

Review

A review of literature on contingency theory in managerial accounting

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This paper reviewed the literature on the contingency theory in management accounting research in a chronological order. Based on this literature review, contingency theory was summarized as an approach to the study of organizational behavior in which explanations are given as to how contingent factors influence the design and function of organizations. Commonly, contingency theory studies postulate that organizational outcomes are the consequences of a fit or match between two or more contingent factors. This paper makes a contribution towards reviewing the contingent literature in relation to management accounting and management accounting systems. It found that the main problem in contingency based modeling in management accounting is the operation of fit. This study suggested that researchers should discuss explicitly how and whether the particular form of fit can be relevant to studies that have adopted other forms.

Key words: contingency theory, management accounting systems, information adequacy.

INTRODUCTION TO CONTINGENCY THEORY

Contingency theory is an approach to the study of organizational behavior in which explanations are given as to how contingent factors such as technology, culture and the external environment influence the design and function of organizations. The assumption underlying contingency theory is that no single type of organizational structure is equally applicable to all organizations. Rather, organizational effectiveness is dependent on a fit or match between the type of technology, environmental volatility, the size of the organization, the features of the organizational structure and its information system. Contingency theories were developed from the sociological functionalist theories of organization structure such as the structural approaches to organizational studies by Reid and Smith (2000), Chenhall, (2003) and Woods (2009). These studies postulated that organizational structure was contingent on contextual factors such as technology, dimensions of task environment and organizational size. In some other literature, contingency

theory was still regarded as a dominant paradigm in management accounting research (Fisher, 1995; Cadez and Guilding, 2008). This paper reviewed the contingent literature in relation to management accounting and management accounting systems following a chronological order. The purpose of this study is to make some suggestions for future studies based on the literature review.

Alternative approaches in contingency theory

As indicated previously, contingency theory studies postulate that organizational outcomes are the consequences of a fit or match between two or more factors. The concept of fit has been defined by Van de Ven and Drazin (1985) in three approaches -selection, interaction and systems approaches. First, in the selection approach, the interpretation of fit was that, if an organization wants to survive or be effective, it must adapt to the characterizations of its organizational context. In this view, organizational design is caused by organizational context. Most of the early contingency research studies adopted this approach to examine links

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between organizational context and design but did not analyze organizational performance. Using this approach, both task and technology were defined in two dimensions (Dewar and Hage, 1978). Other researchers such as Freeman (1973) investigated technology as a contingent factor. These researchers found that there was a strong relationship between various characteristics of technology and structure in the organization (Marsh and Manari, 1981). However, these studies did not provide evidence on whether different types of structures in different tasks or technological conditions were effective.

Second, fit is interpreted as an interaction effect of organizational structure and context on performance (Khandwalla, 1977; Van de Ven and Ferry, 1980). Khandwalla (1977), for example, found that for effective firms the correlations between technology, structural dimensions of vertical integration, delegation, authority and sophistication of control systems were more significant than for ineffective firms. However, in these studies, the differences in the correlation between context and design in the high and low performing organizations were not significant. Furthermore these studies did not show if the interactions between context and design were effective.

Third, another approach in the contingency theory literature with regard to fit is the systems approach. According to the systems approach, one can understand organizational design only by simultaneously investigating the contingencies, structural alternatives and performance criteria existing in an organization. There is also another view of fit in the systems approach. It is called equifinality (Van de Ven and Drazin, 1985) which advocates that there is not a best way in the selection, interaction and pattern approaches to fit. Multiple and equally effective alternatives may exist. Van de Ven and Drazin (1985) suggested that contingency studies should be designed. Hence, the comparative evaluation of various forms of fit is possible and the design of organizational sub-divisions should be taken into consideration.

MANAGEMENT ACCOUNTING RESEARCH USING CONTINGENCY THEORY

One of the earlier works in management accounting research adopting a contingency perspective was Hofstede's (1967) classic field work. Hofstede (1967) found that, economic, technological and sociological considerations had a significant impact on the functioning of budgeting systems. In addition, cultural effects on management control systems have been studied (Hofstede, 1983; Brownell, 1982; Brownell and Hirst, 1986). This has become an important area of research (Harrison, 1992, 1993; O'Connor, 1995; Taylor, 1996; Chenhall, 2006).

Contingency theory has also been applied to the sub-unit level of organizational behavior. Hayes (1977)

examined the appropriateness of management accounting in order to measure the effectiveness of different departments in large organizations and found that contingency factors or contingencies were the major predictors of effectiveness for production departments. Hayes (1977) also advocated the use of contingency theory in studies of organizational assessment and sub-unit evaluation. Hayes' study hypothesized three major contingencies affecting sub-unit performance: internal factors, interdependency factors and environmental factors. The results of the study suggest that the underlying causal variables should be studied rather than just narrowly examining surrogates. The results also implied that a contingency approach should be taken to managerial accounting and the relevant assessment methods should be determined by sub-unit type, sub-unit inter-relationships and the extent of environmental influence on the performance of sub-units.

Flamholtz et al. (1985) reviewed the contingency literature concerned with the issue of control. In this aspect of the contingency literature, the issue of control is studied along three main traditions: the sociological, the administrative and the psychological perspectives. The sociological perspective focuses on the entire organization and the larger groups within it. In this view, structural mechanisms of rules, policies, hierarchy of authority or coordinative units obtain control (Flamholtz et al., 1985). The administrative perspective focuses on the individuals or departments within an organization. The control mechanisms employed by the administrative theorists are plans, measurement, supervision, evaluation and feedback. The psychological perspective emphasizes goal and standard setting, extrinsic and intrinsic rewards, feedback or interpersonal influence (Flamholtz, 1979).

Shank (1989) applied contingency principles in investigating the use of managerial accounting systems and information in a strategic way. Banker, Datar and Kemerer (1991) looked at the impact of structural factors and found that firms which implemented just-in-time (JIT) or other team-work programs were more likely to provide information regarding performance to shop-floor workers.

Research studies such as Govindarajan and Gupta (1985) have investigated the relationship between firms' strategies and the design of their control systems. Merchant (1985) uncovered contingent relationships between corporate contextual factors, such as size of the firm, product diversity, extent of decentralization and the use of budgetary information. Additionally, some studies have investigated the influence of external factors such as impact of environmental uncertainty. Environmental uncertainty was found to be a major explanatory variable as to whether accounting data was appropriate in evaluating the performance of business units (Fisher, 1995; Hartmann, 2000; Chenhall, 2003).

From review of management accounting research using contingency theory, the usage of contingency

theory is summarized. Contingency theory has been applied in management accounting research in order to address three types of questions. These questions are about: first, the fit between organizational control and structure; second, the impact of such fits on performance; third, investigation of multiple contingencies and their impact on organizational design.

CONTINGENT LITERATURE ON MANAGEMENT ACCOUNTING SYSTEMS

An interesting area of research in management accounting is the study of management accounting systems (MAS) information adequacy gap. There are studies in the contingent literature which deal with this concept and its impact on MAS. MAS have been traditionally defined as systems that produce "routine information for product and service costing, budgeting and performance measurement" (Langfield-Smith et al., 1995: 4). According to Langfield-Smith et al. (1995), MAS also provides ad hoc information which meets the short-term and long-term decision-making needs of management.

Research on contextual variables

In order to enable managers to make more effective decisions in their job setting, one segment of management accounting research focused on the contextual variables which influence MAS design (Gordon and Narayanan, 1984; Subramaniam, 1993; Gul and Chia, 1994; Chapman, 1997).

Gordon and Miller (1976) provided a comprehensive framework for the design of accounting information systems. They also intended to identify the variables which were critical to organizational performance. Environment, organizational characteristics and decision-making style were suggested to be the main classes of contingent variables. Through discussions and literature review, the researchers indicated the theoretical links between the variables. They advocated a contingency approach which took environment, organizational attributes and managerial decision-making styles into account in the design of an accounting information system.

Gordon and Narayanan (1984) investigated the relationship between an organization's structure and information systems. Their study found that the characteristics of information perceived to be important by decision-makers were related to perceived environmental uncertainty (PEU). The results of the study suggested that organizational structure and characteristics of information sought by decision-makers were complementary strategies in response to the perception of their environment.

Research studies in management accounting such as Chenhall and Morris (1986) investigated managers' needs for their organizations' MAS information. They identified four dimensions of information -scope, timeliness, aggregation and integration. Using these four dimensions, Chenhall and Morris (1986) developed and tested an instrument to measure perceived usefulness of MAS information. They argued that managers would prefer strategically useful information which includes broad-scope, timely, aggregated and integrated information. The study found that the type of information perceived to be useful by managers was broad in scope and timeliness. This study made an important contribution to management accounting research by arguing that the broad characteristics of MAS would influence the design of MAS. It concluded that such conceptualization can provide a common basis for comparing MAS in different organizations and industries.

Chenhall and Morris (1986) did not investigate the issue of MAS information adequacy gap. This was done by Subramaniam (1993) who investigated the gap between the perceived usefulness of MAS information by managers and the extent of availability of information. The results of Subramaniam's (1993) study showed that there was a significant MAS adequacy gap in the manufacturing industry.

Gul (1991) and Gul and Chia (1994) further tested the instrument which measures perceived usefulness of MAS information. Gul (1991) studied the interacting effects of MAS and perceived environmental uncertainty on small business managers' perceptions of their performance. The results of the study showed that the effects of MAS on performance were dependent on environmental uncertainty. MAS had a positive impact on performance under high levels of uncertainty, whereas there was a negative impact under low levels of uncertainty.

Fisher's (1996) study revealed individual preferences for particular types of information as the level of uncertainty increases. Fisher (1996) hypothesized that as PEU increases, internals on the locus of control (LOC) scale will perceive information that has wider scope and is more useful than do externals on the LOC scale. Results of the study indicated an effect but the direction of the effect is opposite to that expected. Externals, instead of internals, found information more useful when faced with higher uncertainty. The study pointed out that it is necessary to consider personality variables together with environmental variables.

Research on broad-scope and aggregated information

According to our knowledge, research on broad-scope and aggregated information is quite extensive (Abernethy and Guthrie, 1994; Mia and Chenhall, 1994; Gul and Chia, 1994; Chong, 1996; Gerdin and Greve, 2004;

Tillema, 2005; Naranjo-Gil and Hartmann, 2007; Cadez and Guilding, 2008; Aver and Cadez, 2009). However, research investigating other characteristics of MAS information is scarce.

Abernathy and Guthrie (1994) reported the findings of a study which examined differences in the design parameters of management information systems in firms which adopted different strategic priorities. The study found that the effectiveness of business units depended on a match or fit between the design of the information system and the firm's strategic posture. The results of the study showed that firms, which employed a strategy of continuous product development and innovation, had more effective broad-scope information systems than firms which were defending a comparatively narrow and stable product-market. These results were important for management accountants involved in the design and implementation of MAS.

Mia and Chenhall (1994) investigated the impact of broad-scope information made available by MAS in increasing the performance of managers. In this study, data were collected from managers on the extent of their use of broad-scope information. The managers also provided data on their perceptions of the level of uncertainty involved in their tasks. The study investigated the impact of only one moderating variable and the researchers recognized that it was possible that other factors were implicated in the association between the extent of managers using broad-scope MAS information and their performance.

Gul and Chia (1994) studied the interaction effects of PEU, decentralization and MAS design on managerial performance. This study found that decentralization and the availability of MAS broad-scope and aggregated information was associated with higher managerial performance under high PEU. When there was low PEU, decentralization and the availability of MAS broad-scope and aggregated information was associated with lower managerial performance.

Gul and Chia's (1994) study acknowledged that the variables included in the study represented only a small subset of the variables which could be significant in measuring an organization's and its members' performance. Moreover, the research study limited its investigations to only two aspects of MAS information characteristics (broad-scope and aggregated information) and did not investigate the timeliness and integrated aspects of MAS information.

Taylor (1996) investigated the MAS adequacy gap for the MAS information characteristics of broad-scope and aggregated information. Influence of location (central office versus branches) and gender were also investigated. It was found that interactions of MAS information adequacy with the job characteristics of skill variety, task identity and task significance had a significant impact on certain aspects of managerial effectiveness.

Chong (1996) examined the interactive effects of management accounting systems design and task uncertainty of managerial performance. This study indicated that, under circumstances of high task uncertainty, the extent of using broad-scope MAS information resulted in effective managerial decisions and improved managerial performance. Whereas under a condition of low task uncertainty, the extent of using broad-scope MAS information resulted in information overload which was dysfunctional to managerial performance.

Chong and Chong (1997) investigated the role of MAS on the relationship firstly, between strategic business unit strategy and sub-unit (SBU) performance; and secondly between PEU and SBU performance. The study found that SBU strategy and PEU are important antecedents of MAS design and that broad-scope MAS information is an important antecedent of SBU performance.

Gerdin and Greve (2004) identified different types of fit which were used in the strategy- MAS area. Their study also explored how different types of fit can be related to each other. They suggested that researchers should specify whether a Cartesian or a Configuration approach has been adopted. For future research, whether and how the form of fit used can be related to studies should also be discussed.

Tillema (2005) concentrated on scope which is a dimension of MAS sophistication and improved the understanding of contingency factors. The study revealed that using average scope accounting instruments needs a stable environment and variations in the operating activities. Broad scope accounting instruments require operating activities and an energetic environment. Besides the conditions above, both average and broad scope instruments need institutions which do not narrower scope accounting instruments, financial objectives and unclear financial consequences.

Naranjo-Gil and Hartmann (2007) examined MAS and the mechanism of MAS which mediates the relationship between organizational strategic change and top management team composition. This study did not find a significant relationship between top management team heterogeneity and the broad-scope design of MAS. Regarding the relationships between MAS and strategic change, the findings of the study illustrated broad-scope MAS was positively related to strategic change for organizations. The findings are in line with Chenhall (2003) and Hartmann (2005)'s studies.

Two recent developments in the field of MAS are revealed by Cadez and Guilding (2008) and Aver and Cadez (2009). Cadez and Guilding (2008) examined effect of company size, company strategy and market orientation on the strategic management accounting. They suggested that company strategic choices and company size had significant influence on the application of strategic management accounting. Moreover, the results of their study support that organizational

performance depends upon the fit between organizational structure and context. A further study (Aver and Cadez, 2009) indicated that sociological developments are highly related to accountant's participation in strategic decision-making processes.

In summary, from the review of contingent literature on management accounting systems, one main problem was identified. The main problem in contingency based modeling in management accounting is the operation of fit. Although many different forms of fit have been deployed in the literature, very few researchers have acknowledged the problems of relating them to one another (Gerdin and Greve, 2004; Cadez and Guilding, 2008). Hence, researchers should discuss explicitly how and whether the particular form of fit can be relevant to studies that have adopted other forms (Gerdin and Greve, 2004).

Apart from solving the problem in the existing literature, future studies can be improved to address the limitation of the present study. It can be summarized from the literature review that it is necessary to extend traditional boundaries of the MAS by investigating MAS design characteristics and MAS information adequacy.

CONCLUSION

The present study reviewed the contingent literature in relation to management accounting and management accounting systems following a chronological order. First of all, contingency theory was summarized as an approach to the study of organizational behavior in which explanations are given as to how contingent factors influence the design and function of organizations. Consequently, this study reviewed management accounting research using contingency theory. One result of the present study is that contingency theory has been applied in management accounting research in order to address questions about: first, the fit between organizational control and structure; second, the impact of such fits on performance; third, investigation of multiple contingencies and their impact on organizational design.

Last but not least, the present study reviewed contingent literature on management accounting system. Based on the literature review, another result of the present study is that the main problem in contingency based modeling in management accounting is the operation of fit. Specifically, although many different forms of fit have been deployed in the literature, very few researchers have acknowledged the problems of relating them to one another (Gerdin and Greve, 2004; Cadez and Guilding, 2008). Thus, a conclusion that emerges from the above literature review on MAS research is that researchers should discuss explicitly how and whether the particular form of fit can be relevant to studies that have adopted other forms for future studies. It is also necessary to extend traditional boundaries of the MAS by investigating MAS design characteristics and MAS

information adequacy.

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