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## **CONTINGENCY THEORY AND DESIGN OF PLANNING AND CONTROL SYSTEMS**

**Abstract.** The role of contingency theory in explaining the design of planning and control systems is considered. The key concepts of contingency theory are described. A comparison between this theory and universalistic and situation-specific approaches is made. This discussion is used as a basis for describing the key contingency variables and their substantive implications. Finally, the limitations of contingency theory are examined.

**Keywords:** contingency theory, contingency variables, planning and control systems.

### **Introduction**

Managers view planning and control functions as key factors in setting and achieving organizational goals. It is widely believed that the use of effective planning and control systems ensures that “members of an organization actually do what they are supposed to do in an efficient and effective manner” (Johnson & Gill 1993, p. 12). However, still theorists and practitioners don’t have a single answer what elements constitute the effective management systems. Different approaches give different suggestions and consider different factors. The scope of this essay is limited to the role of contingency theory in explaining the design of planning and control systems.

The remainder of the paper is organized as follows. The next section describes the key concepts of contingency theory and makes a comparison between it and universalistic and situation-specific approaches. This discussion is used as a basis for describing the key contingency variables and their substantive implications. Finally, the limitations of contingency theory are examined.

### **Contingency Theory**

Contingency theory contends that there is no one best way of designing planning and control systems and that management systems that are effective in one situation may not be successful in others. In other words, the optimal management systems are contingent upon various internal and external variables. For example, the study by Burns and Stalker in 1961 has found that the “suitability” of different forms of organizations were dependent on particular environmental variables, such as stability or dynamism. Six years later Lawrence and Lorsch attempted to reproduce the study by Burns and Stalker. They highlighted the complexities that arise from interaction between “organizational elements and the environmental “contextual factors,” which are the imperatives and constraints on the appropriateness of different structural

designs” (Johnson & Gill 1993, p. 11). Lawrence and Lorsch first explicitly used the term “contingency theory” (Johnson & Gill 1993, p. 9). This theory lies at the middle of management systems design continuum with two extremes at the ends: universalistic and situation-specific approach (figure 1). Universalistic approach holds that there is only one contingency setting. And as a result, there is only one best planning and control system. On the contrary, situation specific approach considers every contingency setting as a unique one. The design of management systems is influenced by the unique factors, so that no general rules or models can be applied. Contingency theory lies between these two approaches. On the one hand, it assumes that there are several contingency settings and the design of management systems depends on company’s endogenous and exogenous variables. On the other hand, it states that it is still possible to develop the general rules and models for the major classes of business settings. Contingency theory is based on three key ideas:

1. There is no universal or one best way to manage.
2. The design of an organization must “fit” the environment.
3. Effective organizations not only have a proper “fit” with the environment but also between its subsystems.

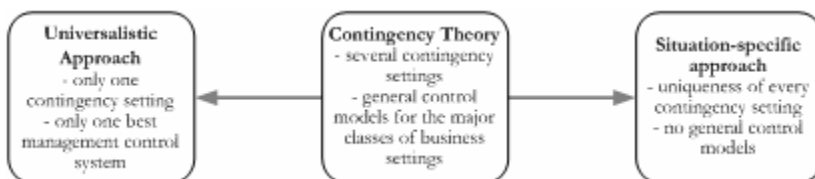


Figure 1. Approaches to Management Control System Design

Combining the ideas of Fisher (1998) and Simons (1990) together, it is possible to consider a contingent framework as an iterative process with a loop (figure 2) in which “a better match between the control system and the contextual contingency variable is hypothesized to result in increased organizational (individual) performance” (Fisher 2001, p.48). The choice made by the top management about which control system to use interactively serves as a signal about company’s priorities. And control mechanisms stimulate company’s members to achieve established objectives, promote learning and, as a result, influence the strategy formulation.

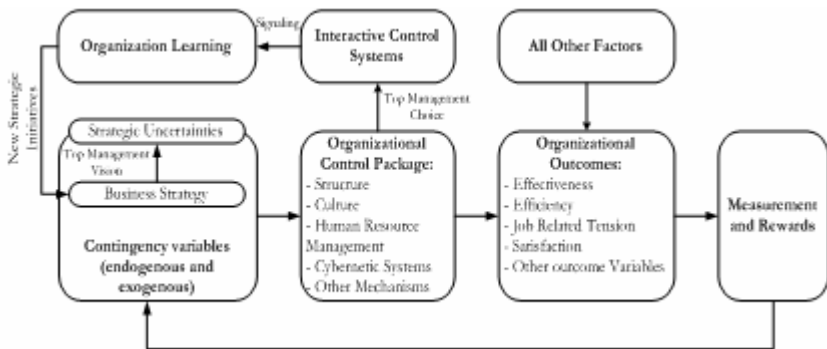


Figure 2. Contingent Framework

### Contingency Variables

As it was mentioned before contingency theory is based on the assumption that it is possible to design the general rules and models for the major classes of business settings. Contingency variables are used as a basis to group different contingency settings into discrete classes. “A contingent variable is relevant to the degree that businesses that differ on that variable also exhibit major differences in how control attributes or actions are associated with performance”(Fisher 1998, p. 49). Different researches identify different contingency variables. However, in many cases their classifications are similar and based on the fact that manager’s limited ability of information processing is the key driver of all other contingency variables. Table 1 shows the contingency factor classifications used by Hofer (1975) and Chenhall (2003).

Table 1

CONTINGENT CONTROL VARIABLES

Hofer	Chenhall
1. Uncertainty <ul style="list-style-type: none"> <li>• Task (routine: repetitive; external factors)</li> <li>• Environmental (static vs. dynamic; simple vs. complex)</li> </ul> 2. Technology and Interdependence <ul style="list-style-type: none"> <li>• Small batch, large batch, process production, mass production</li> <li>• Number of exceptions, nature of search process</li> <li>• Interdependence: pooled, sequential, reciprocal</li> </ul>	1. Environment <ul style="list-style-type: none"> <li>• Uncertainty</li> <li>• Hostility</li> <li>• Diversity</li> <li>• Complexity</li> </ul> 2. Technology <ul style="list-style-type: none"> <li>• Task uncertainty</li> <li>• Complexity</li> <li>• Interdependence</li> </ul>
3. Industry, Firm and Unit Variables <ul style="list-style-type: none"> <li>• Industry (barriers to entry; concentration ratio)</li> </ul>	3. Age and Size <ul style="list-style-type: none"> <li>• Business cycle</li> </ul>

<ul style="list-style-type: none"> <li>• Firm (structure: multi-divisional form, functional form; size; diversification: single product, related diversified, unrelated diversified)</li> <li>• SBU (size)</li> </ul>	4. Structure <ul style="list-style-type: none"> <li>• Formalization</li> <li>• Specialization</li> <li>• Integration</li> <li>• Centralization</li> </ul>
4. Competitive strategy and Mission <ul style="list-style-type: none"> <li>• Porter</li> <li>• Miles and Snow</li> <li>• Product Life Cycle</li> </ul>	5. Strategy <ul style="list-style-type: none"> <li>• Prospector vs defender</li> <li>• Low cost leadership vs differentiation</li> </ul>
5. Observable Factors <ul style="list-style-type: none"> <li>• Behaviour (effort) observability</li> <li>• Outcome (output) observability</li> </ul>	6. National culture

*Source: Fisher (1998, p. 50) and Chenhall (2003)*

The implications of these factors for the design of management control systems are summarized in table 2.

Table 2

CONTINGENCY VARIABLES AND THEIR IMPLICATIONS FOR  
MANAGEMENT CONTROL SYSTEMS

Contingent variables and their components	Implications for MCS
<b>External Environment</b>	
High environmental hostility	Formal control and traditional budgets
High level of hostile from intense competition	Formal control, sophisticated accounting, production and statistical control
High level of environmental uncertainty	More open, externally focused, non-financial styles of MCS
<b>Technology</b>	
Highly standardized-automated processes	Formal control, process control, traditional budgets with less budgetary slacks
High level of technological uncertainty	Informal control, higher participation in budgeting, more personal controls, clan controls
High level of interdependence	Informal control, more frequent interactions between subordinates and superiors; greater usefulness of aggregated and integrated MCS
Use of advanced technologies (JIT, TQM, etc.)	Informal control, non-financial performance measures
<b>Organizational Structure</b>	
Large organizations with sophisticated technologies and high diversity	Formal, traditional MCS (budgets, formal communications, etc.)
Decentralization	Aggregated and integrated MCS
Team-based structures	Participation, use of comprehensive performance measures for compensation

Organic organizational structures	Future oriented MCS
<b>Size</b>	
Large organizations	Formal control, emphasis on participation in budgets and sophisticated controls
<b>Strategy</b>	
Conservatism, defender orientations and cost leadership	Formal, traditional MCS with focus on cost control, rigid budget controls
Product differentiation, competitor focused strategies	Broad scope of MCS
Entrepreneurial strategies	Formal, traditional MCS and organic decision making and communications
<b>Culture</b>	
National culture	Design of MCS depends on national culture

*Source: Chenhall (2003)*

### **Limitations of Contingency Theory**

Even though studies based on contingency theory shed light on the design of management systems, they have a number of limitations that should be taken into account (table 3). In contrast with good researches that have a clear definition, well-defined method and comparable objectives, contingency-based researches have difficulties in addressing all of these factors.

Table 3

LIMITATIONS OF CONTINGENCY-BASED RESEARCH

<b><i>Internal critique:</i></b> <ul style="list-style-type: none"> <li>• poor statistic results</li> <li>• lack of continuity in research (instruments)</li> <li>• effectiveness omitted or self-rates</li> <li>• failure to deal with multiple aspects of control</li> <li>• failure to deal with multiple contingencies</li> </ul>	<b><i>External critique:</i></b> <ul style="list-style-type: none"> <li>• presumption of contingency relationship that actually may not exist</li> <li>• equifinality (there are different ways to achieve the same goals)</li> <li>• causality could run either way</li> </ul>
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First of all, there is no single definition of control and, as a result, there is no base for the comparison of different researches. This problem is intensified by the lack of easily accessible databases, as well as by biases, reliability issues and validity of self-assessment due to the use of surveys and questionnaires as major tools for studying contingent variables. According to Dent (1986, p. 146) contingency theory is classified as an objective and prospectively rational model with macro level of organizational analysis. However, in practice for institutional or political reasons individuals sometimes may behave irrationally and may be forced to use planning and control systems which has no “usefulness” at all (Chenhall 2003, p. 135). Another limitation

is that different studies consider different levels of analysis. For example, Fisher (1998) considers only manager level, but from the prior research it is known that there are systematic differences between control at the corporate, management and operational levels (Ansari 1977; Anthony 1965; Walsh and Seward 1990).

Second, not all contingency factors are identified and might be identified. Even the relationship between identified contingency factors is not well understood, as well as their determination and evolution over the time. Some variables can dominate or be more important than others, and some of them can even be conflicting. For example, what kind of control system a company should use when its size is large and technology interdependence is high. The former variable favors formal control while the latter one suggests using informal control. How to solve the trade-offs problem is not clear.

Third, only simple relationships between contingency factors are tested due to the lack of easily available data and sophisticated statistical techniques. These tests can determine the level of correlation between contingent variables and used management systems, but they don't address the issue of causality. Fisher (1998) classified prior research based upon the level of analysis complexity into four categories (table 4). He pointed out that usually empirical research examines only one control system attribute at a time and not the whole control system or one contingency factor at a time and not the combination of these factors. Moreover, testing the relationship between a contingency variable and an aspect of the control system, no attempt is made to assess the correlation of control system with the firm's outcomes. In addition, the question of equifinality is not resolved. Maybe, there are several control configurations that result in similar firm outcomes.

Table 4

#### FOUR LEVELS OF CONTINGENCY ANALYSIS

	Level 1	Level 2	Level 3	Level 4
Researchers	Rockness and Shields (1984) Merchant (1985) Macintosh and Daft (1987) Simons (1990)	Govindarajan (1984) Simons (1987) Fisher (1994)	Waterhouse and Tiessen (1978) Govindarajan and Fisher (1990)	Gresov (1989) Fisher and Govindarajan (1993)
Description of the analysis	One contingent factor is correlated with one control mechanism	The joint effect of a control mechanism and contingent factor on an outcome variable	The joint effect of a contingent factor and multiple control mechanism on an outcome variable	Simultaneous inclusion of multiple contingency factors in determining the optimal control design

*Source: Fisher (1998)*

## **Conclusion**

To sum up, contingency theory states that the design of planning and control systems is dependent on or contingent upon various internal and external variables and that a better “fit” between these variables and management systems should result in increased organizational performance. While the contingency-based research has a number of limitations such as poor statistical results, failure to deal with multiple aspects of control and multiple contingencies, it is still a useful tool to assist managers in their decision making. As Burns and Stalker (1961, p. 125) mention, “The beginning of administrative wisdom is the knowledge that there is no optimum type of management system.”

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