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CONTINGENCY APPROACH TO PERFORMANCE MEASURES DESIGN

Abstract: The author deals with the problem of performance measures design methodology on the basis of contingency theory. In the first part of the article the general overview of contingency framework was described and the typology of contingency factors was proposed in respect of both external and internal variables. In the second part the detailed study of the contextual factors was analyzed. In particular the linkage between critical success factors and performance measures design was examined. Finally the adjusting of the performance measures to the organizational structure was elaborated.

Keywords: performance measurement, contingency theory.

1. Introduction

Performance measures are the integral part of the performance measurement and management process. According to CIMA Official Terminology performance measurement is the process of assessing the proficiency with which a reporting entity succeeds, by the economic acquisition of resources and their efficient and effective deployment, in achieving its objectives [3, p. 20]. The performance measures design is strongly influenced by the complex set of conditions under which contemporary organizations operate. The starting point is the recognition of the contingency factors, because the contingent variables define the object, scope and methods of measurement. Performance management involves constant monitoring and reporting of the results achieved in different parts of the organization at all levels of the organizational hierarchy and across various functions, such as marketing, research and development, production, etc. Performance reporting provides concise, timely-based information on performance to managers. This information is needed in order to get insights in how the organization is really doing and what actions should be taken and how to do it.

The aim of the paper is to explore the contingency approach to performance measures design under the framework of performance management. Thus the article tries to examine the major contingency factors and investigate their influence on the performance measures design process.

2. Overview of contingency approach

The contingency approach to management accounting was developed in the 1980s. Since that time most researchers have adopted a contingency perspective and taken into account the contextual variables. This approach was partly a solution to ambiguous results of research conducted under behavioural approach.¹

One of the first and commonly known definitions of contingency theory in the context of management accounting was offered by D.T. Otley [14, p. 431], who claims that “the contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system which applies equally to all organizations in all circumstances. Rather it is suggested that particular features of an appropriate accounting system will depend upon the specific circumstances in which organization finds itself”. Following this idea one can say that there are no general rules for management accounting systems design and that the conceptualization of management accounting model oriented toward performance control is not possible. This is the problem referring not only to accounting, but also to management theory due to the fact that two identical conditions almost never happen. These remarks indicate that a contingency framework is necessary in studying performance measurement systems design. The general view of the framework is depicted in Figure 1.

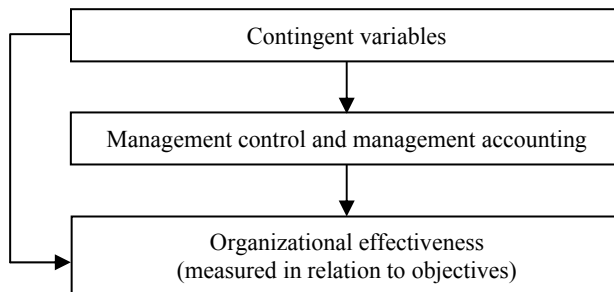


Figure 1. Contingency framework

Source: drawn by the author on the basis of: [14, p. 421].

K. Langfield-Smith [7, p. 248] explains that under the framework of contingency approach the design of management control and performance measurement systems is influenced by elements of an organization’s context, such as the environment, technology, structure, and strategy. Strategy is not a contingent variable in strict

¹ The identification of contextual variables potentially implicated in the design of effective management accounting systems can be traced to the original structural contingency frameworks developed within organizational theory in the 1960s. See considerations in: [2].

sense, managers have rather strategic choice. They can select a strategic direction that will position their organization in a particular external environment or market.

The starting point while designing performance measures is the analysis of the contingency factors. J.D. Wisner and S.E. Fawcett [17, p. 9] as ones of the first authors appreciated the significance of the organizational context for the performance measures design. They discussed the necessity of periodical evaluation of the appropriateness of the established performance measures in view of the current competitive environment.

One of the most important requirements for modern performance management systems is to stimulate continuous improvement and organizational learning. This postulate needs the contingency theory to be taken into account, so alongside with the changes in external environment established measures should be modified. M.W. Meyer and V. Gupta [9, pp. 330-342] notice that measures tend to lose their relevance and ability to discriminate between good and poor performance over time. They argue that failure to manage this change causes the introduction of new measures which are weakly correlated with those currently used so that a company will have a diverse set of measures that do not measure the same thing. They call this effect a performance paradox.

The major role in the assessment of the context, in which the organization operates, is played by the stakeholder analysis. This analysis is followed by the recognition of the measurement object and the entities involved in measurement. From the financial point of view the shareholders' wealth is of great importance. Obviously it is very hard to satisfy all the stakeholders simultaneously if the management is focused only on value creation. However, in spite of goal incongruence, different groups of stakeholders may have congruent information needs. For example, the owners, banks, employees and even local communities can be interested in corporate financial liquidity.

Specification of other contingency factors is a hard task, because there is a variety of different opinions on variables that affect the design of management control and performance management systems. J. Fisher [4, p. 30] proposes five groups of contingent factors:

- 1) external environment,
- 2) competitive strategy and mission,
- 3) technology,
- 4) unit, firm and industry variables,
- 5) knowledge and observability factors.

K.A. Merchant [8, p. 729] distinguishes three sets of situational factors: organization and people factors, mission and strategy factors, and environmental and technology factors. Similar approach to contingency theory is preferred by R.J. Mockler [10, p. 7], though he puts the accents in a different way. In his opinion the major groups of contingency variables include: general external factors, competitive market factors, and company factors.

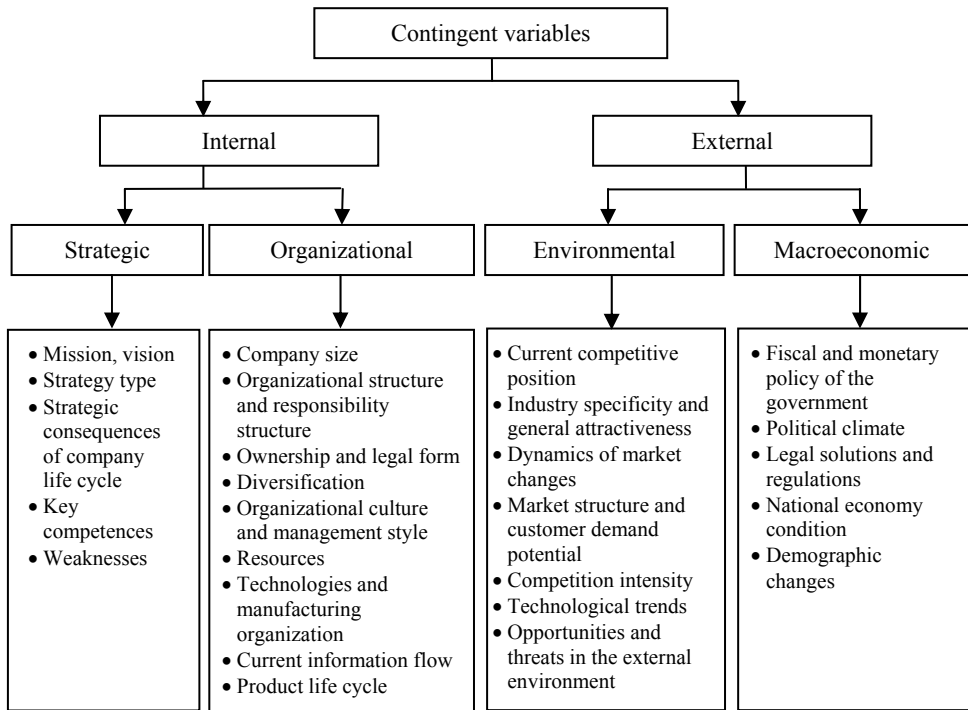


Figure 2. Contingent factors influencing performance measures design

Source: [12, p. 210].

The author’s own typology of contingency factors that should be taken into account while designing performance measures is presented in Figure 2. The typology is based on the author’s experience and on previous studies. All the factors are divided into two major categories: internal and external.

3. The role of contingency factors in performance measures design

The performance measures design is strongly influenced by the complex set of conditions under which contemporary organizations operate. Thus it is argued that the methodology of performance measures design should consist of six basic elements:

- 1) recognition of contingency factors, in particular those regarding to the organization’s strategy and stakeholders,
- 2) agreement on the attributes of performance measures,
- 3) identification of critical success factors,
- 4) linking the critical success factors to the dimensions of performance measurement,

- 5) allowing for the organizational structure,
- 6) techniques of performance measures design.

The starting point is the recognition of the contingency factors, because the contingent variables define the object, scope and methods of measurement. Specifically, the analysis of the stakeholders and their needs as well as the strategy adopted must be taken into consideration. The set of measures that are subject to the design process should be comprehensive and thus the measures should fulfil the special requirements known as the attributes. Agreement on the attributes, such as the measure formula, calculation procedure or data sources is essential in order to assure the relevance, reliability and integrity of the performance measurement process. These attributes influence the whole design procedure. The performance measures are a means of quantification of critical success factors, so identification of these factors should be followed by the definite design of the measures. The critical success factors should be also linked to the dimensions of measurement within the organization in order to answer the general question referring to what should be measured. Performance measurement should cover the whole organization and be aimed at management activities focused on performance improvement and strategy execution. In this context the main emphasis should be put on the organizational structure analysis and performance measures design across both the functions carried out in an organization and different levels in an organizational hierarchy. Finally, the performance measurement design is sometimes supported by different techniques, such as Pareto analysis or Ishikawa diagram.

4. Critical success factors as the contingent variables

According to *CIMA Official Terminology* [3, p. 47], critical success factor is an element of organizational activity which is central to its future success. Critical success factors may change over time, and may include items such as product quality, employee attitudes, manufacturing flexibility and brand awareness. The relationship between the organizational goals and performance measures is shown in Figure 3. It clearly indicates for critical success factors as a missing link between goal setting and corporate performance.

Critical success factors should be linked to the key dimensions of performance the company must focus on if it is to achieve its objectives and fulfil customer needs. The performance dimensions and critical success factors vary across industries and companies, however, it is possible to distinguish the factors common for most companies.

According to the Institute of Management Accountants [6, p. 15] typical enterprise-wide critical success factors include:

- 1) producing products that customers perceive to be of the highest quality,
- 2) designing new products quickly,
- 3) keeping the cost of the product or service low,
- 4) responding quickly and fully to customer requests.

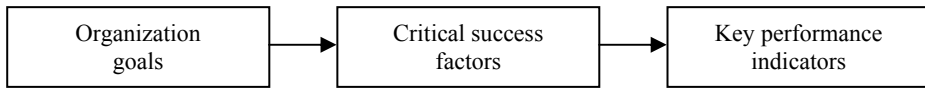


Figure 3. Link between goals and measures

Source: [12, p. 213].

The specialists from IMA express the opinion that critical success factors should be limited in number and emphasize the activities and processes that will have the most impact on total performance. Besides CSFs should drive accomplishment in supporting areas.

M.E. Beischel and K.R. Smith also think that certain factors are universal to all manufacturing companies and each is critical to the ongoing health of the company. They enumerate five critical success factors [1, pp. 25-26]:

1) quality – product quality is defined as meeting or exceeding customer needs and achieving customer satisfaction, whereas process quality is defined as “doing it right the first time” or reducing process variation,

2) customer service – external customer service is defined as meeting customer demand for end-products and internal customer service is defined as meeting the demand of internal customers such as other manufacturing departments,

3) resource management – defined as optimizing outputs to inputs in people, inventory, and fixed capital,

4) cost – defined as the costs that can be managed at the level reported,

5) flexibility – defined as responsiveness to changing market, regulatory or environmental demands.

A. Neely et al. [11, p. 1231] argue that there are four generic terms that encompass a variety of different dimensions of corporate performance:

1) quality associated with product features, reliability, conformance, technical durability, etc.,

2) time regarding manufacturing lead time, frequency of delivery,

3) flexibility including factors such as resource mix, volume and others,

4) cost referring to manufacturing cost, value added, running cost, etc.

J.D. Wisner and S.E. Fawcett [17, p. 10] point out that performance measures should be consistent with the characteristic of world-class manufacturing. In their opinion the role of performance criteria adopted while distinguishing dimensions of performance measurement is twofold. First, they should provide the company with a method to assess its competitive position with respect to its competitors and the demands of the market and identify avenues for improvement. Second, to monitor the company’s progress in moving to strategic objectives. Thus the measures should be designed to help the company achieve a high degree of competence along the dimensions:

- 1) quality,
- 2) cost,
- 3) flexibility,
- 4) dependability,
- 5) innovation.

M. Hudson et al. [5, p. 1102] propose to group the performance terms into six general dimensions. These dimensions can be seen to cover all aspects of business: the financial results, the operating performance (through the dimensions of time, quality and flexibility), the way the company is perceived externally through its customers, and the cultural aspects of the working environment through the human resources dimensions.

Taking into account the above considerations and the opinions found in literature, four major dimensions that would be used for performance measures design were specified, as shown in Table 1. The suggested four dimensions include quality, time, flexibility, and finance and costs. For each dimension the examples of critical success factors were given.

Table 1. Performance measurement dimensions and critical success factors

Quality	Time	Flexibility	Finance and costs
<ul style="list-style-type: none"> • features • reliability • durability • serviceability • aesthetics • defectiveness 	<ul style="list-style-type: none"> • lead time • manufacturing time • process time • delivery time • resource usage • return processing time • new product introduction time • frequency of delivery 	<ul style="list-style-type: none"> • product mix • product innovations and modifications • production volume flexibility • resource mix control 	<ul style="list-style-type: none"> • manufacturing costs • logistics costs • sales and after-sales costs • selling prices • revenues from sales • cash flows • profitability • value added

Source: [13, p. 274].

Some authors distinguish between result and effort critical success factors. Result critical success factors are important for monitoring the results of an objective or a key process and can be determined by answering the question: “what is the result when we achieve the objective successfully?” On the other hand, effort critical success factors are important for monitoring the efforts that are critical for achieving an objective or process and can be identified by answering a question: “what do I absolutely need to do to achieve the objective successfully?” After identifying the critical success factors, the company needs to identify the key performance indicator for each CSF [16, p. 117]. The example of linkages among both types of critical success factors and corresponding key performance indicators is shown in Figure 4.

In practice the identification of critical success factors is not an easy task, because it involves the conduction of the corporate strategic analysis. The major role is played

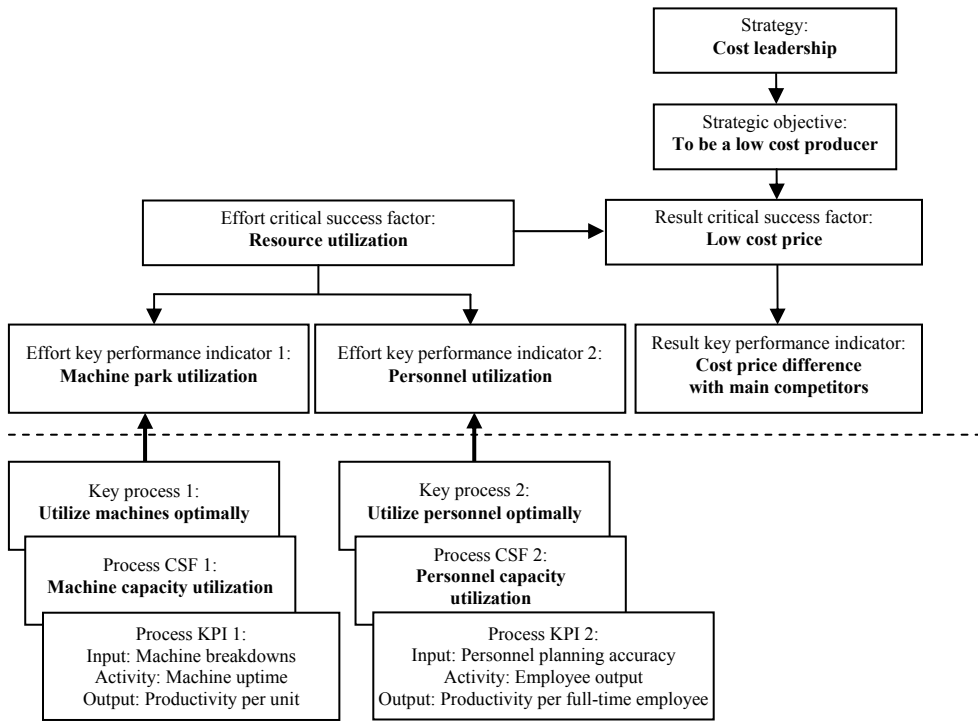


Figure 4. Example of the linkages between strategy and processes

Source: drawn by the author on the basis of [16, p. 123].

by the SWOT analysis which allows managers to recognize corporate strengths and weaknesses as well as threats and opportunities in the external environment.

A. de Waal [15, p. 100] offers a set of practical guidelines regarding the identification of critical success factors. First of all, he suggests that each objective should be measured with at least one result and no more than two effort CSFs. He also claims that for each CSF, no more than three KPIs should be developed. Furthermore, CSFs should contain not only financial information, but also non-financial information to ensure well balanced view of each objective. A CSF must be a qualitative notion that describes in words how a certain objective can be measured and CSF describes only what has to be measured, not what the direction of the value of the result should be.

5. Organization structure as the contingency factor

One of the most important contingency factors while designing performance measures is the allowing for the organizational structure. Established measures on the one hand should reflect the information needs of various management levels, on the other hand

should take into account the specificity of functional areas within the organization. This notion is presented in Figure 5 which indicates the need for the transmission among various functions and hierarchical order of management levels.

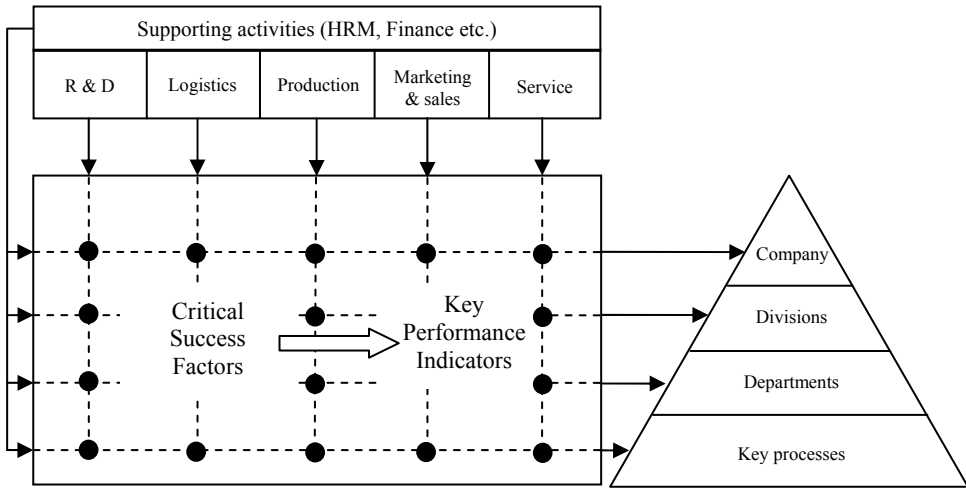


Figure 5. Hierarchical and inter-functional performance measures design

Source: [12, p. 218].

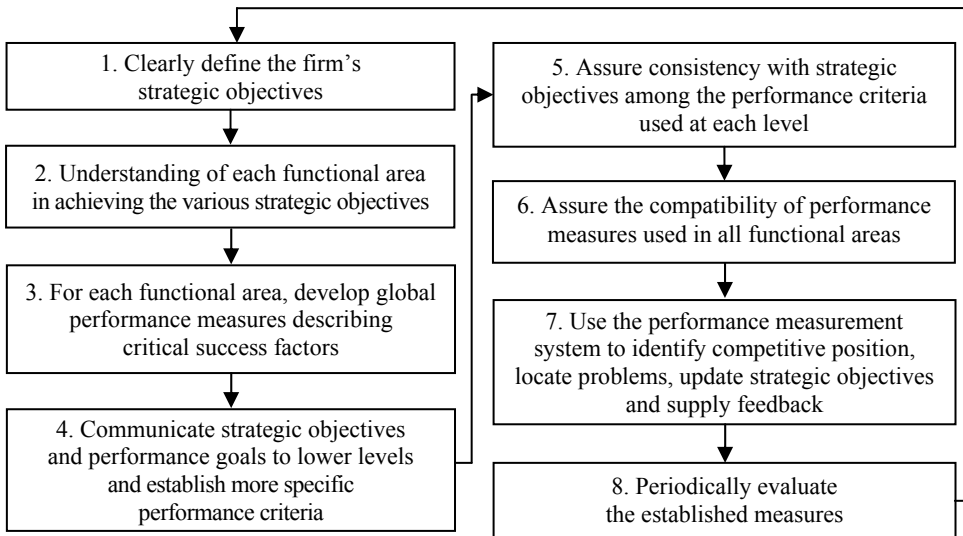


Figure 6. Performance measures design as an ongoing process

Source: drawn by the author on the basis of [17, p. 9].

In order to design performance measures it is necessary to consider the specificity of different functional areas such as production, marketing with respect to the possibility of describing their performance by means of the measures that are further cascaded down. Critical success factors, identified at the highest level (organization as a whole) should be disaggregated into more detailed performance determinants and quantified by means of various indicators at all management levels. At each level, from top-management level to particular processes, it is needed to propose the measures that can be the bases of performance evaluation at these levels.

The comprehensive system of performance management should be dynamic, stimulate organizational learning and drive feed-back. Thus while designing performance measures it is necessary to take into account not only organizational structure, but also periodic evaluation of established performance measurement system and adjustment to the changing market conditions as shown in Figure 6.

It presents the steps necessary for developing and maintaining an effective performance measurement system. After establishing the performance measures across functions and management levels, one should take advantage of this system to evaluate the current competitive position of a company, identify the problems that may occur, update the strategic objectives, and finally take actions oriented toward achievement of those goals. In this context it is possible to supply the feed-back that is to guarantee the adjustment of performance measures to new contingency factors.

6. Concluding remarks

Once contingent factors have been identified it is necessary to agree on the attributes of performance measures such as the linkage to organizational strategy or understandable formula. Next steps involve the identification of critical success factors and linking them to the various dimensions of performance measurement, such as quality, time, flexibility and cost. It is also needed to allow for the organizational structure and design performance measure across functions and management levels. Finally, one should consider some techniques that support the process of designing performance measures. At the very beginning of the performance measurement design procedure it is essential to specify the purpose of introducing a certain measure. People involved in a measurement process must know the reason for using the measure. So it is needed to link a measure with a dimension, such as quality, profitability, etc. All the measures should be derived from the organizational strategy directly or indirectly. As performance management systems is aimed at strategy execution, the measurement process should monitor the strategic direction and whether the organization is on track. It means that each measure should reflect critical success factors, namely the areas critical for gaining and sustaining competitive advantage. The formula of the measure should be clear and easy to understand in order to eliminate problems with interpretation. A complex formula may lead to

discrepancies while calculating a measure by means of different procedures and information systems. To avoid such problems the calculation algorithm for each measure should be clearly established. It is worth mentioning that the name of the measure itself needs to be unambiguous and indicate its content and economic sense. While designing performance measures the source of data should be specified. This condition is very important especially with respect to the comparison of performance achieved over time. The level of performance to be achieved needs to be specified for each measure. It enables managers to treat the measure as a control tool and provides both feed-back and feed-forward. Simultaneously, it is possible to drive a continuous improvement and organizational learning. The performance measures should be cascaded vertically and horizontally. Measures should be designed in such a way that performance measurement is possible across functions carried out within the organization and different levels in the organizational hierarchy. At the top-management level more financial measures should be adopted in order to express aggregated view of the company performance. The lower the management level the more non-financial measures should be used to track day-to-day operations in various functions. The frequency of performance measurement and reporting should be clearly indicated for each measure. It is also recommended that the frequency relies on the importance of a particular measure.

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PODEJŚCIE UWARUNKOWAŃ SYTUACYJNYCH DO PROJEKTOWANIA MIERNIKÓW DOKONAŃ

Streszczenie: Artykuł dotyczy problemu projektowania mierników dokonań z uwzględnieniem teorii uwarunkowań sytuacyjnych. W pierwszej części opracowania opisano teorię uwarunkowań sytuacyjnych oraz zaproponowano typologię czynników sytuacyjnych. W drugiej części szczegółowej analizie poddano zmienne sytuacyjne oddziałujące na procedurę projektowania mierników. W szczególności omówiono relację między krytycznymi czynnikami sukcesu a miernikami dokonań. Na końcu rozpoznano dostosowanie mierników dokonań do struktury organizacyjnej przedsiębiorstwa jako jeden z głównych czynników sytuacyjnych.