SYSTEMS THINKING AS A COMPETENCE IN THE LEADERSHIP PARADIGM

Aelita Skaržauskienė
ISM University of Management and Economics

An effect of systems thinking is relevant in the modern world which generates more information than it is possible to control and creates interrelations that are difficult to forecast. Today’s businessmen, managers and leaders need not only skills to act in an unstable and unpredictable environment but also to understand the reasons of this. The paper aims to answer the question of how the principles of systems thinking help the leader to achieve higher quality in his activity and to find new productive forms and tools for organisation management.

Keywords: systems thinking, intelligence competencies, leadership performance.

Introduction

An effect of systems thinking is relevant in the modern world which generates more information than it is possible to control and creates interrelations that are difficult to forecast. Today’s businessmen, managers and leaders need not only skills to act in an unstable and unpredictable environment but also to understand the reasons of this. The creators of systems thinking methodology Bertalanffy (1969), Beer (1975), Forrester (1961, 1975), Capra (1988), Senge (1990), Ackoff (1999), Wheatley (1994), Haines (1998), Warren (2000, 2002); Sterman (2000), James (2003), Gharajedaghi (2006) apply widely systems thinking principles in management praxis.

The recent theories of the leadership stress the significance of holism, intuition and creativeness and systems conception of the world for a successful application of the leader’s potential. The management of the organization is an object and space of human creative work. Leadership is closely related to the conception: reflection, expertise and thinking. Thinking includes manipulation of information, formation of concepts and ways of problem-solving, searching for reasons and making decisions. Thinking is a means of every leader in his daily activity, therefore, with a sight to the future it is worth to consider a question whether more efforts should be put to a study of thinking rather than of a substance. One of the ways to improve the quality of results of an activity is to enhance the quality of thinking: how you think, is how you act, is how you are (Haines, 1998).

The scientific problem of the research paper – what is the role of systems thinking in leadership. The aim of the paper is to disclose the relationship between systems thinking as a competence and leadership performance.
Current status of the theoretical and empirical investigation


Literature linking leadership and systems thinking is thematically widely developed but usually limits itself to a pragmatic or a model level (Ellis, 1995; Senge, 1990, 2007; Srinavas, 1995). Many authors emphasize the importance and relevance of systems thinking in the leadership, however, theories are difficult to be summarized, since they are based on different attitudes to both systems thinking and leadership.

Although systems thinking is treated as a very valuable competence of a leader, it has not been investigated enough in the context of leadership paradigm. Much has been written about the relationship between emotional intelligence and leadership performance, however the role of systems thinking is not empirically disclosed. There are only a few empirical studies, which found out that leadership performance is an outcome of systems thinking. The nature of relationships between systems thinking and other competencies of a leader remains unknown. Moreover, there are almost no validated instruments to measure systems thinking.

Concept of competency

A theory of performance is the basis for the concept of competency. The theory used in this approach is a basic contingency theory. Maximum performance is believed to occur when the person’s capability or talent is consistent with the needs of the job demands and the organizational environment (Boyatzis, 2007). In this paper leadership competencies are seen as those universal qualities that enable individuals to perform their job, no matter what functional area their job description represents, or what organisation they come from (Goleman, 1998, 2002; Boyatzis, 2007).

Different authors or studies (Rosete, 2005; Spencer, 1993; Kotter, 1999; Goleman, 1998, 2002; Boyatzis, 2007) tend to include abilities from three clusters in a set of competencies that can been shown cause or predict outstanding leader performance:

- cognitive competencies, such as systems thinking, pattern recognition;
- emotional intelligence competencies, including self-awareness and self-management competencies;
• social intelligence competencies, including social awareness and relationship management.

Competencies are a behavioral approach to emotional, social and cognitive intelligence (Boyatzis, 2007). An integrated concept of intelligence competencies offers a framework for describing human dispositions and offers theoretical structure for the organization of personality and linking it to the theory of action and job performance. Goleman (1998) defined a cognitive intelligence competency (such as systems thinking) as an ability to think or analyze information and situations that leads to or causes effective or superior performance.

**Systems Thinking as a Cognitive Intelligence Competence**

Kets de Vries (2004, p.4) summarized various leadership theories and explained that all those theories stress the importance of emotional and social intelligence competencies of a leader. The relationship between social and emotional intelligence competencies and leadership has been investigated by many scholars (Cherniss, 2000; Feisit, 1996; Prati, 2004; Goleman, 2000; Prewitt, 2004). The existence of relationships between those constructs has been proven empirically (See: Figure 1). The competencies impact organization performance indirectly through construct of leadership performance, for example the better quality of interaction between a leader and follower influences the leadership performance, the leadership performance has impact of positive organization climate, which affects organization performance.

The new theoretical model (Figure 1) rests on the concept of leadership, which encompasses dimensions of leadership delineated in modern theory of leadership (Fry, 2003; Zohar, 2004; Csikszentmihalyi, 2003; Stout, 2002; Kets De Vries, 2004; Depree, 2004): personal leadership, relationship leadership, organizational/strategic leadership). Therefore the leadership performance is measured through the content of the leadership dimensions: as an ability to change the organisation, as a relationship quality between leader and followers, as a capability to create a vision and to motivate followers to follow it, as a potency to initiate and implement organizational changes.
Summing up it can be concluded that systems thinking as a competence is underexplored. The impact of systems thinking to leadership has not been tested empirically, consequently this study focuses on question how is systems thinking as intelligence competence related to leadership performance.

**Research methods**

This paper follows quantitative research approach and the predetermined questionnaire rests on the two research instruments: ESCI-U SAQ (Emotional and Social Competency Inventory, Self Assessment Questionnaire, Goleman, Boyatzis, 2007) and LCP SAI (Leadership Current Performance Self Assessment Instrument, Stephen Haines&Partners, 2007). The assessment instrument LCP measures the outcome, current performance of leadership, i.e. the degree of achievement of particular leadership indicators.

Emotional, social and cognitive intelligence competencies were treated holistically and were measured using five-point Likert scales, while leadership performance were assessed using ten-point Likert scales. The SAQ is 72 items questionnaire in which the participants are asked to assets the frequency with which they demonstrate each behavior.

The total sample of 201 consists of two subsamples: retail trade (103 respondents) and manufacturing (98 respondents). The sample was selected randomly using the list of respondents formed by Lithuanian Department of Statistics. The logic of
such sample structure was determined by great differences of management practices in the two industries.

In this survey respondents mainly from middle-size and large Lithuanian enterprises were surveyed using web-based questionnaire. Large enterprises (number of employees more than 250) account for 18.4% of total sample. The return rate of this survey was 75% and can be treated as a good one. Data was analyzed using statistical software package SPSS. Firstly, exploratory factor analysis was employed to assess dimensionality of scales.

Results

The regression analysis found out that systems thinking has effect on the all three dimensions of leadership performance (Personal, Relationship and Organizational/strategic leadership). The strongest antecedents are process orientation (CI) and system logic (CI), see Figure 2.

![Figure 2. The impact of Systems Thinking competencies on leadership performance](image)

It was found out that the model has more explanatory power in manufacturing industry. Regression analysis revealed that in manufacturing industry 52.5% of lead-
ership performance can be explicated by dimensions of intelligence competence. The model has less explanatory power in retail trade industry (adjusted $R^2=0.27$).

One-way ANOVA was employed to test the influence of leadership performance level on mean of system thinking competence. The results demonstrated that system thinking competence increases when level of leadership performance raises and therefore there exists linear trend relationship ($F=8.23$, df=1, $p=0.00$). Multiple comparisons of means using Hochberg GT2 method revealed that there exist statistically significant differences of system thinking competence between the following levels of leadership performance: first and third, second and third.

<table>
<thead>
<tr>
<th>Levels of leadership performance</th>
<th>N</th>
<th>1 group</th>
<th>2 group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (OLR ≤ 7)</td>
<td>6</td>
<td>3.5397</td>
<td></td>
</tr>
<tr>
<td>2 (7 &lt; OLR ≤ 8)</td>
<td>44</td>
<td>3.6834</td>
<td>3.6834</td>
</tr>
<tr>
<td>3 (OLR &gt; 8)</td>
<td>48</td>
<td></td>
<td>3.8720</td>
</tr>
<tr>
<td>P</td>
<td>.393</td>
<td>.176</td>
<td></td>
</tr>
</tbody>
</table>

Note: Hochberg GT2 method

Conclusions

1. This paper evaluated competence of systems thinking in the context of leadership. A conceptual model of relationships between intelligence competencies and leadership performance was developed in order to explore how the latter construct is influenced by the former construct. One of many aspects of the leadership paradigm was tested empirically. A conceptual model of relationship between intelligence competencies and leadership performance was empirically validated.

By modeling the intelligence competences effect on leadership performance all hypotheses about impact of systems thinking dimensions (dynamic thinking, interactivity, systems logic, process orientation, continuous learning and understanding of mental models) on all three levels (personal, relationship, organizational/strategic) of leadership were accepted.

However, systems thinking is most important and valuable in organizational/strategic dimension of leadership. This dimension of leadership performance is explained exceptionally by competencies of systems thinking. The impact of Process orientation has the strongest effect on leadership performance in comparison with another competences.

2. The model was tested empirically in two industries. Both in retail trade and manufacturing industries systems thinking has effect on leadership performance. However, in manufacturing industry the model has more explanatory power and effect of systems thinking on leadership performance is stronger. The effect is stronger es-
especially on organizational/strategic leadership performance. New manufacturing tendencies demand global competitive strategies. Management in manufacturing must be flexible. It is important to elaborate manufacturing management systems in order to shorten response to changing market conditions.

Manufacturing oriented to process management and efficiency is more dependent on globalization. Results of executives in manufacturing industry can be improved through understanding of principles of process orientation, systems logic, dynamical thinking and use of this knowledge in practice.

The model has less explanatory power in retail trade industry. The antecedents of leadership performance in this industry are conflict management, communication and process orientation. The latter construct is the only dimension of system thinking having influence on leadership performance.

These conclusions emerges logical from the management peculiarity of retail companies: it is important to organize service facilities in retail industry, to attract customers, to apply different strategies of sale, to implant modern payment systems. That kind of management requires social intelligence competences.

On other hand, retail trade is dependent from market cycles and equilibrium between demand and supply and integration to market. In this industry warehousing, stocks and logistics management are important and therefore results of executives in this industry could be improved by understanding of the following principles of systems thinking: delay, stock and flow, effect, grow barriers identification etc.

It is possible to make an assumption that demand of competence of systems thinking is influenced by peculiarities of management. Possibly competence development is impacted by work experience and nature of activity. However, these assumptions requires further empirical research.

3. The research revealed that the predictors of leadership performance are as follows: process orientation (CI), influence and change catalyst (SI), and conflict management (SI). To extend these findings into the arena of executive coaching, it can be inferred that a similar set of competencies would help to understand why some leaders are more effective than another.

One-way ANOVA was employed to test the influence of leadership results level on mean of cognitive intelligence competence. It was found out that mean of cognitive intelligence competence significantly differs across the levels of leadership. When level leadership performance increases, mean of cognitive intelligence competence also increases. It is possible to maintain that Lithuanian executives insufficiently uses the potential of systems thinking because more than half of respondents belong to a lower average group.

Following the result of empirical research, it can be concluded that development of systems thinking competence and retention of cognitive abilities can significantly improve both efficiency of leadership and efficiency of organisation.
References

SISTEMINIS MÂSTYMAS KAIP KOMPETENCIJA LYDERYSTĖS PARADIGMOJE

Aelita Skaržauskienė
ISM Vadybos ir Ekonomikos Universitetas

Santrauka

Sisteminio mâstymo poreikis aktualus šiuolaikiniame pasaulyje, kuris generuoja daugiau informacijos, negu įmanoma suvaldyti, bei sukuria tarpusavio ryšius, kuriuos sunku nuspręti. Vado-vams, verslo lyderiams svarbu ne tik išmokti veikti sunkiai prognozuojamoje aplinkoje, bet ir suprasti pasaulio sudėtingumo priežastis. Straipsnyje nagrinėjama mokslinė problema, kuo sisteminis mâstymas, kaip kompetencija, vertingas lyderystėje. Darbe siekiama atsakyti į vadybai aktualų klaušimą, kaip sisteminis mâstymas padeda lyderiui kokybiškiau, tiksliau veikti ir pamatyti naujas, produktyvias organizacijos valdymo formas ir priemones.

Remiantis mokslinės literatūros analize bei sinteze sukurtas koncepcinis intelekto kompetencijų/lyderystės rezultatų priežastinių ryšių modelis, kuris buvo empiriškai įvertintas tiriant dviejų verslo, gamybinų ir prekybinų organizacijų, aukščiausio lygio vadovų kompetencijas. Susietas su darbe pateikiami kompetencijų vystymo samprata, lyderio kompetencijų modelis galėtų būti praktiškai naudojamas, kaip praktiškai priemonė, padedanti įvertinti ir vystyti lyderio kompetencijas, siejant kompetencijas su konkrečiais lyderio veiklos rezultatais. Tyrimas identifikavo, kokios kompetencijos prognozuojà aukštesnìs lyderystės rezultatus, bei padėjo įvertinti sisteminio mâstymo kompetencijkos poveikio lyderystės rezultatams skirtumus gamybinėse ir prekybinėse organizacijose Lietuvoje.

Raktiniai žodžiai: sisteminis mâstymas, intelekto kompetencijos, lyderystės rezultatas.