

# USING BOST METHOD TO THE CONCEPT DEVELOPMENT ESTIMATION

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## Resume

The paper uses an innovative research methodology - BOST questionnaire. Based on the questionnaire, two Toyota's principles were evaluated. These were E2 and E2 areas. According to the results it is possible to state that the most important factors for workers are the following: customer's good (DK), followed by product innovativeness (IP), independence and accountability of employees (SP), formation of products stockpile (PZ), cooperation with partners (WK), technology development (RT) and corporate culture care (PR).

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## 1. Introduction

Assumptions related to the construction of a power station provide 12 energy blocks to work. The first block was put into operation on 29.12.1981. Brown coal mine operated from also contains other materials, such as peat, sand and gravelly quartz - feldspar, boulders, clays, flint-in aggregate, quartz sandstones, limestone. Power station coal, transported by taking calorie control, makes a raw material.

## 2. BOST method and Toyotarity

The BOST method allows defining the relations between material resources and human resources and between human resources and human resources (BORKOWSKI S. 2012a). Toyotarity is a scientific discipline examining human - machine and human - human relationships with consideration of a process-based approach, Japanese culture, especially of the Toyota, oriented to continuous improvement with the use of knowledge (BORKOWSKI S. 2012b).

This definition details two dipoles: human - machine and human - human. Human factor appears in three out of four components of the above definition thus underlining the meaning

of a human in a Japanese culture and, consequently, in the culture of Toyota. In the fundamental dipole human-machine, human pole means: originators, initiators, investors, chief management, leaders, who plan and realize human activity. In the other dipole, human-human, one pole means: management, leaders - managerial staff, who during the performance of human resources management has visual contact with them, it can be stated that they look into the eyes of the executors of processes, who are an element of the second pole of the human - human relationship. The BOST method (the name derives from the first two letters of the author's surname and name and is legally protected, BORKOWSKI S. 2012a) describes the Toyota's management principles with its characteristic factors. Their number depends on the scope of such a principle and varies between 4 and 10. A set of factors is called an area. Some principles are divided into two or even three areas. The Toyota's management principles are divided into four sections, while the BOST questionnaire has two versions: a version for employees and a version for superiors. The version for employees contains a set of factors describing principles: 1; 2; 3; 4; 6; 7; 14 and elements of the roof of the Toyota's house (quality, costs, lead time, safety, morale of the

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personnel). The version for superiors contains a set of factors describing all the Toyota's management principles and elements of the roof of the Toyota's house. The presented questionnaire has a ranking scale. Respondents may assess the significance of a given factor by placing one of the numbers within the range of the scale in an appropriate box.

### 3. Research method

The BOST method (the name comes from the first two letters of the author's surname and name and is legally protected) (BORKOWSKI S. 2012a) describes the Toyota's management

principles with its characteristic factors (BORKOWSKI S. 2012b). Their number depends on the scope of the principle and ranges from 4 to 10 set factors known as areas. Some principles are divided into two or even three areas. Toyota's management principles are divided into four sections, while the BOST questionnaire has two versions: a version for employees and one for supervisors. The version for employees contains a set of rules that describe factors: 1, 2, 3, 4, 6, 7, 14 and elements of the roof of the house of Toyota (quality, cost, delivery time, safety, morale).

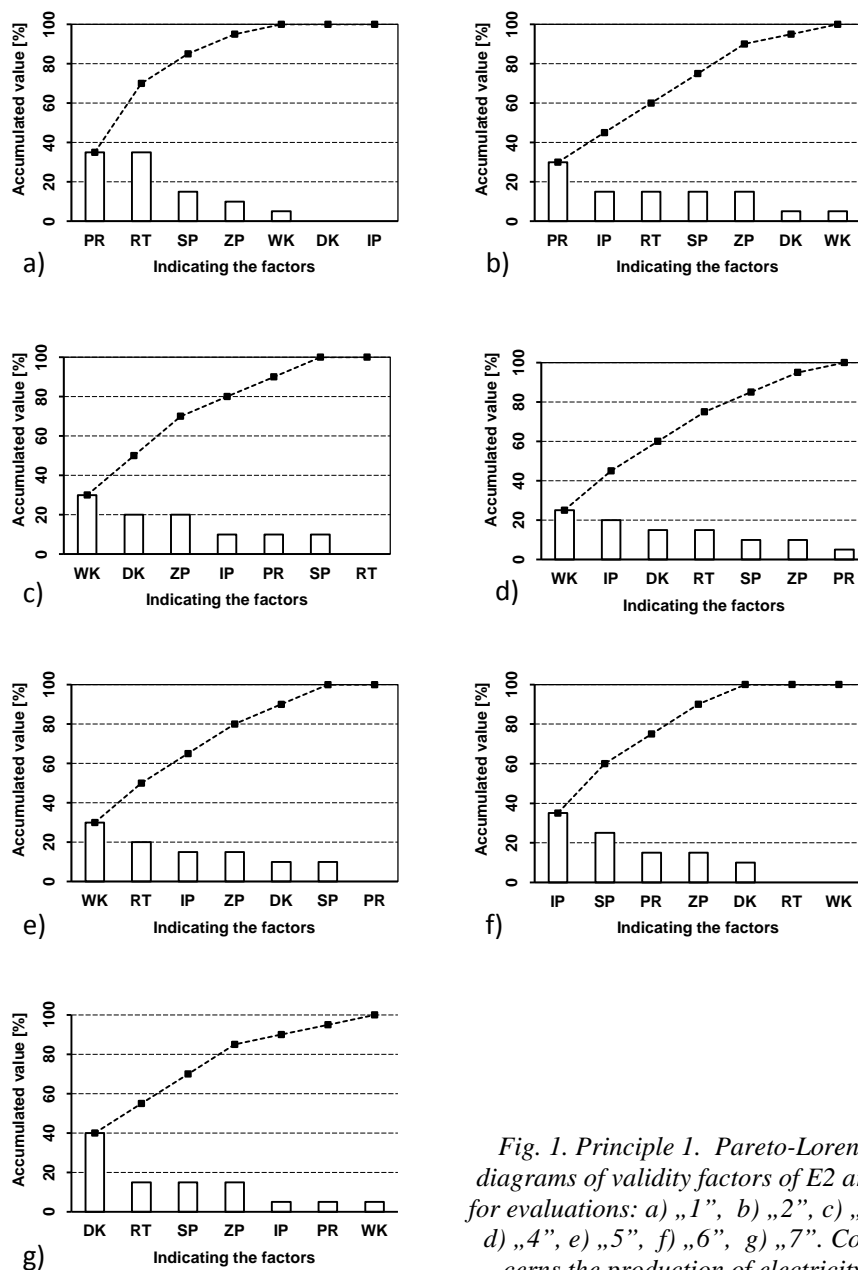


Fig. 1. Principle 1. Pareto-Lorenz diagrams of validity factors of E2 area for evaluations: a) „1”, b) „2”, c) „3”, d) „4”, e) „5”, f) „6”, g) „7”. Concerns the production of electricity

The superior's version contains a set of factors describing all Toyota management principles and elements of the roof of the Toyota house. The scale survey has shown variation. The respondents in the right pane were asked to assess the validity factor by inserting one of the numbers within the limits of the scale. In the tested company, the staff and managers were polled with BOST survey (BORKOWSKI S. 2012a BORKOWSKI S. 2012b). The study was subject to the second and the fourth principle of Toyota. In fact, in the second principle the respondents were asked to answer the question:

**What factors decide about the concept development of your company?** In the box, type 1, 2, 3, 4, 5, 6, 7 (7 crucial element).

<b>DK</b>		Customer's good
<b>IP</b>		Product innovativeness
<b>WK</b>		Cooperation with partners
<b>SP</b>		Independence and accountability of employees
<b>ZP</b>		Trust in relationships with employees
<b>PR</b>		Corporate culture care
<b>RT</b>		Technology development

The presented set of factors describes the first management principle of Toyota. (BORKOWSKI, S., ROSAK-SZYROCKA, J. 2011a). In the case of the third Toyota management principle the respondents were asked to rate the following areas: **E4a. The organization of the production system provides:** In the box, type 1, 2, 3, 4 (4 the most important element).

<b>DZ</b>		Deliveries to the customer's "demand"
<b>MM</b>		Maximum utilization of machines, people
<b>PZ</b>		Formation of products stockpile
<b>BS</b>		Without storage system

The presented set of factors describes the third management principle of Toyota (BORKOWSKI S. 2012a).

#### 4. Results and their analysis

Figure 1 shows the Pareto-Lorenz diagrams of importance factors of E2 area (BORKOWSKI S. 2012b, BORKOWSKI S. 2012c). By analyzing Figure 1a it can be seen that in the case of evaluation 1 two areas dominated: *corporate culture care* (PR) and *technology development* (RT). These areas are in the description

of the importance factors that determine the concept of the least development of the company. Estimation 1 was observed for the *customer's good* area (DK) and *product innovativeness* (IP). By introducing a new system in a company set to create a new culture it is possible to get a lower score of occurrence of such an assessment. Analyzing the evaluation 2 appearing in Figure 1b it can be seen that the frequency of its occurrence was the highest for the areas *corporate culture care* (PR) and *product innovativeness* (IP).

#### 5. Conclusions

The paper uses innovative research methodologies based on a BOST questionnaire (BORKOWSKI S. 2012d). Chosen areas of Toyota were taken into consideration, namely E2 and E4. E2 area assessment is determined by evaluation factors referring to the concept of development that affected the respondents while E4 area concerned the organization of the production system.

#### References

- [1] BORKOWSKI S. 2012a. Toyotaryzm. Wyniki badań BOST, Wydawnictwo PTM, Warszawa.
- [2] BORKOWSKI S. 2012b. Toyotaryzm. Zasady zarządzania Toyoty w pytaniach, wydawnictwo PTM, Warszawa.
- [3] BORKOWSKI, S., ROSAK-SZYROCKA, J. 2011a. *Leadership-integrator features in regard to director*, [w:] *Ekonomika a manažment podnikov 2011. Medzinarodna vedecka konferencia. 4 a 5 oktobra 2011, Zvolen*.
- [4] BORKOWSKI, S., ROSAK-SZYROCKA, J. 2011b. *Toyotarity. Reflections on the Improvement*. Monography. Editing and Scientific Elaboration Borkowski S., Rosak-Szyrocka J., Publish. Yurii V. Makovetsky, Dnipropetrovsk, ISBN 978-966-1507-72-1, 226 s.
- [5] BORKOWSKI, S., ROSAK-SZYROCKA, J. 2011c. *Visual Control in Fabric Quality Improvement*. Chapter 5, [w:] *Quality. Technological Improvement*. Monography. Editing and Scientific Elaboration Borkowski S., Lipiński T., ISBN 978-80-89291-44-1, s. 49-62.
- [6] BORKOWSKI, S., ROSAK-SZYROCKA, J. 2011d. *Twelve Golden Principles as Director's Features Determinant*, *International Scientific Journal Human Resources Management and Ergonomics* ISSN 1338-4988 (online version), ISSN 1337-0871 (printing version), 2.