING BUDGET PLANNING SOPHISTICATION

The main emphasis and goal of the advanced budgeting models is to create rigorous and decisive planning and budgeting processes that are concurrently responsive to business dynamics. Building from the evolving nature of the budgeting process as presented extensively in Chapter 3, budget planning sophistication is defined along nine factors. The researcher believes that each of these factors ought to be able to distinguish sophisticated budgeting practices from unsophisticated ones. The nine characteristics of budget planning sophistication are discussed below.

#### 4.3.1 Complexity of Budget Technique

Budgeting techniques can be classified according to their level of sophistication. There are four commonly used techniques to derive the basis in the preparation of a budget, which are described below:

- *Judgemental budgeting*: Allocation of resources in judgemental budgeting is determined solely on the basis of what is felt to be necessary and affordable for the organization during the budget period. Organizations engaging in this
technique of budgeting do not use any statistical methods or concrete justification in assigning the budget numbers. Judgemental budgeting is highly dependent on the business knowledge and market judgment of managers and the accuracy of the managers’ interpretation of past achievement and histories of the organization and applying the understanding gained to chart the organization’s plan of future events. It will require reliability and rationality assessment on the management experience and judgemental skills of the budgetee. In view of this, it would be difficult to assess the credibility of judgmental budgeting. Thus, it could be deduced that this method rank the lowest in the budgeting technique due to its crude and unsophisticated way in deriving the basis for budget numbers.

- **Incremental budgeting:** This technique entails that a budget is prepared using the previous period’s budget or actual performance as a basis, usually adjusting for inflation or revenue growth by a percentage increase. It is generally accepted practice in budgeting to use incrementalism approach as it is a practicable device for coping with the overwhelmingly complex job of budgeting. However, by using this technique, rationality is again compromised.

It is increasingly clear that businesses in current competitive condition cannot plan and control their way to the future in incremental steps. They must innovate and they must think differently. This means using new and more relevant budget planning practices.
• **Zero-based budgeting (ZBB):** An alternative approach to incremental budgeting is ZBB where the budget starts from a base of zero for each period and each expenditure item must be justified for the new budget period. Budgets for proposed activities are put forward, assessed and prioritized (in relation to the Company’s objectives) and allocated funds in order of priority.

• **Activity-based budgeting (ABB):** ABB formalizes the process of planning and controlling along an organization’s activities to derive a cost-effective budget. Activities that incur costs in every functional area of an organization are recorded and their relationships are defined and analyzed. Activities are then tied to strategic goals, after which the costs of the activities needed are used to create the budget.

Despite the existence of sophisticated techniques, the tendency for organizations to base budgeting decisions on intuition and historical precedence still prevails. Judgemental and incremental budgeting has been associated with the practice of traditional budgeting (refer to discussion on “Weaknesses of Traditional Planning and Budgeting” presented in Chapter 3). The last two methods, ZBB and ABB were also discussed extensively in Chapter 3. It should be noted that this two budget techniques were categorised as an advanced budgeting technique.

Apart from classifying budget sophistication in terms of complexity of techniques, the setting of a budget process has also been considered in determining budget sophistication (Miles, White and Munilla, 1997; Prendergast, Shi and West, 2001).
Thus, in this study, budget sophistication dimension also includes the process of constructing a budget.

4.3.2 **Complexity of Budget Construction Process**

Numerous researchers have associated traditional budgeting with a top-down driven process, thus, the critique that traditional budgeting strengthens vertical command and control. Advanced budgeting techniques are supported by a bottom-up process or a blended process. For example, a top-down, bottom-up approach to budgeting is best suited for ZBB and ABB, which requires the participation of managers at all levels within the organizational hierarchy (Dean and Cowen, 1979; Banovic, 2005).

4.3.3 **Extent of Budget Formality**

Formal planning conveys “that an organization’s planning process involves explicit systematic procedures used to gain the involvement and commitment of those principal stakeholders affected by the plan” (Pearce, Freeman and Robinson, 1987). While the multidimensional nature of the planning construct has been noted in the literature (Ramanujam, Venkatraman, and Camillus, 1986), the formality of the planning system (the extent to which planning documents exist) has been the most widely used dimension of planning in the empirical literature. Bracker and Pearson (1988) proposed that in order to judge planning sophistication of organization, researchers should infer from the studies on formality of the planning system. Accordingly, it has been suggested that sophistication in formality of planning refers to the type of plans developed (for example, formal written versus informal plans) and the time frame under consideration (long-term versus short-term). In this study, the researcher drew upon the Bracker and Pearson (1988) typology to include the measure
of formality of planning in the budget sophistication. The Bracker and Pearson classification is believed to accurately reflect the range of differences in budget planning formality among firms and thus, its sophistication.

4.3.4 Time Horizon

Chenhall and Morris (1986), in defining sophistication of accounting instruments, considers time horizon as one of its measures. Budgets usually relate to specific future periods of time. Traditional budgets typically have an annual time horizon and tend to remain unchanged in that one-year period despite the fact that they are often out of date at the end of the first month of budget implementation. Researchers such as Merchant (1990) have highlighted the side effects of a budget’s time frame. Merchant found evidence to show that short-term orientation encouraged pressure to achieve budget and hence encourage the use of data manipulation. In addition, the rapid changes in the business environment of today makes the rigid approach to budget obsolete.

In reality, budgeting process does not need to be restricted to the time horizon that is consistent with the annual-planning stage; it is possible that organizations formulate plans for a longer period of time. Advocators of advanced budgeting argued that budget period should be flexible enough to allow for adjustments to changes related to business cycle in the external environment.
4.3.5 **Budget Information Systems**

A significant growth in the use of information technology in the budgetary process was observed, especially among the larger, more profitable and more decentralised companies. The benefits of using appropriate technologies start with minimizing mistakes and the capability of a system to provide a broad spectrum of information relevant for planning, controlling and decision-making all in the aim of creating or enhancing value. Adopting appropriate budgeting applications allow managers to look toward the future rather than solely relying on data from the past when making decisions. Further, these systems and applications enable comparisons among a firm’s departments, divisions or projects, enabling internal benchmarking and variance analysis. The adoption of budgeting applications that are integrated with other systems in the organization are regarded as more sophisticated.

4.3.6 **Strategy Congruence**

Strategic planning and budgeting are distinct but intertwined activities. Indeed, there exists an essential link between budgeting and strategic planning. Blumentritt (2006) further emphasized the close connection between budgeting and strategy because an effective budget cannot be prepared unless the firm has made its strategic decisions, but strategy execution is likely to be inefficient and unprofitable without the financial guidance of budgets. Consequently, companies should integrate strategic management and budgeting. Sharing the same view, Auzair and Langfield-Smith (2005) suggest that budgeting should be tailored explicitly to support the strategy of the business in order to lead to superior performance. As a result, budgeting is considered to be a tool to support the strategy formulation and implementation in companies.
Given the important link, it is surprising to find that there exists a gap between strategic planning and budgeting, as advocated by the advanced budgeting proponents. Regardless of the reason behind the disconnection between strategic management and budgeting, the argument is that such budgets hinder implementation of the firm’s strategies, and it is likely impossible for an organization with these problems to attain good performance.

The most sophisticated form of planning, which has been discussed widely in the management literature, is “strategic planning” (Wijewardena, Zoysa, Fonseca and Perera, 2004). Thus, the logic is if a budgeting process is synchronised with strategic planning, the budgets will also assimilate its sophistication. Indeed, Neely et al (2001) contended that in order for budgets to be effective, it must be aligned with the organization’s strategies. Several studies have revealed that organizations have begun to integrate budgeting and strategic planning. For example, McCosh and Walsh (1989) surveyed members of the European Financial Control Research Institute on the methods of budgetary control and short-term financial planning which were in use between 1985 and 1988. They have found that majority of the companies have brought their budgetary control procedures closely into alignment with their strategic planning processes. They have also found that the budgetary control systems of these firms are less rigid and are not subjected to annual process.

Various studies in the literature and research by practitioners have highlighted that beside strategy congruence, modern budgeting practices put more emphasis on importance of budget planning especially on a continuous process, encourage flexibility through frequent budget revisions during the year; incorporate externally
focused and market-driven target, transparent on budget assumption to all stakeholder and highly interactive and intensely engage employees in budget preparation and budget-related communications. Indeed, these suggestions and arguments on how modern budgeting should be were explicitly outlined by Waal (2005) in the twelve principles of beyond budgeting.

4.3.7 Rolling Forecast

In Chapter 3, it was discussed that the rolling budget and forecast is a newer form of budgeting, and recent research have found evidence that its use is increasing in prominence (Haka and Krishnan, 2005; Sivabalan et al, 2005). Sivabalan et al (2005) highlighted that rolling budgets and forecasts were primarily introduced as a planning device in organizations. Similarly, Haka and Krishnan (2005) identified rolling budgets and forecasts to be an instrument of organizational learning, and strongly supportive of the planning function provided by the traditional annual budget. Practitioner publications argue that more frequent budget periods provide a smaller window for error in budgets, and align them closer to actual data, therefore improving budget benefits. Following this argument, these advocates encouraged companies to adopt rolling forecast with typically short time frame updated either quarterly or semi-annually. The use of rolling budget and forecast has been associated with advanced budgeting practices.

4.3.8 Interactive Use of Budgets

Designing a budgeting system which encourages increased interaction between top management and subordinates facilitates increased information flows (Galbraith, 1973). Simons (1991) highlighted that interactive use of budgeting provides a vehicle
for the top management to reveal their values and preferences to organization members. Abernathy and Brownell (1999) warrant that using the budgets in an interactive manner enables the interchange of information between these two parties on matters concerning the opportunities, threats, strengths and weaknesses that exist as the organization reorients itself in the market. Interactive use of budgeting provides a means of debating how to respond to changes in environmental and operating conditions. Budgets can serve as a “catalyst for debate” and thus help participants reach a compromise on expectations (Macintosh, 1994; Abernathy and Brownell; 1999).

4.3.9 Budget Flexibility

In Chapter 3, Neely et al (2001) has pointed out that one of the biggest criticisms of traditional planning and budgeting is lack of responsiveness to changing conditions. Traditional budget is fixed and rigid. Thus, advanced budgeting models highly emphasized a flexible planning and budgeting process which are responsive enough to account for change, yet, solid to provide discipline and direction.

An important feature of budgets that is increasingly being emphasized and applied in modern budgeting is budget transparency, a term used loosely to describe a budget process that is clear, visible, and understandable to anyone who is interested. Transparency includes clearly stating all assumptions used in the assessment, providing the rationale, and documenting the data used to derive the budget numbers. Thus, members of the organization can easily know the key assumptions underlying and able to understand and to evaluate revenue projections. Transparency will
increase ability to construct a more flexible budget as it facilitate in identifying the relationship between trends in expenditures and trends in revenue over time.

In summary, Table 4.1 differentiates the budget planning sophistication characteristics:

**Table 4.1: Characteristics of Sophisticated Planning and Unsophisticated Planning in Budgeting**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Sophisticated</th>
<th>Unsophisticated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complex Technique</strong></td>
<td>Activity-Based Budgeting</td>
<td>Judgemental Budgeting</td>
</tr>
<tr>
<td></td>
<td>Zero-based Budgeting</td>
<td>Incremental Budgeting</td>
</tr>
<tr>
<td><strong>Complex Process</strong></td>
<td>Participative Budgeting</td>
<td>Imposed Budgeting</td>
</tr>
<tr>
<td></td>
<td>Negotiated Budgeting</td>
<td></td>
</tr>
<tr>
<td><strong>Budget Formality</strong></td>
<td>Rules and procedures are highly formalized and the depth of coverage is extensive.</td>
<td>Rules and procedures are not formalized.</td>
</tr>
<tr>
<td><strong>Time Horizon</strong></td>
<td>Not limited to annual time horizon.</td>
<td>Limited to annual time frame.</td>
</tr>
<tr>
<td><strong>Budget Information System</strong></td>
<td>High importance placed on the use of budgeting application.</td>
<td>Low importance placed on the use of budgeting application.</td>
</tr>
<tr>
<td><strong>Strategic Congruence</strong></td>
<td>Highly aligned</td>
<td>Not aligned</td>
</tr>
<tr>
<td><strong>Rolling Forecast</strong></td>
<td>Utilise extensive</td>
<td>Limited to no utilisation</td>
</tr>
<tr>
<td><strong>Budget Flexibility</strong></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Budget Interactive</strong></td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>
4.4 DEFINING BUDGET CONTROL SOPHISTICATION

Control is defined as a “process of measuring progress toward planned performance and applying corrective measures to ensure that performance is in line with managers’ objectives” (Bateman and Snell, 2001). It is common knowledge that effective control is necessary for achieving maximum results of a pre-determined plan of actions in organizations.

The budget, by itself, is a blueprint for action for an organization. To ensure that the plans are implemented accordingly, a control function is incorporated into the system. The main objective of control is to ensure that plans are carried out with a minimal divergence between budgeted and actual activities. The control process starts after the budget has been adopted. Hanson (1966) highlighted that the control function in the budgeting process is a type of “yardstick” against which performance is measured. Without management's implementing the yardstick qualities of the budget through measurement, the budget is not considered to be useful. Budgetary control allows management by exception. This control by exception allows the management to intervene to bring about congruity between the planned and actual performance in the activity of the operational only if there exist a significant gap.

Based on literature reviews, the researcher noted that there seems to be implicit assumptions that traditional budgeting is more tight and diagnostic in nature. It has been argued that traditional budgeting practice tight control to ensure that budget targets are met. Indeed, budgets can contribute considerably to the tightness of formal controls (Simons, 1995; Merchant, 1998; Anthony and Govindarajan, 2003). According to Van der Stede (2001) tight budgetary control is held to exist if top
management puts much emphasis on meeting the budget, has a detailed interest in specific budget line-items and does not lightly tolerate deviations from interim budget targets. In this connection, the researcher defines budget control sophistication along three dimensions as presented below.

4.4.1 Frequency of Budget Monitoring

Budgetary control attempts to deal with uncertainties by reacting when the unexpected becomes evident through variances of results. Frequent monitoring and controls allow for a timely and thus cost-efficient adaptation of plans and strategies in case of a deviation between current and anticipated results. Ezzamel (1990) shows that in environmental uncertainty situation, the variance analysis is more important because the risks are higher. Variance analysis deals with the analysis of the difference between what was planned and the actual results. From the output of variance analysis, management must decide which variances require investigation and corrective action. Alternatively, management will tries to get back to the original desired outcome.

Organizations practice different degrees of variance analysis and investigation techniques, from basic variance analysis to more detail and complex analysis, to monitor achievement of results. The implementation of sophisticated variance analysis investigation is likely to be undertaken by organizations that attach great importance in achieving positive results. A study by Joye and Blayney (1990) found that budget variances were used by 93 percent of respondents for setting goals and evaluating performance by Australian firms. In a more recent study, Guilding et al (2000) found that accountants in New Zealand (NZ) and U.K. tend to see variances
from budget as being important, and performance appraisal was based mainly on budget achievement.

### 4.4.2 Budget Emphasis

Throughout several editions of his management control textbook, Anthony describes a tight control system as ‘one in which a manager’s performance is evaluated primarily on his ability to attain budgetary objectives during each reporting period’ (Anthony and Govindarajan, 1998). In a tight control philosophy, the budget target is considered to be a firm commitment against which the subordinate manager is evaluated. Each period, performance to date is compared to the budget; detailed variances identified and discussed; and corrective actions taken if it appears that the budget targets are not being met. Tight control philosophy is inline with traditional concept of budgeting.

### 4.4.3 Budget Deviation

Van der Stede (2001) highlighted that top managers are intolerant for interim budget deviations if they require that business managers keep actual performance constantly in line with the budget and if top management require detailed information for budget reviews. Each month, performance-to-date is compared with the expected performance and corrective actions are taken if it appears that the budget is not being met. On the other hand, top managers are tolerant when they do not systematically scrutinize interim deviations unless something is clearly amiss and is only interested in the bottom-line of the budget and business unit managers have more discretion because they are allowed to shift funds between line-items as long as they achieve their overall budget (Merchant and Manzoni, 1989; Van der Stede, 2001). In other words, business managers have more discretion to decide about the course of
corrective actions considered (Anthony and Govindarajan, 1998). In sum, top management’s tolerance for interim budget deviations relates to the extent to which monthly variances from the budget immediately trigger corporate reviews and interventions.

In the conventional concept of the budgeting control system, management's attention is directed mainly to deviation between actual results and budgeted results and thus, management does not lightly tolerate deviations from interim budget targets. Constantly measuring of the progress the managers have made to achieve their budget targets, and the adoption of actions to correct or prevent any deviations of actual performance from the budgets, indicate to the managers that deviations of their actual performance from budgeted performance are important to their organizations.
4.5 CONTINGENCY FACTORS INFLUENCING ORGANIZATIONAL ADOPTION OF SOPHISTICATED BUDGET PLANNING AND CONTROLS

Broadly speaking, contingency theory is premised on the argument that a control system needs to be matched to the circumstances in which it is required to be operated i.e. situations influence what the appropriate mode of control should be (Otley, 1978; Fisher, 1995). Researchers have attempted to explain the effectiveness of budgetary controls by examining designs that best suit the nature of the environment, size, structure, strategy and age.

4.5.1 Perceived Environmental Uncertainty

The external environment is a powerful contextual variable that is at the foundation of contingency-based research. Most firms operate in business environments characterized by strong competition, global pressures, and demanding customers. Uncertainty as a variable grew in importance as a result of early contingency theorists (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Thompson, 1967; Hage and Aiken, 1969; Pugh, et al, 1969) who presented evidence that organizations are influenced by environments. This laid the foundation to prior research relating environmental uncertainty to formal management control systems such as budgets. Table 4.2 below summarized the conclusions that have emerged from research on the effects of external environment on budgetary planning and control.
### Table 4.2: Summary of relevant studies – Contingency theory: External Environment

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otley, 1978</td>
<td>41 unit managers in a single large organization</td>
<td>• Rigid style of performance evaluation is effective in a liberal environment, while more flexible style is requires in a tough environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• In a liberal environment, the most accurate budget estimate occurs under a flexible style of budget use, but in a tough environment, it occurs under a rigid style of use.</td>
</tr>
<tr>
<td>Waterhouse and Tiessen,</td>
<td>Not available</td>
<td>• Organizational sub-units that face a certain environment or have routine technology use a more formal control, centralized control system, than those operating in unpredictable and technologically non-routine environment.</td>
</tr>
<tr>
<td>1978</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchant, 1985</td>
<td>170 managers in electronics industry</td>
<td>• Market factors such as strength or market position and stages in product life cycles have little or no effect on budgeting.</td>
</tr>
<tr>
<td>Brownell, 1985</td>
<td>61 managers from R&amp;D and marketing departments of one large multinational electronics business</td>
<td>• Constraints from suppliers and impacts of government regulation are two environmental elements which contribute the most to the overall difference in complexity between R&amp;D and marketing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Budget participation has greater positive effects on managerial performance in R&amp;D than in marketing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• There is no significant interaction between reliance on accounting information and functional areas affecting performance.</td>
</tr>
<tr>
<td>Chenhall and Morris, 1986</td>
<td>Not available</td>
<td>• High environmental uncertainty is linked with high need of timely information.</td>
</tr>
<tr>
<td>Ezzamel, 1990</td>
<td>81 financial directors from Times 1,000 list of UK companies</td>
<td>• Perceived environmental uncertainty is positively associated with budget participation, budgetary evaluation, required explanation on variances, and interactions with superiors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• This correlation is stronger in the case of larger size companies that with the smaller size companies.</td>
</tr>
<tr>
<td>Chapman, 1998</td>
<td>4 companies from UK clothing and textiles industry</td>
<td>• Formal planning and control can have a beneficial role in highly uncertain environmental conditions, where interaction patterns between accountant and managers are a crucial moderating factor of this relationship.</td>
</tr>
<tr>
<td>Sharma, 2002</td>
<td>106 hotels in Queensland, Australia</td>
<td>• When the environment was perceived as more turbulent but less unpredictable, the budget was used more extensively to forecast the future and communicate the results to appropriate organizational levels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• When the environment was perceived unpredictable and highly competitive, the budget was used less extensively for communication, performance evaluation, and control.</td>
</tr>
</tbody>
</table>

From these illustrations, it can be seen that a consistent stream of research has confirmed that environmental uncertainty has been associated with a need for more open, externally focused control system (Chenhall and Morris, 1995; Chong and Chong, 1997; Gordon and Narayan, 1984; Gul and Chia, 1994). Competitive complexity and intensity suggest greater emphasis on the budget processes; primarily for understanding the competition and achieving greater coordination. Interestingly, there are studies which revealed a different perspective; a negative relationship between the level of uncertainty in an organization’s environment, and the importance and use of formal financial reporting control systems (Tymond, Stout and Shaw, 1998). Uncertainty is a change of the conditions of the environment which affects the controlled process. These studies seems to suggest that under a more uncertain circumstances the validity and importance of strict budgetary controls is assumed to diminish; and budgetary control seems to be the most valid approach under relatively certain environmental circumstances. In fact, Otley (2001) noted that although budgetary control is part of a complex organization reality, it appears to “work reasonably satisfactorily in a relatively stable environment”.

The organizational design literature proposed that organizations facing extreme pressure, as in environment perceived as hostile and turbulent conditions, will initially rely on tight control and emphasis on budgets when there is high pressure which is likely to threaten short-term survival and then adopt more organic controls. Some theorist also suggests the benefits of combinations of traditional budgetary controls and more interpersonal and flexible controls in conditions of environmental uncertainty. Certainly, there is evidence that effective organizations that face unpredictable environments combine tight controls with more open, informal and

It is apparent that literatures reviewed above, has generated an extensive, but arguably inconclusive, body of evidence on the effect of environmental uncertainty on organization’s choice of budgeting practices. Considering this, it is relevant to question whether the dynamic nature of the current business environment also influences the organization’s choice in using more sophisticated budgeting practices. Since advanced budgeting models is a combinations of traditional budgetary controls and more interpersonal and flexible controls, it is proposed that higher perceived environmental uncertainty will increase the need of sophisticated budget planning and controls. This proposition is premised on the notion that the extent to which uncertainty exists in an organization influences how controls are selected and enforced. The plausible argument that as “organization faced high pressure which is likely to threaten short-term survival, they are likely to initially rely on tight control and move progressively towards organic controls as conditions stabilised” could be proved valid in this study. Therefore, it is hypothesized that:

**H1: Perception of environmental uncertainty is associated with sophisticated budget planning and controls.**
4.5.2 Organizational Structure

Research on structure may be dated as far back as Leavitt (1951), and associated to very early contingency studies (Donaldson, 2001). Structure refers to internal patterns of organization relationships (Thompson, 1967; Bruns & Waterhouse, 1975), and includes the configuration of business units, formal lines of authority and accountability, patterns of communication and information flows, and systems of corporate governance.

The choice of structure in organizational contingency research has focused on the appropriate structure to fit the levels of uncertainty in the environment (Burns & Stalker, 1961; Drazin & Van de Ven, 1985; Galbraith, 1973; Lawrence & Lorsch, 1967), strategy (Chandler, 1962) and size. Table 4.3 below summarized the conclusions that have emerged from budget-related research on organizational structure.

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruns &amp; Waterhouse, 1975</td>
<td>284 managers involved in budgeting process from 26 companies</td>
<td>• Decentralized and structured organization operating in a stable organizational environment is well suited to the use of budgetary control.</td>
</tr>
</tbody>
</table>
| Merchant, 1981               | 170 manufacturing managers in electronics industry                    | • Large, more diverse, decentralized firms tend to use budgeting in an administrative manner with greater importance placed on achieving budget plans, greater middle-management participation in budget related activities, more formal patterns of communication, and use of more sophisticated budgeting supports.  
• Small, centralized firms tend to rely more on direct supervision, frequent personal interaction and formal budget communication. |
### Table 4.3: Summary of relevant studies – Contingency theory: Organizational Structure (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchant, 1984</td>
<td>170 manufacturing managers in electronics industry</td>
<td>• Functional differentiation is positively related to the formality of budget use.</td>
</tr>
</tbody>
</table>
| Macintosh & Daft, 1987     | 90 departmental managers from 20 different organizations               | • Under condition of pooled interdependence, organizations rely more on standard operating procedures and less on budgets and statistical reports.  
                               |                                                                        | • In sequentially interdependent departments, managers use budgets and statistical reports more than standard operating procedures.            
                               |                                                                        | • Under condition of reciprocal interdependence, standard operating procedures and budgets are used less than when interdependence was low, while statistical reports play expanded role in planning and coordination. |
| Gul, Tsui, Fong and Kwok, 1995 | 37 managers from 26 different manufacturing companies                  | • At high levels of decentralization, there is a positive relationship between budgetary participation and managerial performance, but at low levels of decentralization, this relationship is negative. |
| O’Regan and Ghobadian, 2002 | 194 small and medium size manufacturing UK firms                       | • Emphasis on the characteristics of strategic planning by formal planning firms is higher compared with non-formal planning firms.     |


Lawrence & Lorsch (1967) identified a need for higher levels of differentiation characterize by decentralization of authority to cope with diverse and uncertain environments. The argument posits that as organizations perceive greater environmental uncertainty, they will tend to design decentralized structures so that organizations can more effectively respond to the perceived uncertainty. In this sense, organization structure is conceptualized on a mechanistic-organic continuum where decentralization is represented by an organic structure.

Following this, various researches have measured structure in terms of decentralization of authority (Abernethy et al., 2004; Bruns & Waterhouse, 1975; Chenhall & Morris, 1986; Chia, 1995; Gul et al., 1995; Libby & Waterhouse, 1996;
Merchant, 1981). These researches suggest that large firms were decentralised and have been associated with more emphasis on administrative controls. The literature define administrative controls as strong emphasis on formal controls (rules, documentation, specialization of roles and functions), importance placed on budgets, formal patterns of communications and participation in budgets (Bruns & Waterhouse, 1975; Merchant, 1981). Similarly, Duncan (1972) found that greater perceived environmental competition was positively associated with decentralization. Whereas, Khandwalla (1972) found that large decentralized companies also utilized high levels of participation and human relations approaches to coordinate activities. Certainly, participation in budgeting has been linked to decentralized organizations. Gul et al. (1995) found an association between decentralization and participative budgeting. In contrast, smaller organizations were able to effectively control their activities through centralized informal processes such as direct supervision and oral communication. This lead to the following hypothesis that:

**H2: Decentralized organizational structure is associated with sophisticated budget planning and controls.**

### 4.5.3 Organizational Size

Organizational size has been identified as a key contextual variable by various researchers (Lawrence and Lorsch, 1967; Pugh et al, 1969; Child & Mansfield, 1972; Khandwalla, 1972; Bruns and Waterhouse, 1975; Merchant, 1981, 1984). These researchers argued that as organizational size increases, it becomes increasingly difficult to control the exponentially increasing array of activities through informal mechanisms. Consequently, larger and more diverse organizations will tend to institute administratively-oriented control (Child & Mansfield, 1972; Bruns and
Waterhouse, 1975; Merchant, 1981). Khandwalla (1972, 1977) reported that large diversified firms employing mass production with divisional structures made greater use of sophisticated controls and environmental information gathering such as forecasting and market research. In contrast to the practice of large organizations, Bruns and Waterhouse (1975) found that smaller firms tend to use budget in an interpersonal control approach where the control, coordination, and communication mechanisms are more informal and personal. The table below summarized the conclusions that have emerged from budget-related research on organization’s size.

Table 4.4: Summary of relevant studies – Contingency theory: Organizational Size

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruns &amp; Waterhouse, 1975</td>
<td>284 managers involved in budgeting process from 26 companies</td>
<td>• Size is a strong predictor of organization’s structure: bigger companies use decentralized structure while smaller companies use centralized structure.</td>
</tr>
<tr>
<td>Otley, 1978</td>
<td>41 unit managers in a single large organization</td>
<td>• Stronger stress on meeting the budget together with budget-oriented style is associated with larger operating units.</td>
</tr>
<tr>
<td>Merchant, 1981</td>
<td>170 manufacturing managers in electronics industry</td>
<td>• Performance is highest in the larger firms when an administrative approach to budgeting is used, in contrast to smaller firms where the best performance is associated with more interpersonal approach.</td>
</tr>
<tr>
<td>Merchant, 1984</td>
<td>170 manufacturing managers in electronics industry</td>
<td>• Size, functional differentiation and the degree of automation in the budgeting process lead to greater formality in the budgeting process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• In departments where the expected context-budgeting relationships existed, the self-ratings in performance tended to be higher than in departments where they did not.</td>
</tr>
<tr>
<td>Powell, 1994</td>
<td>113 CEOs from US companies in furniture and apparel industry</td>
<td>• Relationship between strategic planning and profitability is positive and significant, but spurious when firm size is held constant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Link between strategic planning and sales growth is large and significant with or without firm size effect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Correlation between planning and financial performance is greater among large firms than among small firms.</td>
</tr>
</tbody>
</table>
Table 4.4: Summary of relevant studies – Contingency theory: Organizational Size (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
</table>
| Davila and Foster, 2005 | 95 managers from technology-oriented firms in California’s Silicon Valley | • In the early stages of the growth of an organization, size is a key driver of the emergence of formal control systems.  
• Size is relevant explanatory variable of management control systems. |


The early literature repeatedly concluded that large businesses make greater use of more sophisticated controls than do medium businesses (Khandwalla, 1972, 1977; Merchant, 1981; Bruns and Waterhouse, 1975). Chenhall and Langfield-Smith (1998) confirmed a positive relationship between the adoption of advanced management accounting practices and the size of the business in the large business sector. More recently, Hoque and James (2000) confirmed in their study that large companies have more sophisticated systems than smaller companies. King, Wallace and Clarkson (2007) suggest that it becomes necessary for large businesses to innovate and develop new management accounting practices to cope with their increased complexity and that this innovation is made possible because of their greater access to resources. This study will accordingly try to establish whether, large organizations are associated with an emphasis on sophisticated budget planning and controls. Accordingly, it is hypothesized that:

H3: Large organization is associated with sophisticated budget planning and controls.
4.5.4 Organizational Strategy

The literature provides a number of definitions of the term “strategy”. A strategy is a master plan on how an organization intends to compete in its environment and what sort of structure, including coordination and control devices, is required to implement the plan (Macintosh, 1994). Wilson (1991) defined strategy as “an integrated set of actions aimed at securing a sustainable competitive advantage”. According to this definition, a given strategy in an organization should support the achievement of goals and objectives relative to its competitors. Based on the various definitions, a strategy is expected to provide support in the accomplishment of organizational goals in harmony with the organizational environment, both internal and external. In the contingency literature, strategy is considered a key variable, which differs from other contingency variables, since by choosing specific strategic priorities, management is able to position the firm in specific environments.

Table 4.5 below summarized the conclusions that have emerged from budget-related research on organizational strategy.

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simons, 1987</td>
<td>76 managers from 12 different companies</td>
<td>Prospectors attach a great deal of importance to forecast data in control systems, set tight budget goals, monitor outputs carefully, emphasize frequent reporting, and use uniform control systems. Defenders use control systems less intensively, have a negative relationship between performance and tight budget goals, and emphasize bonus remuneration based on the achievement of budget targets.</td>
</tr>
<tr>
<td>Govindarajan, 1988</td>
<td>121 strategic business unit (SBU) managers from 24 firms</td>
<td>Deemphasizing budgetary goals during performance evaluation is associated with high performance in SBUs employing strategy in differentiation. SBUs employing low cost strategy are more effective when they use a high budget-based evaluative style. When budget evaluative style, decentralization and locus of control are aligned appropriately to meet the requirements of SBU strategy, superior performance occurs.</td>
</tr>
</tbody>
</table>
Table 4.5: Summary of relevant studies – Contingency theory: Organization’s Strategy (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chenhall and Morris, 1995</td>
<td>154 general managers of SBUs from different large companies</td>
<td>The association between enhanced performance and the interaction of organic processes with use of management accounting systems is stronger in entrepreneurial than in conservative entities.</td>
</tr>
<tr>
<td>Van der Stede, 2000</td>
<td>153 business unit general managers</td>
<td>Business units that either pursue a differentiation strategy or have been more profitable are subject to less rigid budgetary controls and have therefore more leeway to build slack, and are more concerned about long-term results.</td>
</tr>
</tbody>
</table>


The alignment argument in the contingency literature posits that different strategic choices are supported by different forms of control systems that support effective strategy implementation (Ittner et al, 2003). Researchers have sought to show what types of control system best suit Porter’s (1980, 1895) two generic strategies of ‘product differentiation’ or ‘cost leadership’. A cost leadership strategy are more concerned on maintaining lower prices; in this setting, management require more cost controls in place in order to maintain overall profitability as compared to a business with a product differentiator strategy operating under the same constraints. Govindarajan (1988) showed that product differentiation (cost leadership) was associated with a de-emphasis (emphasis) on budgetary goals for performance evaluation. Van der Stede (2000) identified that product differentiation was associated with less rigid controls.

From these prior studies, it was evident that the design of a budgetary control is associated with the type of strategies adopted by an organization. For instance, conservative strategies, such as low-cost, are usually associated with centralized control, specific operating goals and formalized work instructions. Entrepreneurial
strategies, such as differentiation strategy are often associated with decentralized structures, results-oriented evaluation and interactive relations within the firm (Chenhall, 2003). Therefore, it is hypothesized that:

**H4: Differentiation strategy is associated with sophisticated budget planning and controls.**

4.5.5 **Organizational Age**

Based on reviews of contingencies that did receive attention in the management accounting (see, for example, Emmanuel et al, 1990; Drury, 2000), it can be concluded that the influence of the contingency of company age has not received substantial attention in the management accounting literature. This is rather surprising because the effects of company age have received attention in the organization theory literature, which was one of the driving factors behind the development of the contingency theory of management accounting (Otley, 1980). The researcher believe that organizations can and should start using increasingly sophisticated accounting instruments when they get larger and grow older. This lead to the following hypothesis that:

**H5: Organizational age is associated with sophisticated budget planning and controls.**

The effects of contextual factor are issues worthy of consideration in any research, especially on the extent to which budgeting practices are influenced by variations in the organization’s size, manager’s perceptions of the external environment, and the organization’s internal structure. This leads to the researcher’s interest in examining
and understanding the effect of contextual factors on adoption of sophisticated budgeting practices by organizations.

### 4.6 EFFECTS OF SOPHISTICATED BUDGET PLANNING AND CONTROLS ON ORGANIZATIONAL PERFORMANCE

Performance is a contextual concept associated with the phenomenon being studied (Hofer, 1983). In the context of organizational financial performance, performance is a measure of the change of the financial state of an organization, or the financial outcomes that result from management decisions and the execution of those decisions by members of the organization (Carton and Hofer, 2006).

There is some evidence of a positive association between the use of budgets and financial performance, as proxied by growth, in small and medium enterprises (Gorton, 1999). There are also several studies that revealed no association between use of budgets and financial performance. Even without empirical evidence, planning and the use of appropriate budgets are promoted by academics, educators and accounting practitioners as a means of enhancing financial performance (Hansen et.al. 2003; Gorton, 1999; Perren and Grant, 2000). It is generally considered that higher levels of performance are expected when the budgeting practices match to contingency theory and are consistent with its internal needs. On the basis of the existing theory and the views promoted by academics, educators and accounting practitioners, it is predicted in this study that organizations that use sophisticated budgeting practices experience better performance. However, Chenhall (2003) had cautioned potential researcher that evidence on linkage of budget use and financial
performance has been inconsistent, though a positive association is theoretically appealing.

The last research question asked, “Does organizations adopting sophisticated budget significantly outperform its non-sophisticated counterparts?” This research question is based on the assumption that if organization’s budgeting practices are based on different theories (traditional versus modern), then significant differences in their performance ought to emerge. It should follow that organizations that adopt sophisticated budgeting practices that most suit their characteristics will in turn have improved performance. Thus, the hypothesis to be tested in this study is as follows:

**H6: Sophistication of budget planning and control is associated with better organizational performance.**