

Organizational flexibility estimation

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Abstract - By the help of parametric estimation the evaluation scale of organizational flexibility and its parameters was formed. Definite degrees of organizational flexibility and its parameters for the Lviv region enterprises were determined. Grouping of the enterprises under the existing scale was carried out. Special recommendations to correct the enterprises behaviour were given.

Key words – organizational flexibility, organizational flexibility estimation, the evaluation scale of organizational flexibility, organizational flexibility parameters, parametric estimation method of organizational flexibility.

I. Introduction

Despite the widespread use of the concept, various partial classifications, numerous attempts of evaluation, it is worth to mention the absence of a single concept, integrated classification, universal estimation system of organizational flexibility. That is why it is relevant to form the concept, overall classification and definite evaluation method of organizational flexibility.

The aim of the paper is to evaluate the degree of organizational flexibility by conducted parametric estimation.

II. Main results

Organizational flexibility is the organizational ability to respond to the economic environment uncertainty and complexity without excessive costs, loss of time and productivity. According to author's comprehensive classification we can classify the parameters of organizational flexibility by the following major criteria:

by type of organizational relationships we can define the external (regarding to inter-organizational relationships) and internal (refers to internal organizational relations) sides of flexibility;

along the value chain we can distinguish the following types of flexibility, such as product development, manufacturing, logistics and communication channels flexibility, each of which has its subtypes. For example, manufacturing flexibility includes such subtypes as machine, labor, material handling, distribution and financial flexibility;

by organizational product policy elements we can allocate such types of flexibility, as output flexibility (organizational ability to work effectively at different outputs), product mix flexibility (organizational ability to change product mix during the period), new/modify product flexibility (the ability to create new products or modify existing ones);

at different levels of planning within the organization we can define strategic, tactical and operational levels of flexibility.

Author's comprehensive classification allows forming vertical specified flexibility parameters (internal manufacturing flexibility, tactical product mix flexibility

etc.), on the one hand, whereby we can clearly understand the nature and characteristics of each, and horizontal comprehensive idea of organizational flexibility on each stage, on the other hand.

The relationships between the parameters of organizational flexibility are complex. According to the combination of resource and situational theories, types of flexibility along the value chain are considered to be resource (basic) parameters, types of flexibility by organizational product policy elements – system (higher) parameters [1, p.76].

To define the degree of organizational flexibility by parametric estimation we choose its six parameters – machine, labor, material handling (resource parameters), product mix, new product and modify product flexibility (system parameters). Resource flexibility parameters are not only the subject of study, but also provide an opportunity to achieve system flexibility parameters. Product mix, new product and modify product flexibility allow organizations to respond competitive market changes, therefore they are often included in empirical studies [1, p.81].

Parametric estimation of organizational flexibility was conducted at the enterprise level, because, firstly, there is a high probability of their presence there, secondly, enterprise level analysis complies with organizational flexibility empirical studies, and thirdly, modern researches prove that individual companies within the same industry or strategic business units can achieve different degrees of flexibility [1, p.83], and therefore the analysis at the enterprise level provides sufficient variation for the formation and study of selected parameters.

The studied flexibility parameters are within the competence of senior management, so the target survey respondents were senior and middle managers (85.7%). Thus, we can assume that respondents not only have accurate information about the degree of organizational flexibility, but also can directly affect it, which in turn increases the accuracy of the conducted survey results.

To determine sample boundaries three criteria were used: firstly, as a type of manufacturing process machine-building was chosen due to the likely presence of an unstable environment and compatibility with all desired organizational flexibility parameters. We should note that machine-building plants that produce multiple products in relatively small quantities need flexible resources. Plants with assembly or production lines also require a certain degree of organizational flexibility, including product mix and new product flexibility. Conversely, there is no need of organizational flexibility for companies that produce one or a limited number of products [2, p.42]. Due to the differences, machine-building enterprises, owners of assembly or production lines that produce multiple products dominated in the study. Secondly, to summarize study assessments sample should include a variety of elements, and at the same time be restricted, in this case by the industry boundaries. Thirdly, as in the previous empirical studies sample should include mostly medium and large enterprises, as it is believed that they have a greater ability to attract material and immaterial resources than small, which leads to the development of higher organizational flexibility parameters (product mix, new/change product flexibility) [3, p.139].

According to three sample criteria we choose machine-building enterprises located in the Lviv region that meet the requirements. The following communications made possible to collect 14 completed questionnaires. Machine-building enterprises of the sample can be divided into three groups in terms of gross revenue and number of employees: I – small (gross income to 10,000 thousand hryvnya, the number of employees to 100 employees); II – middle (10000-25000 thousand hryvnya gross income, 100-500 employees); III – large (gross income of more than 25,000 thousand hryvnya, more than 500 employees). The range of gross income from sales and number of employees shows that the sample consists of a combination of medium and large enterprises; therefore the goal of creation sample with predominant share of medium and large machine-building companies is achieved.

To establish the degree of organizational flexibility of each parameter scale from 0 to 1 with the corresponding characteristic and the degree of organizational flexibility for each parameter is used: 0,00-0,24 – zero degree of flexibility; 0,25-0,49 – low degree of flexibility; 0,50-0,69 – average degree of flexibility; 0,70-0,87 – high degree of flexibility; 0,88-1,00 – very high degree of flexibility. The results of the parametric flexibility estimation two companies are recognized to be inflexible (2, 13), three have potential flexibility (1, 7, 14), seven are flexible (3, 4, 5, 6, 9, 10, 12) and two – totally flexible (8, 11).

Inflexible and potential flexible enterprises mainly belong to the first group in terms of gross revenue and number of employees, flexible – to second and third, totally flexible – to the third group. For 57 % enterprises the degree of resource flexibility parameters are higher than the degree of system flexibility parameters, and it is characteristic to the same extent, as for potential flexible and for flexible enterprises. For a totally flexible enterprises system flexibility parameters degree, albeit slightly, are still higher than resource flexibility parameters degree.

According to the parametric estimation inflexible enterprise 2 has low degree of all flexibility parameters, except labor flexibility. The enterprise is in critical condition and a recommendation for it is to attract investment for machinery and capital equipment upgrade and staff training. For inflexible enterprise 13 and potential flexible enterprise 7 the most problematic areas are inflexible technologies, a low degree of product mix, new/change product flexibility. This suggests the need of technological base upgrade, but at the same time, flexible machines and personnel lack to change product mix and introduce new products into the production.

Potential flexible enterprise 1 acts according its capabilities and external environment influence to use limited resources in reacting consumer demand changes by modifying its product mix, offering new or modified products. The enterprise has about the same potential of flexibility parameters, except flexible labor, and it is recommended to correct it through training and training programs for staff. Potential flexible enterprise 4 insufficiently uses high degree of machine and potential degree of labor and material handling flexibilities for system flexibility parameters increase. Although the enterprise demonstrates high degree of change product

flexibility, it is recommended to increase its product mix and introduce new products into production, after technological base and staff skills improving.

For flexible enterprises 3, 6, 9, 10 problems are the partial use of its rich resource potential for increasing system parameters flexibility. These enterprises have flexible machine and technological base, wide-skills staff, however their system flexibility parameters degree are inadequate. The reason may be in the partial use of existing facilities, unreasoned behavior strategy, unskilled management, bad organizational form, unhealthy corporate culture etc. In our opinion, these enterprises are most problematic. They don't respond adequately to changing internal and external environment, because of its rich opportunities and diverse resource potential awareness they don't develop and can lose market position and competitive advantage.

High flexible enterprises 4, 12 reach the highest degree of resource parameters flexibility, but are not entirely flexible in its system parameters. Only because of their extremely high resource potential, they can stay afloat for a long time to achieve some success, though less and less in the long term. Recommendation for flexible enterprises 3, 4, 6, 9, 10, 12 are to revise their goals and management strategies, to form stable corporate culture, to enhance employee motivation, to involve experts for innovative products development.

Enterprise 5 is the only one which uses its resources to create opportunities. However, it is recommended when necessary to increase its internal potential and to save or to increase the rates of capabilities development.

Enterprises 8, 11 show a high degree of resource and, in particular, system flexibility parameters, which allow them to react adequately to the environment instability by product mix/product changes and product introductions, which become possible by flexible machines and technologies use guiding by the flexible staff. These companies are recommended not to reduce resource and system flexibility parameters degree and to develop their opportunities in stable or increasing rate.

Conclusion

Using parametric estimation we can form organizational flexibility and its parameters scale evaluation, set organizational flexibility and its parameters degree for Lviv region machine-building enterprises, to group the enterprises under the scale and to make recommendations to correct the behavior of each. We plan to establish organizational flexibility degree by financial and economic evaluation in the further research.

References

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