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**THE CONCEPT OF ORGANIZATIONAL FLEXIBILITY
– SOME THEORETICAL AND EMPIRICAL ISSUES**

In this article presenting the results of the research project, an attempt was made to conceptualize the notion of the organizational flexibility, applying for this purpose the hitherto literary works on the subject and verifying understanding and evaluation of managing flexibility by the practitioners in the field of economics.

Keywords: flexibility, conceptual framework, results of survey

INTRODUCTION

The term “flexibility” has become a major catchword in the new economy. We are currently facing an unprecedented increase in the demand for flexibility. Flexible structures, processes, resources and work have become the most desired innovation of the modern economy. Positive connotations carried by flexibility, together with its openness to changes and readiness to vary solutions/mode of operating which provide an alternative to the rigid and formalized old economy, contribute to arousing general interest in this concept. For an organization, flexibility starts to condition achieving its natural objective – striving for survival and development. Moreover, flexibility facilitates maintaining a relatively permanent advantage over the competitors in the reality of hypercompetition.

At the same time, the term flexibility has become a special buzzword, functioning more as a magical spell and the latest fashion, than a precisely and unambiguously defined concept. Therefore, it seems that the phenomenon of flexibility we are currently dealing with is a sufficient reason for making an attempt to recognize the essence/nature of flexibility. Such an identification conditions operationalization of activities for shaping flexibility and optimizing its level, including, among others, widening the spectrum of tools – activities making the organization more flexible which are necessary to sustain the organization’s operations in the circumstances of

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increasing environment turbulence and entropy growing inside the organization.

This article, therefore, aims at reviewing and analysing literature on the subject of conceptualizing the organizational flexibility and the broadening (supplementing) of this concept by verification of understanding this notion by the practitioners in the field of economics together with their self-evaluation of involvement in shaping organizational flexibility. The present work is a partial presentation of results obtained during the study carried out under the research project 1 H02 D0518 (financed with the state budget funds for science during the years 2005-2007), entitled *Flexibility as a determinant of an organization's operations and development*.

The objective of this paper shall be achieved by presenting and discussing the following issues:

- metaphors and synonyms for the concept of flexibility
- defining flexibility
- approach towards identification of flexibility's nature
- types of flexibility
- distinguishing marks of flexibility – synthesis
- understanding flexibility by the practitioners in the field of economics
- evaluation of the advancement level in managing flexibility.

1. METAPHORS AND SYNONYMS OF FLEXIBILITY

As confirmed by the study of the literature on the subject of flexibility, despite the wide application of this concept, it is neither explicitly defined nor well structuralized, raising a series of doubts during its interpretation. The majority of researchers investigating this issue emphasizes the multidimensionality of the concept of flexibility, noticing at the same time that its conceptual framework is extremely broad. This is also indicated by an attempt of insight into the essence of flexibility, by applying the metaphorical approach – the way of explaining things by passing from something unknown to something known.

Table 1 below presents the selected associations that might be useful while explaining the essence of flexibility.

Table 1
Flexibility from a metaphorical perspective

| Metaphors of flexibility | Explanation |
|---|---|
| Elasticity – bamboo | Bamboo has the ability of surviving the most violent storms and strong winds. As opposed to the trees, it can bend and then come back to its original shape. |
| Adaptability – chameleon | The ability of sudden change of skin colour in order to become similar to the surroundings and thus ensure safety. |
| Agility – cheetah | The speed of a cheetah is its chief asset while hunting for other animals it gives the cheetah an advantage over the others. |
| Equilibrium – a musical instrument | The strings of a musical instrument must have appropriate tension – which reflects the state of equilibrium; functioning of an organization is also connected with maintaining balance between centralization/decentralization, formalization/improvisation, stability and changeability. |
| Freedom – independent country | The freedom of thinking and acting makes an entity's operations more effective, it stimulates creativity and innovation, however, this must be a disciplined freedom, i.e., such freedom which grants rights, and at the same time, imposes obligations. |
| Autonomy – having a child | Giving consent for autonomy is connected with the possibility of establishing and developing new entities; it is about limiting the dependence of these new entities upon the parent organization. |
| Liberalization – the attitude of grandparents to upbringing | Liberalization in the general sense is identified as reduction of limits and control. Parents, while bringing up their children, impose a lot of restrictions upon them, whereas grandparents tend to limit strict discipline and control. |
| Dedication and consequence in one's actions – mother | The mother is the symbol of dedication, necessary to achieve one's objective. In the case of a mother this objective is bringing up a child; on the other side her actions must be responsible and consistent. |
| Openness – the sky | The sky is limitless, however, while looking at the sky through the window, one may have the impression that it is a "cut piece" of space. The openness of the people in an organization might be also restricted by, for example, the systems of values, legal norms, possessed knowledge, etc. In order to increase the openness, one must overcome specific barriers, increase one's mental abilities, i.e., look at the sky through an open window. |

Source: own work with the use of Sushil 2001, pp. 569

The richness of the content and, at the same time, the ambiguity of the notion of flexibility is also presented by its synonyms, the ones most often used in the literature on the subject, are presented in Table 2.

Table 2
Synonyms of flexibility

| Term | Description |
|--------------|---|
| Agility | Described as the ability to thrive in an environment of unpredictable change; known as Dynamic Stability. |
| Adaptability | Regarded as the ability to respond to foreseen changes, whereas the regular definition of flexibility lends itself to the ability to respond to unforeseen changes. |
| Elasticity | Interpreted as being similar to adaptability, but is more focused on the ability to return to normal state following a response to change. |
| Liquidity | Refers to the ease with which an entity can make a transition from one period to a desired position to another period. |
| Plasticity | Regarded as the ability to maintain a state, but more accurately in terms of flexibility, the ability to maintain that state while transitioning to another. |
| Robustness | Interpreted as the ability to endure all transitions caused by foreseen changes. |
| Resilience | This term is similar to Robustness but focuses on unforeseen changes. In this instance the term ability to endure would be replaced by the term ability to absorb or ability to take in |

Source: own work with the use of (Conboy, Fitzgerald 2004, pp. 15)

In the light of the presented connotations, flexibility is a mixture of various properties, which constitute a vast space for versatile mechanisms, actions, and attitudes, etc.

The complexity of the notion of flexibility designatum is confirmed by further analysis of the conceptual framework of flexibility. Generally (intuitively), flexibility is understood as a property of a subject/object, consisting in its susceptibility to changes (under the influence of specific

factors), meaning special ease and speed in responding to changes, and as a result introducing appropriate modifications.

In the technical sciences flexibility is mostly identified with elasticity, i.e., property of bodies consisting in restoring the original shape, once the force causing deformation is withdrawn.

In the biological sciences flexibility is understood as an organism's ability to respond by changing, e.g., the shapes, functions, under changing environmental conditions.

In the sociological sciences flexibility is defined as "uncommitted potential for change"; a healthy, flexibility-wise system was described as an acrobat on a high-wire: "he must be free to move from one position of instability to another, i.e., certain variables such as the position of his arms and the rate of movement of his arms must have great flexibility, which he uses to maintain the stability of others fundamental and general characteristics" (Bateson 1972, pp.498).

As regards the widely understood economic sciences (including management sciences), it seems that the intentions of the authors describing flexibility come close to the understanding of this concept by the previously mentioned sciences. This may be proved by ascribing by J.S. Evans (Evans 1991, pp. 69), a whole series of skills to flexibility, including: adaptability, mobility, modifiability, ability to improve, agility, dexterity, fluidity, plasticity and resilience, etc.

2. DEFINING FLEXIBILITY – A REVIEW OF DEFINITIONS

The complex nature of flexibility is confirmed by analysing its definitions formulated in the literature on the subject through the last several dozen years. The majority of authors, while verbalizing the polyform nature of flexibility, expresses it by distinguishing particular types of flexibility.

Table 3 presents selected definitions of flexibility with their particular characteristics.

Table 3
Review of selected definitions of an organization's flexibility

| Definition of flexibility | Features and properties of flexibility | Author |
|---|---|--|
| Flexibility is a an organization's property consisting in its ability to manage the changes in the environment (mainly through increasing the liquidity of the company's resources). | external flexibility – connected with the ability to influence the organization's environment (aggressive, defensive flexibility) internal flexibility – the ability of quick adaptation in order to fulfil the requirements of the environment | Ansoff H.I. (1965) |
| Flexibility is a characteristic of an organization that makes it less vulnerable to unforeseen external changes or puts it in a better position to respond successfully to such changes. | operational flexibility (relates to routine operations of an enterprise) competitive flexibility – is necessary for an enterprise to react to competitive changes caused by a major transformation of the market position. strategic flexibility – necessary for a firm to reposition itself while responding to the changes from the macro environment. | Eppink D.J (1978) |
| Flexibility is the ability to change, which allows for maintaining a company's life. It comprises the following changes: through adaptation to the changes in the environment (impossible to foresee) through taking chances that might come up in the environment, for the organization's development. | operational flexibility (in production - as a consequence of temporary market fluctuations) organizational flexibility – relates to the changes of the organizational structures introduced to the information and communication systems structural flexibility – relates to the structure of the economic and social objectives and the combination product-market | Krijnen M.G. (1979) |
| Flexibility is connected with an appropriate scope of the current organization's operations, resulting from the relatively permanent changes in the environment. | Flexibility as the opposite of stability, however, both the extreme flexibility and stability are destructive for the organization | Weick K.E. (1982) |
| Flexibility means keeping options open by specifying broad performance objectives and allowing them for competing with each other. | Flexibility comes down to maintaining reserves of specific resources in order to be used if necessary | Quinn J.B. (1985) |
| Flexibility is considered the ability of reacting effectively to the changing circumstances. | flexibility of action is the ability to take action in order to meet changes in a short time static flexibility is the ability to act despite changes in the operational conditions (allows to maintain stability) | Mandelbaum M. (1990) |
| As a whole, flexibility is described by: the scope of possible states the time necessary to move from one state to the other the cost of changing the state. | flexibility of scope (the static aspect of flexibility) flexibility of reaction (the dynamic aspect of flexibility) | Slack M. (1987) |
| Flexibility is a category closely connected with the time criterion. | immediate flexibility short-term flexibility middle-term flexibility long-term flexibility | Merchant M.E. (1983) Carlsson B. (1989) |

| | | |
|---|---|--|
| Flexibility as determinant of competitive advantage is connected with the need to integrate specific resources, i.e. technologies, structure, processes, people, and financial means. | <i>input</i> flexibility (at the start) <i>output</i> flexibility (at the end), resultative flexibility | Pervaiz K.A., Hardaker G. Carpenter M. (1996) |
| Flexibility is the number of options, potential types of operation that an enterprise may perform ("to attack with them") in specific conditions. | It is connected with an enterprise's ability to: change its position on the market change its game plans (strategic plans) make divestment (close/withdraw from current operations) | Upton D.M. (1994) Harrigan K.R. (1985) |
| Flexibility of an organization is defined as a minimum of its ability to control and its "controllability" - the organization's properties enabling control. | Such understanding of flexibility is connected with: applying the ideas of the control theory the dual character – the ability to control and "controllability" must be balanced | Volberda M.W. (1997) |
| Organizational flexibility means the ability to create options on various levels of the organization, developing means and manners to change these options and providing freedom of choice for particular "actors"/subjects to introduce them. | The key elements of flexibility are as follows: options to act changes freedom of choice | Sushil (2001) |
| Flexibility is the possibility of carrying out transformations of a structure or a property of the system, during which, the system's stationary or dynamic balance is maintained or achieved. | The premise of maintaining the state of balance is stressed. Flexibility is treated as opposite to rigidity. Flexibility is the special form of system efficiency and the measure of its autonomy | Stabryła A. (2005) |
| Flexibility is a category embracing two dimensions of space-time: speed of reaction (or creation) the level of adjusting for all elements of organization separately and all together. | Organizational flexibility is conditioned by: the time of information and decision-making processes for acting the time of gathering and initiating the resources to work | Krupski R. (2005) |
| Flexibility is a multidimensional concept of maintaining balance between the extremes, connected with introducing changes (innovations) providing stability, maintaining competitive advantage and maintaining the ability for further development. | Organizational flexibility requires: agility versatility robustness | Pathak R.C. (2005) |

Source: own work based upon: De Toni, Tonchia 2005, pp. 525; *Organizational flexibility...* 2005; Krupski 2004, pp. 82; Pathak 2005, pp. 59; Pervaiz et al. 1996, pp. 562; Sushil 2001, pp. 53; Volberda 1998, pp. 84; 1997, pp. 169; *Managing an enterprise in the turbulent environment...* 2005, pp. 24.

3. APPROACHES TOWARDS IDENTIFYING THE FLEXIBILITY'S NATURE

While considering the essence of flexibility, one might apply (A. De Toni, S. Tonchia 2005, pp. 526):

- the economic approach,
- the organizational approach.

As far as the economic approach is concerned, for the first time the notion of flexibility was presented in the economic literature by G. Stigler (Carlsson 1989, pp. 181).

He defined flexibility as the property of manufacturing, which allows for applying various variants of production. He suggested that the company is more flexible as regards its production volume, if it has a lower final cost, connected with changes in the production volume, which is illustrated by Fig. 1. Thus, he made flexibility dependent upon the form of a curve of production costs, assuming that the more flat the curve of (unit) costs with slower increase of the final cost, the greater flexibility. G. Stigler also investigated flexibility understood as a company's response to uncertainty connected with the demand fluctuation. With time the notion of flexibility was broadened, taking into consideration all types of turbulences in the firm's environment, not only changes in demand.

One significant element introduced to the research on the economic nature of flexibility, was risk and uncertainty (as understood by F. Knight). Two types of flexibility were distinguished in connection to this criterion (Klein 1984, pp. 48):

- flexibility able to deal with the risk, e.g. connected with continuation of production activities; flexibility comes down to the ability to use the appearing possibilities, i.e. to increase the scale of operations, introduce the new assortment varieties of production, etc. (type I),
- flexibility able to use the conditions resulting from uncertainty, e.g. while taking the new course of business activity, introducing new technologies, etc. (type II),

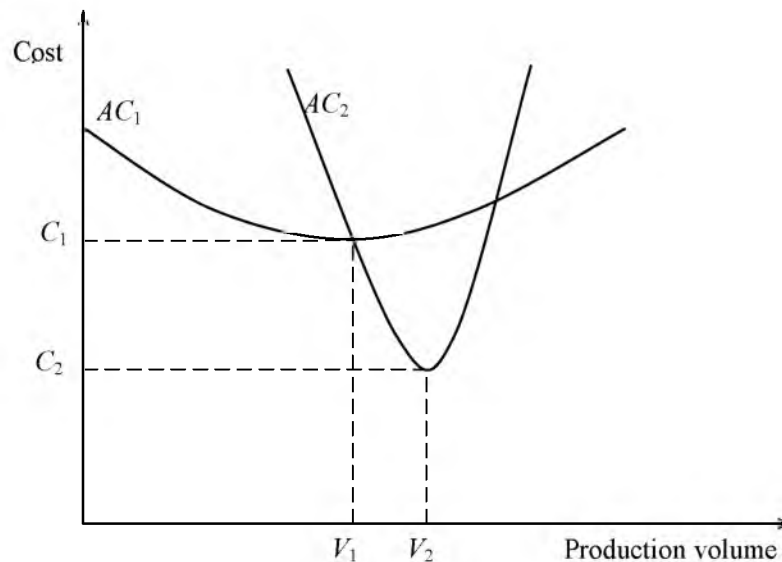


Figure 1. Production flexibility as a cost function

Source: (Carlsson 1989, pp. 181)

The organizational approach concentrates on the organizational models which explain the mechanism of responding to changes taking place in the environment (Jennings, Seaman 1994, pp. 459; Upton 1995, pp. 74). It uses the concepts of organic organization as opposed to mechanic organization, emphasizing at the same time that the organic structures characterize themselves by a relatively higher level of adaptation skills. They enable implementing more offensive operation strategies, connected with the new development options, instead of applying the defence strategy for the position already held on the market. It is also emphasized that the organizational flexibility (of particular organizational units) mostly depends on people (the technical factors are of lesser impact).

While exploring the nature of flexibility, the researchers often refer to the management dimensions distinguished by the theoreticians and practitioners and flexibility is considered as regards:

- operational sphere,
- strategic sphere.

Operational flexibility (Sethi, Sethi 1990, p. 289; De Toni, Tonchia 1998, pp. 1587; Koste, Malhotra 1999, pp. 801) refers to every-day, routine sequences of activities within the same widely understood technology. Most often flexibility is depicted as the basic instrument in fighting uncertainty,

resulting both from the exogenic and endogenic reasons. It may be referred to:

- a single machine/device or technological line,
- a manufacturing plant/factory (business unit),
- particular phases of the manufacturing process (e.g., supply, exploitation, distribution) or to the areas of the functional operations of a firm,
- various types of resources (materials, fixed assets, information, people).

A relatively short time horizon is also the distinguishing criterion for the operational dimension.

A wide semantic spectrum is ascribed to flexibility in the strategic dimension (De Toni, Tonchia 2005, pp. 525). Thus:

- according to Aaker and Mascarenhas – flexibility means the possibility of an organization to adapt to big changes in its environment,
- according to Lau – flexibility refers to an organization's ability to react to uncertainty by adjusting its objectives with the use of extraordinary knowledge and possibilities, possessed by this organization.
- according to Clark – the number of possible strategic options, flexibility is a way of creating conditions within the run business activity,
- according to Hayes and Pisano – flexibility means the speed of changing the priorities of competition within the run business activity,
- according to Upton – flexibility is the diversity of operation types possible for a company to start,
- according to Stalk – flexibility is the speed of moving from one type of activity to the other,
- according to De Toni and Tonchii – flexibility is the way of creating conditions for maintaining an organization's competitive position in the future.

The strategic dimension of flexibility is also, as a rule, identified with a relatively long time horizon, together with a significant change of its to-date concept of business operations, or market position, thus transforming the to-date nature of the organization. This strategic perspective takes into account two dimensions, i.e. the ability to control/rule the elements of the business operations concepts, i.e. technology, structure, culture and the diversity of activities introducing flexibility (mix flexibility). H.W. Volberda (Volberda 1997, pp. 169) perceives flexibility as one of the forms/states possible, both within a routinism (bureaucratization) trajectory and revival trajectory,

meaning going by an organization from the state of rigidity to the state of chaos or vice versa. This process is illustrated by Fig. 2.

This allows to perceive flexibility as the state of maintaining balance, coping in a turbulent environment by introducing changes which broaden the spectrum of impact, but at the same time, maintain control and do not allow an organization to plunge into chaos, i.e. exceed an acceptable entropy. Therefore, these are the changes leading to an increase in the organization rate or elimination of factors disorganizing efficient operations of an organization in the proper time, meaning the negentropy.

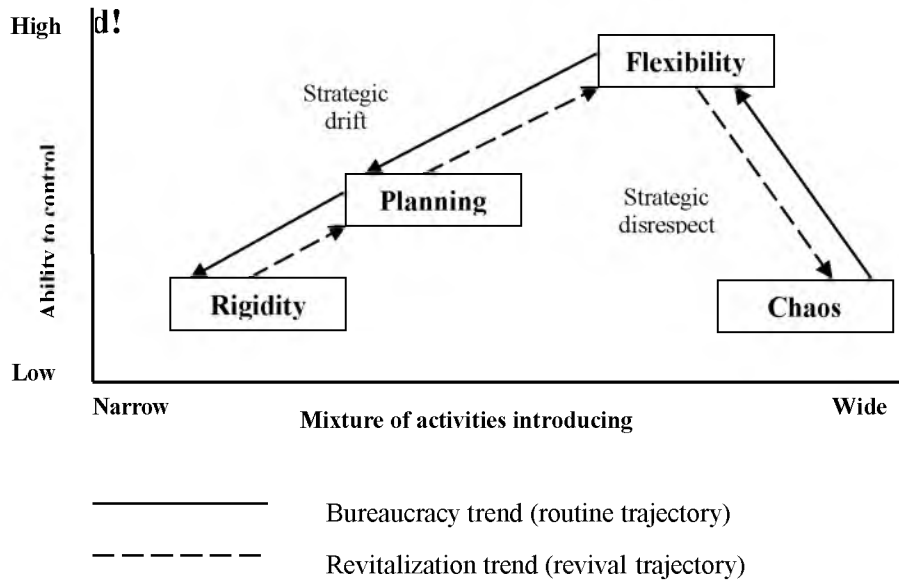


Figure 2. Flexibility as an organized form

Source: Volberda 1997, pp. 174

A way of presenting the complex nature of flexibility, relatively often met in the literature on the subject, is ascribing to flexibility numerous various dimensions (that might be identified as its types). An example of such conceptualization of flexibility is defining ten dimensions of this phenomenon, i.e. flexibility of machine, flexibility of work, flexibility of material flows, product flexibility, operational flexibility, development flexibility, flexibility of operations scale, flexibility of assortment offer,

flexibility of the new/modified products with the use of four constituting elements presented below, (Koste, Malhotra 1999, pp. 79) i.e.:

- the scope/number of options, according to which a given system (organization, its functional area, given resource, process, structure, etc.) may operate,
 - the scope of diversity, which comes down to the diversity level between the possible operating options,
 - mobility, meaning the ability of passing from one state to the other,
 - uniformity, which relates to the impact (as the net amount of changes) on the performance (e.g. productivity, quality, product costs or production cycle).

The above presented approach allows for identifying the complex nature of flexibility through uniform criteria/parameters.

In the light of the said facts, greater flexibility might be ascribed to an organization in which the scope of possible/applied options of operating is appropriately broader and which distinguishes itself by a greater diversity of these activity options, it shows, for example, higher mobility. It should be also noticed, that with such a perspective, there appears a problem, i.e. taking place of trade-off relationship (something for something), between particular elements of a given dimension, as well as between various dimensions of flexibility.

The other authors (Golden Powell 2000, pp. 373) suggested four dimensions for identifying the nature of flexibility:

- time dimension (operational, strategic dimension) connected with answering the question, how much time an organization needs to react properly to changes taking place in its environment or inside it,
- the scope (scale) dimension connected with the number of options/activities that an organization initiates,
 - both for certain and unforeseen changes,
 - the dimension of purposefulness connected with proactive or reactive attitude of an organization towards the changes. Organizations may anticipate changes in their environment, mount an offensive and try to control the changes in their environment. Alternatively, they may react to the changes once they reveal their impact. Then, as some kind of compulsion, the organizations respond to this situation, trying to minimize this impact and counteract its results.
- the focusing attention dimension indicates, if flexibility is gained by utilising the internal factors connected with a given organization, its

potential or by utilizing external factors, the components of this organization's environment.

At the same time, the above-mentioned authors taking into account difficulties connected with quantitative presentation of value of flexibility proposed four parameters (measures) relevant to measure and estimate flexibility, by applying binding financial standards, which comprise as follows:

- effectiveness (efficiency),
- ability to react to changes in proper time,
- versatility (the scope of activities/changes), which an organization is able to undertake within its planning abilities,
- the ability to maintain the economic condition, enabling to react to unpredictable changes in the environment. the above presented measures were referred to the two earlier identified dimensions, i.e. the dimension of time and scope.

It was emphasized that as regards the other two dimensions, i.e. usefulness and centre of gravity, operationalizing – including the choice of measures, requires most of all the situational approach.

The approaches identifying flexibility through ascribing specific dimensions to it, are continuously developed which results in multiplying these dimensions (types) (Beach et al. 2000, pp. 41; Vokurka, O'Leary-Kelly 2000, pp. 485). Simultaneously, some attempts are made to simplify and integrate the sorts, types and dimensions of flexibility distinguished in the literature on the subject. The model of ensuring system flexibility addressed to the practitioners, might serve as an example here (Wadhwa, Rao 2002, pp. 50). The basic dimensions of this model are:

- effectiveness – referred to carrying out proper objectives/tasks,
- efficiency – means proper, i.e. rational implementation of these objectives/tasks.

Therefore, if a system, i.e. organization and its particular components, i.e. resources, processes and structures, encounters an impulse for change, it tries to react to this impulse by displaying the ability to respond, this is connected with introducing changes in its status quo, in order to make reaching its natural aim possible, i.e. its development, possibly maintaining its to-date performance without deterioration (clear destruction), i.e. the level of obtaining the market, economic, financial and social objectives.

An organization, as it is noticed by R. Krupski (2005, pp. 24), may behave according to the three model ways:

- reactively (in case of impulse A, immediate response B),

- anticipating (in case of impulse A, immediate response B, but B is waiting for A),
- creatively (there is no delay between A and B, and at the same time, B is not the response for A).

The decision to response is taken while confronting the importance of the impulse from the environment (or from the inside) with the organization's resource potential, or possibly taking into account the possibilities of access to the foreign resources (financial, material, human, information and relational). Therefore, incredibly important tools of obtaining flexibility are as follows:

- redundancies of single resources (holding them for the appearing occasions),
- diversification of activities and resources, ensuring the ability of continue operations, in conditions of discontinuous turbulent environment, through material and non-material diversity.

Therefore, if the change is of immediate (instantaneous) character, then the costs of lost benefits shall have a relatively low share in the costs connected with it, whereas the risk of using specific resources (material, financial, technical, organizational and other) as tools of shaping flexibility shall be here relatively high.

Whereas, if responding to the impulses for change shall be of reactive character (i.e. it shall be delayed with regard to the moment of compulsion to introduce changes), the costs of the lost benefits shall be appropriately higher with relation to the costs connected with using appropriate tools, i.e. activities introducing flexibility.

4. FLEXIBILITY DISTINGUISHING MARKS – SUMMARY OF LITERATURE REVIEW

While summarizing the discussion so-far on the nature of flexibility and the attempts to reflect it in the more or less developed definitions, approaches, typologies, it should be emphasized that:

- flexibility is a specific buffer for the still growing uncertainty (turbulence) in the operations of an organization. Already today, in the reality of competition and constant pressure to improve flexibility of organizations, the insufficient way of dealing with this uncertainty is keeping excessive, additional resources, specific financial, material and human resources. Flexibility became the guarantor of the organizations functioning

in the future – it is a kind of reserve in the deteriorating conditions for operation by the companies. It is thanks to flexibility that the effects of the scale of activity might be buffered, the scale which is difficult to obtain in the circumstances of increasing changeability of needs and expectations and advancing individualisation of orders.

- flexibility as the ability to deal with uncertainty, is connected with the ability to react to (predictable and unpredictable) changes, through creating and choosing reversible options of functioning and development, as well as creating the ways and means of introducing changes to these options while maintaining continuity of operations and the optimal engagement of resources and time.

- flexibility, referring to the organization's sensitivity and enabling fast adaptation to the changing conditions (external and internal) of its operations, must at the same time ensure the ability to control, limiting the changes resulting from reaction, so as not to lead to chaos and loss of the organization's cohesion conditioning achieving synergic effect.

- flexibility is a potential feature of an organization (system). Using this potential is connected with specific, conscious activity, which might be of a reactionary character, i.e. activities undertaken in the situation of some kind of compulsion (crisis situation) or proactive character, i.e. in the circumstances of increased competition and the possibility to anticipate future conditions.

- organizational flexibility is a configuration of appropriate activities/changes introduced in specific areas, functions, resources, processes, etc. It is constituted by various types of fragmentary flexibilities, connected with each other in a recurrent way.

- organizational flexibility might be achieved by various means – this allows to state that its distinguishing mark is also equifinality; it broadens the possibilities to reach the desired state of flexibility, but at the same time, hinders under the normative approach – formulating recommendations and standards in this area for a given organization.

Therefore, on the one side, in order to use flexibility as a potential property of an organization, there must be ensured specific freedom of making decisions, taking choices, there must be a specific number of options, i.e. the alternative solutions adequate to the changing conditions (and in this sense agility is a dimension/criterion of flexibility). At the same time, however, some control must be ensured, so as introducing specific changes is justified (i.e. would protect an organization against chaos – resulting from excessive number of changes introduced simultaneously),

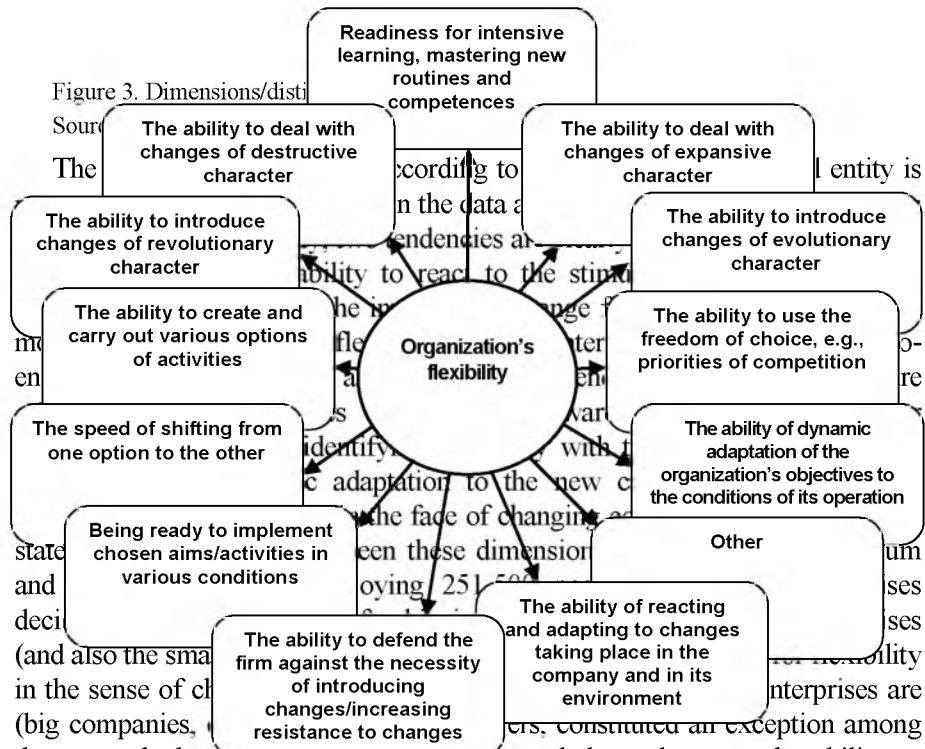
exposing the organization to destruction, it would allow for reviving it (it is also about verifying flexibility as regards effectiveness).

5. UNDERSTANDING FLEXIBILITY BY THE PRACTITIONERS IN THE FIELD OF ECONOMY

Taking into view the difficulties the literature on the subject has with specifying the conceptual framework of flexibility, it was decided that it would be legitimate to find out the opinions of managers/entrepreneurs on their understanding of organizational flexibility, the more so, that they shape flexibility every day in their organizations.

For this purpose the following mode of proceedings was assumed: twelve dimensions/distinguishing marks of flexibility were formulated based upon the above-presented review of literature (cf. Fig. 3). The respondents were expected to choose these of the suggested terms of flexibility's nature, which reflect most its meaning in their understanding. The research was carried out under the research project 1 H02 D0518. In 2007, 34 enterprises were studied with the use of case study methodology. The entities were diversified, among others, as regards:

- size (3 micro-enterprises, 11 small, 13 medium and 7 large enterprises)
- company's profile/industry (construction 5; commercial 5; consulting 5; glass industry 4; machine and electrical industry 3; food industry 3; automotive 2; smelting 2, power industry 2; woodworking industry 1; extractive industry 1 and other 1).
- the range of operations (local – 5.9%, regional – 20.6%, state – 29.4%, international – 38.2% and global – 5.9%)
- phases of an organization's life cycle (beginning of activity – 11.8%, growth and development – 47.06%, maturity – 38.24% and decline 2.9%)
- organizational and legal form (business activity – 5, private partnership – 1, partnership – 2, limited liability company – 24, cooperative – 2).
- market position measured by the market share (below 1% - 3, - 3% - 9, up to 10% - 9, up to 25% - 5, up to 50% - 4, up to 75% - 3, over 75% - 1)
- profitability measured by ROS- *Return on Sales* (below 1% - 1, - 3% - 7, up to 10% - 14, up to 20% - 5, up to 40% - 3, over 40% - 4)



(and also the small firms, constituted an exception among the researched companies) for maintaining a balance between the ability to create and implement various options of activity and the ability of fast moving from one option to the other, however, for small firms, it is still significant to be able to create the new options.

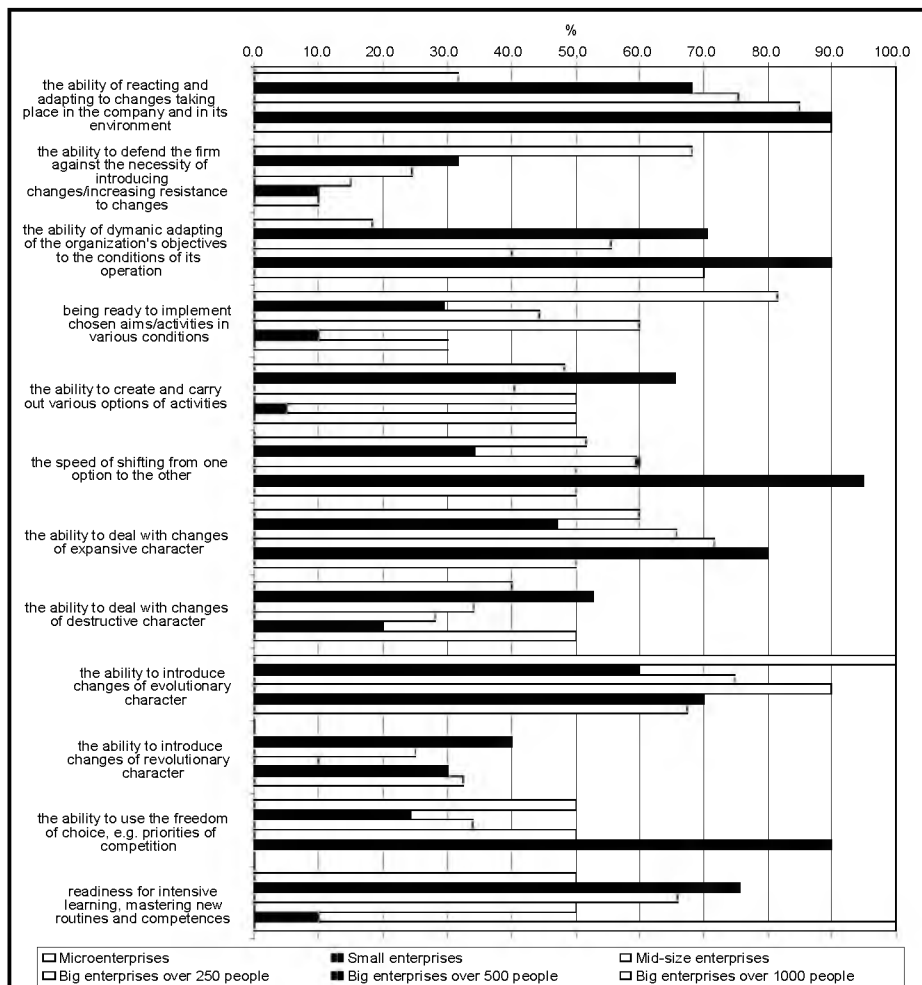


Fig. 4. The nature of flexibility – the distribution of responses according to the entity's size criterion

Source: own work

The results concerning the direction of the introduced changes (progress, regression) are more diversified. For medium and large companies (employing up to 1000 people) the essence of flexibility is mainly dealing with expansive changes, whereas for large ones (employing over 1000 people) and for small ones, flexibility most of all comes down to the ability to introduce changes of a regressive character. If the rate of introducing changes is taken into account, all the research subjects, independent of their size, acknowledge that the ability to introduce changes in an evolutionary

way is natural for flexibility (in micro-enterprises this was indicated as the only alternative to introduce changes). Revolutionary changes are perceived as supplementary, of diversified share, small enterprises allow for their share of up to 40%. Whereas, while deciding what is more significant for the flexibility – the ability to use the freedom of choice or rather the ability to learn and master the new routines, it turned out that the group of large enterprises decidedly opted for flexibility understood as the readiness to constantly learn and master the new competences – whereas for the small and medium enterprises approx. 24-34% of them, flexibility is connected with the ability to use the freedom of choice.

The analysis of the layout of the received responses as regards the scope of impact, allows noticing a clear correlation between the scope of the company's operations and treating flexibility as the ability to react immediately to changes taking place in the company's environment and inside it. At the same time, the narrower the scope of activity, the more the company identifies flexibility with the activities of defending against the necessity to introduce changes.

A similar correlation takes place as regards the change and maintaining to objectives: the broader the scope of activity, the greater the tendency to change objectives, i.e. their dynamic adaptation to the operating conditions, whereas in the companies of a smaller scope of activity, flexibility more often means fulfilling chosen objectives in the changed operating conditions.

For global companies flexibility to a greater extent means the speed of shifting from one option of activity to the other, whereas companies of a narrower scope of activity identify it with the ability to create alternative options of operating.

As regards directing the activities for the benefit of flexibility, it is correlated for the researched companies, with the scope of activity in the following way: with widening the scope of activity, the share of activities of the expansive character clearly grows, less significant is the ability to deal with reducing the activity and regressive changes. A clear correlation can be observed between the scope of activity of the subjects and the dimension of flexibility – the ability to use the freedom of choice, which is connected with the complexity of the organization's operations and thus increasing the decision-making problems.

The analysis according to the criterion of the phase of the existence cycle, directs attention to the fact that in the beginning phase of activity, flexibility is important in the dimension of defensive activities, increasing the resistance of the organization to the appearing impulses to changes, whereas

the share of the ability to respond immediately to the impulses to changes in the environment and inside of the organization increases, together with moving to the further phases of the cycle. The companies in the beginning phase of the development cycle are clearly oriented to “being flexible” as regards maintaining the chosen objectives, whereas those in the growth and development phase are, which can be understood, more oriented to introduce changes in these objectives.

It is characteristic that the companies in the decline phase clearly perceive flexibility as the ability to create alternative options of activity, whereas the companies in other phases of development rather recognize the primacy of the ability to quickly shift from one option to the other. It is similar as regards the dimensions of flexibility connected with implementing the destructive changes (such understanding of flexibility is the domain of companies in the decline phase) and changes of a progressive character (these ones are indicated by the companies in the earlier phases and the share of these changes grows weaker with moving from the beginning phase to the maturity phase). With reference to the evolutionary/revolutionary character of changes structuralizing flexibility, a relatively large share belongs to the revolutionary changes in the companies in the growth and development phase, which seems to be natural. Evolutionary changes dominate in the phase of developing the activity and maturity phase.

For companies in the beginning phase of operating, the ability to learn and master new competences seems to be a significant dimension of flexibility, whereas for the mature companies, the ability to use the freedom of choice, e.g. priorities of competition becomes important.

While analyzing the dimensions of flexibility from the viewpoint of the organizational and legal forms of the researched entities, it is worth paying attention to the fact that the entities existing as a one-person business, declared that the ability to react immediately to the impulses to change and the ability to defend the company and increase its resistance to changes is equally important for them, whereas for the more complex forms, such as the limited companies and cooperatives, decidedly more important is the dimension of reacting to the changes.

As regards the most numerous group among the research entities, i.e. limited liability companies, it should be emphasized that they equally perceive the two further dimensions of flexibility, i.e. the ability to change objectives or only the methods with relation to the earlier chosen objectives (similarly to the entities running business as a one-person business). All organizational and legal forms (except for business activity)

indicate a high convergence in noticing the next two dimensions which means that for the majority of them, the ability to create and shift from one option to the other is significant. In general, all organizational and legal forms perceive flexibility as the ability to integrate changes of the progress and regression character, evolutionary and revolutionary changes and the proportions in this area are highly diversified. They also notice that “being flexible” is unavoidably connected with the necessity to learn and master new abilities.

The analysis of flexibility dimensions taking into account the criterion of market position indicates a clear correlation between the growing market share and growing share of the ability to react to changes, which manifests itself in a decreasing interest to defend the company against introducing changes. Companies with a large market share also give clear priority to the flexibility understood as the ability to change objectives (instead of changing the ways of reaching the chosen objectives). As far as the other dimensions are concerned, they do not present any regularity while investigating their connection with the market position.

6. SELF-EVALUATION OF ENTERPRISES AS REGARDS MANAGING FLEXIBILITY

In order to enable self-evaluation of the researched enterprises, an attempt was made to recognize the level of maturity in managing flexibility; for this purpose a seven-grade scale was used, according to which (Wadhawa , Rao 2002 pp. 45):

- level 0 (ignoring) – this is the state of underestimating the issue of flexibility
- level I (qualitative) – this is the state of realizing the need and nature of flexibility, without any clearly directed decisions/activities as regards shaping this property of organization
- level II (quantitative) – the state of readiness to identify flexibility of particular components of organization and to estimate its potential influence on performance
- level III (reactive control) – means the ability to use maximally the existing solutions for maintaining the activity/performance of the company
- level IV (managing flexibility) – means the ability to create (plan) and control the activities introducing flexibility, in order to maintain the concept of business activity

- level V (proactive managing of flexibility) – means the state of readiness to influence the premises and reasons for flexibility, which is connected with undertaking activities changing the to-date concept of business activity

- level VI (flexible “flexibility”) – means the state of mastering flexibility.

As results from table 4 presenting the distribution of responses given by the researched enterprises, almost half of the entities declared that they are on the level IV, i.e. managing flexibility in such a way so as to enable maintaining to-date concept of business activity, which indicates a relatively high involvement of companies in flexibility. Approximately one third of the researched enterprises evaluated their involvement at the level III, i.e. maintaining reactive control over the impulses to change in order to maximize the companies’ performance applying the existing solutions. Five entities qualified their maturity in this area at the level I, i.e. appreciating the need of flexibility but without clear direction of their activities to shape this attribute of organization. Only one firm admitted ignoring the need of being flexible. None of the studied companies stated that it reached the state of full command over its flexibility and only one said that its operations can be qualified as level V, i.e. proactive managing of flexibility.

Table 4

Self-evaluation of the level of advancement in managing flexibility

| The level of maturity in managing flexibility | level 0 | level 1 | level 2 | level 3 | level 4 | level 5 | level 6 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Responses in total | 1 | 5 | 2 | 10 | 15 | 1 | 0 |
| % share of responses | 2.94 | 14.71 | 5.88 | 29.41 | 44.12 | 2.94 | 0.00 |

Source: own work

While analysing the responses as regards the size criterion, it might be noticed that in all groups of entities, i.e. small, medium and large, ca. 50% of the researched companies are placed on the IV level of maturity in managing flexibility. In the industry distribution, consulting companies were placed on a relatively high level, followed by commercial, automotive and glass industry. They were opposed by construction, as well as machine and electrical companies, ones representing rather traditional sectors of economy.

As regards the scope of activity criterion, the companies of national, international and global scope, were placed appropriately higher on the scale than local or regional companies.

Among the companies in the growth phase, ca. 87% are placed above II level of maturity in managing flexibility, whereas only ca. 68% of companies in the maturity phase reach the levels III and IV.

The respondents from the researched enterprises used the scale from 1 to 3 and evaluated the flexibility of their organization as a whole, stating that it is:

- by far insufficiently flexible (1 point)
- sufficiently (averagely) flexible (2 points.)
- accomplished in terms of flexibility – in its industry and outside it (3 points).

Fig. 5 presents the results of this self-evaluation. As it is presented by the results, ca. 58.8% of the companies regarded their flexibility as sufficient and 26.5% of them think that they are accomplished in this field. Three small companies, one medium and one large company regarded themselves as insufficiently flexible.

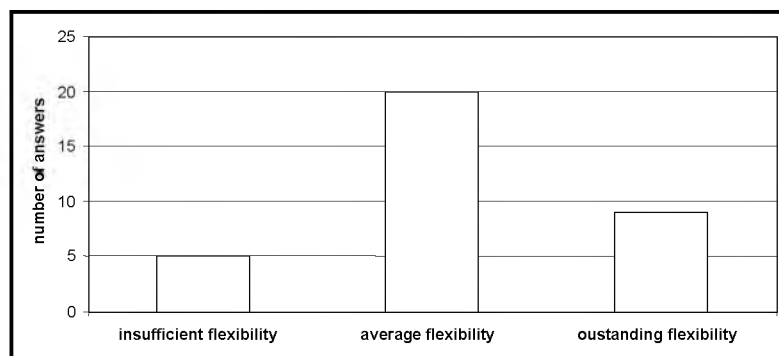


Figure 5. Self-evaluation of enterprises' flexibility

Source: own work

With regard to the industries, the companies of the consulting and automotive industry evaluated their flexibility the highest, the companies of traditional profile of activity, i.e. construction, machine and electrical, as well as power supply, considered their flexibility as insufficient.

With regard to the scope criterion, the companies of wide scope of activity, i.e. global and international, regarded themselves as sufficiently accomplished in dealing with flexibility.

All companies in the growth phase regarded themselves as sufficiently flexible or accomplished with regard to flexibility (no 1 point evaluations).

The companies of a relatively weak market position (market share below 10%) and also 3 out of 22 companies with exclusively Polish capital regarded themselves as insufficiently flexible.

The same scale (1-3 points) was applied to evaluate particular functional areas, processes and resources of the researched companies. Fig. 5 presents the distribution of the evaluation of the chosen areas, processes and functions. The highest number of responses on the level of 3 points (i.e. 25) was noted for the market. Thus, once again it was confirmed that the most flexible area is the contact of the enterprise with its market surrounding. Only two companies imputed themselves of being insufficiently flexible in this area. A little smaller flexibility was noted down for the basic processes (20 enterprises decided that they have the above-average flexibility, only 4 of them that they have insufficient flexibility). Taking into account the total number of responses for 2 and 3 points (i.e. the sufficient and distinguishing level), one might notice that the evaluation of flexibility in the area of financing activity, supply and managing human resources, places itself on the same level, i.e. 26-25 points. Flexibility of the organizational structure solutions and auxiliary processes is the weakest in this total evaluation. The highest number of sufficient responses was noted for the function of supply and auxiliary processes (17 each on the level of 2 points). Whereas the weakest evaluation of flexibility was noted for the structural solutions and managing human resources (respectively 12 and 9 responses for insufficient flexibility in this area).

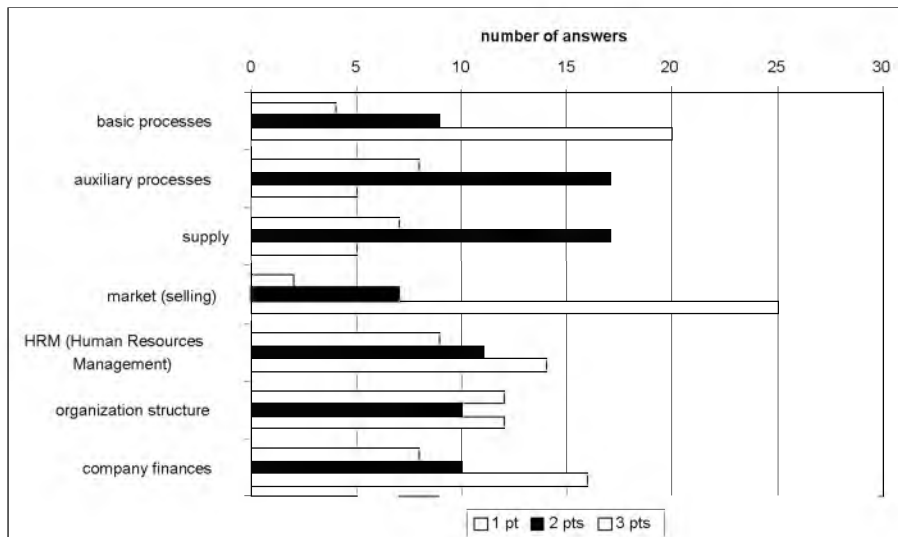


Figure 6. Self-evaluation as regards fragmentary flexibilities

Source: own work

While analysing the distribution of evaluations with reference to particular categories of enterprises, according to the size criterion, it is difficult to ascribe to them the areas, resources and functions in an unequivocal way which indicate higher or lower flexibility. The fragmentary flexibilities are diversified here, irrespectively of the enterprise's size.

Taking into account the criterion of industry, it must be noted that in the areas of the highest flexibility, i.e. in the basic processes and the market, the highest number of responses relates to the commercial and consulting companies; also with relation to other fragmentary flexibilities, i.e. in the area of financing, managing human resources they indicated a relative advantage over the other industries.

Flexibility in the area of the market is the most highly correlated with the scope of activity, whereas considering the phases of the company's life, it can be noticed that the companies in the growth and development phase note relatively the highest number of responses, on the level of accomplishment in all areas of fragmentary flexibilities (i.e. 12 in the basic processes, 15 in the market, 9 in managing human resources and in financing the activity and 7 for structural solutions) and at the same time the companies in maturity phase show a relative advantage of evaluations on the average level (2

points) with relation to such fragmentary areas as: supply, market, managing human resources, which might be carefully interpreted as decreasing flexibility with moving to a more stabilized phase of functioning of an enterprise.

While analysing the distribution of evaluations taking into account the market position, one might advance a thesis, that with regard to the researched companies, the increasing market position (measured by the increase in the market share), somehow "forces" flexibility, which is revealed by the lack of evaluations "insufficient flexibility" for the basic processes, in the area of market and financing the activity of enterprises.

It is also worth noting that companies with foreign capital in practice do not note (or note occasionally) evaluations insufficiently flexible with regard to almost all areas/sections of fragmentary flexibilities in comparison to companies with exclusively Polish capital, where this distribution of evaluations is more uniform, which means that flexibility in particular areas is more diversified.

During investigating the flexibility of the researched companies, an attempt was also made to recognize to what extent the activities introducing flexibility, express conscious orientation, clear aspiration etc.

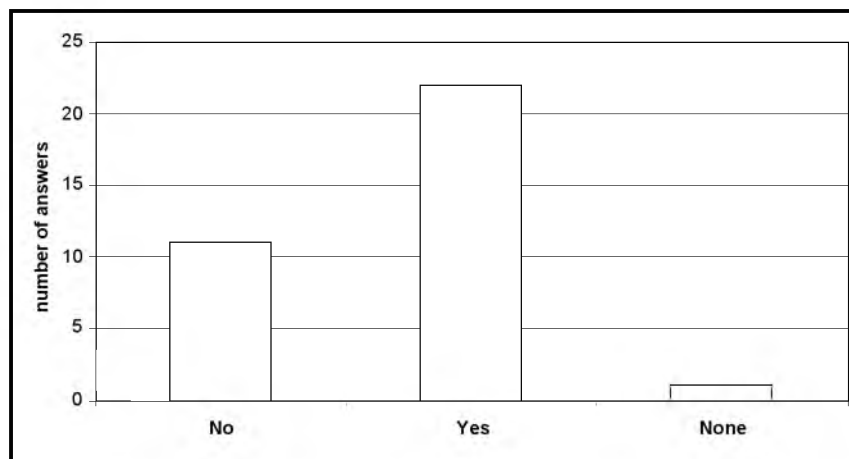


Figure 7. Directing enterprise's operations towards flexibility

Source: own work

It turned out that ca. two thirds of the entities clearly direct their operations towards flexibility (cf. Fig. 7). As results from the collected data,

a relatively strong impact in this area takes place in small and medium companies. While analyzing the collected data with the view of industry, one might note that it does not take place only for companies representing the power industry, whereas companies of other industries, even such as smelting, extracting and woodworking industry, clearly direct themselves towards being flexible. Such an orientation applies decidedly to the researched companies of the national scope (9 responses out of 10). It is also very clear for the companies in the growth and development phase (out of 15 subjects, 12 of them decidedly chose the direction of making their operations flexible).

Such a strong interest in this orientation is correlated with the market position (the bigger the market share, the more clear interest in this notion).

CONCLUSION

The analysis of the conceptual framework of flexibility in an organization carried out in this paper indicates that despite relatively numerous attempts to specify this notion, this is not an easy task. Complex and multidimensional nature of flexibility does not favour its unequivocal understanding. As results from the diagnosis presented above, flexibility places itself between rigidity and chaos and might be treated as a source of negentropy – the ability to increase through organizing its agility and the level of ordering. Thanks to flexibility, it is possible to buffer the results the effect of scale of activity, difficult to attain in the reality of increasing changeability. Flexibility as the ability of the organization to deal with uncertainty through skilful reaction to changes, enables fast adaptation, but at the same time is the manifestation of control/mastering this changeability. It is a potential feature of an organization, so in order to implement it, it requires conscious activity, and at the same time, specific scope of decision making freedom. Organizational flexibility consists of numerous, mutually connected fragmentary/functional flexibilities, i.e. relating to particular resources, functions, processes, structures etc.; therefore, it is a configuration of various components allowing for adjustment of an organization to dynamically changing conditions of activity, therefore the equifinal reaching of the desired organizational flexibility is possible.

An attempt to verify the conceptual framework of flexibility by the practitioners in the field of economy, who implement the imperative of being flexible every day in their organizations, confirmed that it is a polyformic

phenomenon, multi-notion, and its final configuration (including the character of changes) is determined by the whole series of context variables of the organization, i.e. its size, industry specificity, market position, development phase, scope of activity, financial condition, organizational and legal form, etc. – which individualizes this category and does not allow for the efficient formulation of standard recommendations, algorithms, etc.

As was confirmed by the research (in the form of self-evaluation) carried out in the companies, despite the necessity to apply the situational approach, individual operationalizing of the activities introducing flexibility, these entities indicated relatively deep involvement for shaping flexibility, giving particular priority to flexibility in the area of market and implementing the basic processes.

To conclude, it is easy to notice that flexibility is the example of a postmodernist category in management, difficult to define, hindering in this way the process of standardizing, formulating universal recommendations, and at the same time it undergoes a far reaching individualization in the process of learning good organization, applying the knowledge available on the mechanisms of this phenomenon, its distinguishing marks, etc., which justifies the hardships connected with further exploring the nature, symptoms and determinants of this phenomenon. It seems that particularly important would be a continuation of the next research problems:

- measurement of organizational flexibility,
- relations between flexibility and efficiency,
- methodology of both diagnostic and improvement organizational flexibility.

REFERENCES

- Bateson, G., *Ecology and Flexibility in Urban Civilization Chandler*. New York, 1972
- Beach, R., Muhlemann, A. P., Price D. H. R., Paterson, A., Sharp, J. A., *A review of manufacturing flexibility*, "European Journal of Operational Research", Vol. 122, no. 1, 2000.
- Carlsson, Bo., *Flexibility and theory of the firm*, "International Journal of Industrial Organization", Vol. 7, no. 2, 1989.
- Conboy, K., Fitzgerald, B., *Towards a Conceptual Framework of Agile Methods in: XP and Agile Conference*, pp.25, Alberta, Canada 2004 (15-18 Aug.).
- Courtney, H., Kirkland, J., Viguerie, P., *Strategy under uncertainty*, "Harvard Business Review" Vol. 75, no. 6, 1997.

- De Toni, A., Tonchia, S., *Definitions and linkages between operational and strategic flexibilities*, "Omega. The International Journal of Management Science", Vol. 33 no. 9, 2005.
- Evans, J. S., *Strategic flexibility for high technology manoeuvres: a conceptual framework*, "Journal of Management Studies", Vol. 28, no. 1, 1991.
- Golden, W., Powell, P., *Towards a definition of flexibility: In search of the Holy Grail?*, "Omega. The International Journal of Management", Vol. 28, no. 4, 2000.
- Gustavsson, S., *Flexibility and productivity in complex production processes*, "International Journal of Production Research", Vol. 22, no. 5, 1984.
- Jennings, D. F., Seaman, S. L., *High and low levels of organizational adaptation: an empirical analysis of strategy, structure and performance*, "Strategic Management Journal", Vol. 15, no. 6, 1994.
- Klein, B. H., *Prices, Wages and Business Cycles. A Dynamic Theory*. Pergamon, New York 1984.
- Koste, L. L., Malhotra, M. K., *Theoretical framework for analyzing the dimensions of manufacturing flexibility*, "Journal of Operations Management", Vol 18, no. 1, 1999.
- Krupski, R., *Zarządzanie strategiczne w nieprzewidywalnym otoczeniu [Strategic management in unpredictable environment]* "Przegląd Organizacji", no. 3, 2003.
- Krupski, R., *Przedsiębiorstwo w ruchu w: Zmiana warunkiem sukcesu [Firm is running in: Change is prerequisite for success]* ed., J. Skalik PN AE no 1045, AE Wrocław, 2004.
- Krupski, R., [ed.], *Zarządzanie w turbulentnym otoczeniu. Ku superelastycznej organizacji [Management in turbulent environment. Towards super flexible organization]*. PWE 2005.
- Osbert-Pociecha, G., *Elastyczność organizacji – atrybut pożądaný a niezidentyfikowany [Flexibility of organization – the attribute which is desirable but unrecognizable]*, "Organizacja i Kierowanie", Vol. 116, no. 2, 2004.
- Pathak, R. C., *Flexibility – Thinking shift for organizational excellence*, "Global Journal of Flexible Systems Management", Vol. 6, no. 3-4, 2005.
- Pervaiz, A. K., Hardaker, G., Carpenter, M., *Integrated flexibility – Key to competition in turbulent environment*, "Long Range Planning", Vol. 29, no. 4, 1996.
- Pramod, M., Garg, S., *Analysis of flexibility requirements under uncertain environments*, "Journal of Modelling in Management", no. 3, 2006.
- Rokita, J. [ed.], *Elastyczność organizacji [Flexibility of organization]*. Wyd GWSH 2005
- Sethi, A. K., Sethi, S. P., *Flexibility in manufacturing: a survey*, "International Journal of Flexible Manufacturing Systems", Vol. 2, no. 4, 1990.
- Stalk, G., Ewans, P. H., Shulman, E. L., *Competing on capabilities: The new rules of corporate strategy*, "Harvard Business Review", Vol. 70, no. 2, 1992.
- Sushil, *Enterprise Flexibility*, "Global Journal of Flexible Systems Management", Vol. 2, no. 4, 2001.
- Sushil, *Flexibility Metaphors*, "Systems Research and Behavioral Science", Vol. 18, no. 6, 2001.
- Upton, D. M., *What really makes factories flexible?*, "Harvard Business Review", Vol. 73, no. 4, 1995.

- Vokurka, R. J., O'Leary-Kelly, S. W., *A review of empirical research on manufacturing flexibility*, "Journal of Operation Management", Vol. 18, no. 4, 2000.
- Volberda, H. W., *Building flexible organizations for fast-moving markets*, "Long Range Planning", Vol. 30, no. 2, 1997.
- Volberda, H.W., *Building the Flexibility Firm. How to Remain Competitive*. New York, Oxford University Press Inc. 1998.
- Wadhwa, S., Rao, K. S., *Framework for a Flexibility Maturity Model*, "Global Journal of Flexible Systems Management", Vol. 3, no. 2-3, 2002.

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