

## MULTICRITERIAL EVALUATION OF APPLYING JAPANESE MANAGEMENT CONCEPTS, METHODS AND TECHNIQUES

**Mateusz Podobiński\***

### **Abstract**

*Japanese management concepts, methods and techniques refer to work organization and improvements to companies' functioning. They appear in numerous Polish companies, especially in the manufacturing ones. Cultural differences are a major impediment in their implementation. Nevertheless, the advantages of using Japanese management concepts, methods and techniques motivate the management to implement them in the company. The author shows research results, which refer to advantages and disadvantages of using Japanese management concepts, methods and techniques in a Polish productive company in Dolnośląskie Province. There still remains the question of which evaluation criteria can be used to assess the use of Japanese management concepts, methods and techniques. The author shows six criteria. The article presents the scoring method of evaluating the Japanese management concepts, methods, techniques, which are based on presented criteria.*

**Keywords:** *Japanese management concepts, methods, techniques, evaluation criteria, scoring method of evaluation*

### **1. Introduction**

Japanese management concepts, methods and techniques are connected with the history of shaping the management system in the Toyota company after WW II. E. Toyota and T. Ohno began to think about the reduction of waste in Ford factories. The process lasted over twenty years (Nogalski, 2010, p. 300). Executive staff of organizations from different countries, acknowledging the success achieved by the discussed car-manufacturing corporation, are deciding to implement the new management tools<sup>1</sup>. However, culture considerations appear to be a big impediment. Culture is a set of norms and values passed down from one generation to another by means of religion, art, literature and other

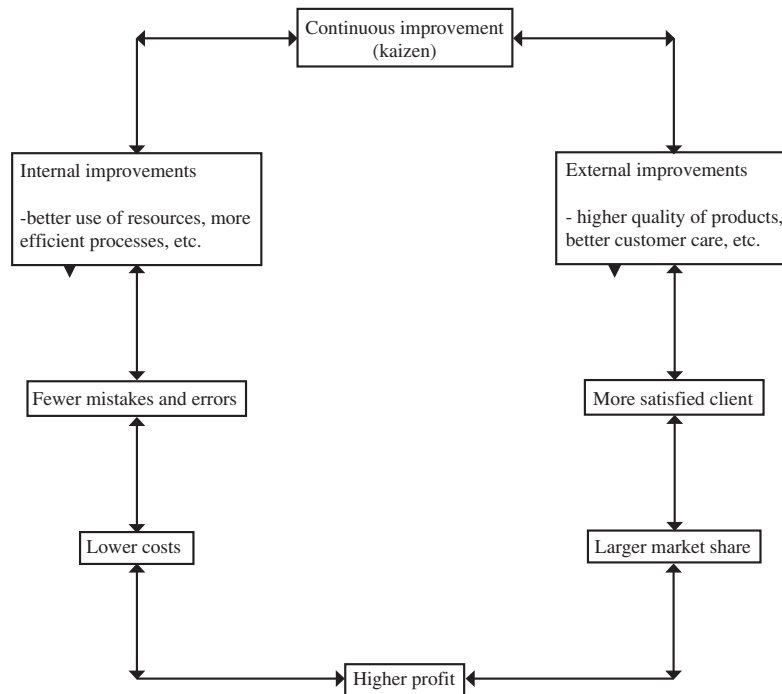
<sup>1</sup> Management tools include the concept (philosophy), methods, techniques (practices). This division has been presented in: (J. Skalik, G. Belz, 2011, p.104). The term management tools will be used interchangeably with the notions: concepts, methods, techniques.

\* M.A., P.D. Student, Department of Organization Theory and Management, Wrocław University of Economics, ul. Komandorska 118/120, 53-345, Wrocław, e-mail: mateusz.podobinski@ue.wroc.pl.

symbols (Prymon, 2010, pp. 85-87). The Japanese culture has its reflection in the managerial concepts, methods and techniques under discussion. Despite the obstacles, more and more organizations are deciding to implement or improve Japanese management concepts, methods and techniques. It results from the consequences of using the management tools which are mentioned in the second and third point of the article. Recent years have shown a trend to introduce lean management in Polish firms. What is worth pointing out are the evaluation criteria for applying Japanese management tools. The aim of the article is to present selected evaluation criteria for Japanese management concepts, methods and techniques. The author has suggested that the scoring method of evaluation of those criteria should be used. The article consists of six points. First, reasons and results of applying Japanese management concepts, methods and techniques are shown. The next point covers the overview of the six criteria used for evaluating operations, as well as a short characteristic of each. Point number five presents the scoring method of evaluation of Japanese management concepts, methods and techniques based on the criteria shown in the article. The article ends with conclusions and bibliography.

## **2. The reasons for implementing Japanese management concepts, methods and techniques**

Japanese management concepts, methods and techniques refer to organizing and optimizing processes in a company. They are not only used to improve production processes but also the office and service-related ones (Locher, 2012, p. 12). Although they have been known for a long time and they have been the subject of many publications, they are still an important and vital issue. Organizations decide to implement the presented tools for various reasons. Examples may include product quality enhancement, fewer machine failures, fewer faulty products, increase in efficiency. The above are just a few of the effects which can influence an increased company profit by external or internal factors. It is illustrated in figure 1, which refers to the effects of applying the kaizen concept.



**Figure 1.** Effects of using the kaizen concept

Source: Author's own work based on: Jens et al. (2004), p.47.

Figure 1 refers to the effects of using the kaizen concept. Besides that, the kaizen concept encompasses other methods and techniques, e.g. TQM (Total Quality Management), which constitutes an integral part of kaizen (Stańczyk-Hugiet, et al., 2011, p.118). Thus, the effects shown in Figure 1 may also concern other Japanese management tools. The improvements and their effects result in higher profit. It can be achieved by increased revenue or curbed costs, which is presented in Figure 1. However, is profit maximization the only aim of an organization? Is this the only reason why companies should decide to implement the Japanese management concepts, methods and techniques?

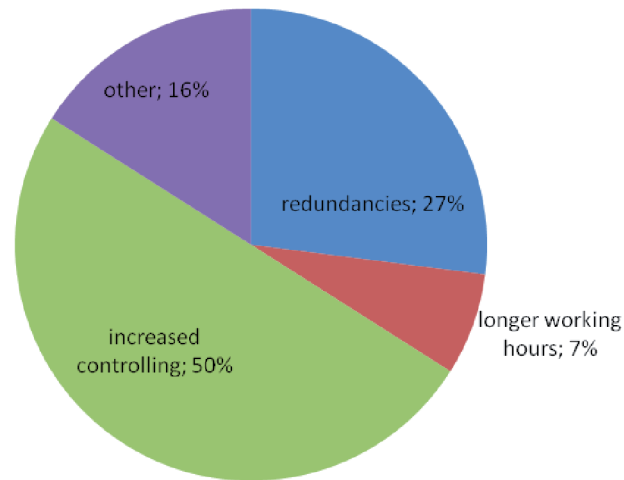
### **3. Aims of an organization and the effects of using Japanese management tools in the light of empirical research**

Each organization has its aims. An aim can be defined as a situation which a company is trying to reach. Aims can be divided into strategic, tactical, operational, as well as market-related, social, financial or efficiency ones. The division depends on the criterion applied (Strużyński, 2002, p. 110). According

to the author, however, two fundamental aims can be differentiated, namely: profit maximization and continuity in time. The former is necessary for a company to develop. When companies have higher profits, they can invest more in e.g. machinery, or increase employment or build new production facilities. This, in turn, may lead to increasing market share and cutting costs, examples of which are multiple. The latter aim of each company, as mentioned by the author, is its continuity in time. Organizations may occasionally not report a profit in an accounting year. It may happen that a company has a loss in one or more years. Such a situation may be caused by economic recession or other external factors which a business cannot directly control. However, it does not mean that a company has to go into liquidation, as it can have a profit in the following year. The important issue is to continue operations and survive despite a difficult situation in the market. The above-mentioned aims can be influenced by Japanese management tools. The application of Japanese concepts, methods and techniques forces both positive and negative changes in an organization, which is shown in Figures 2 and 3 presented below.



**Figure 2.** The effect of applying Japanese concepts, methods and techniques in a Polish manufacturing company



**Figure 3.** Negative effect of applying Japanese concepts, methods and techniques in a Polish manufacturing company

The conclusions of the author's research<sup>2</sup> carried out in 2012 in a Polish manufacturing company within the automotive industry indicate that positive effects of applying Japanese management tools include the following: higher quality of products (27%), fewer complaints (25%), better relations with employees (14%), reducing waste (14%), increase in job satisfaction (11%), increase in education (9%). The application of Japanese management concepts, methods and techniques should result in increased commitment of all employees. Therefore the company has witnessed enhanced cooperation between employees (better relations). Continuous improvement causes reduction in waste, which may be effective in terms of better product quality. Enhanced product quality means fewer complaints and higher customer satisfaction, which eventually can improve the company image.

The author's observations and his contacts with lean management coordinators<sup>3</sup> in different Polish organizations prove that not only internal trainings, but also external ones are of big importance. Trainings and workshops are devised to advance the understanding of management tools applied by the companies. As a result, employees increase their knowledge base (advance in

<sup>2</sup> The research method used was a survey carried out with 50 factory workers and office workers on different positions and shifts

<sup>3</sup> Lean management coordinator is a person who is responsible for lean management implementation in a company, aims at creating the right organizational structure supporting lean management and provides an appropriate communication process.

education (9%)), which in turn has an impact on better work performance, and thus on job satisfaction (11%).

However, the same empirical research conducted by the author shows that negative effects of the management concepts, methods and techniques under discussion include the following: increased controlling (50%), staff redundancies (27%), other factors (6%) and longer working hours (7%). Increased controlling results from professional improvement and PDCA cycle. If one wants to improve a process, they need to control its path. Therefore, after detecting failures it is possible to introduce counter-measures in order to increase the efficiency of the process (J. Liker, J. Franz, 2013, p. 59-62). As far as redundancy is concerned, it appears when the implementation of the Japanese management tools is defective. As it is shown in Figure 1, internal improvements are limited by costs. If a process can be done by four employees instead of five because of an improvement, the remaining employee should be moved to another department. He or she should not be laid off in order to reduce costs. It is a mistake in the implementation of Japanese management concepts, methods and techniques.

This is one of the reasons why it is so difficult for many companies to successfully implement the lean management concept. A study from 2007 shows that only 2% of organizations had managed to succeed in implementing the lean concept (Liker, Franz, 2013, p. 43). When staff are being made redundant, they become reluctant to changes because they are afraid of losing their jobs.

#### **4. The criteria for evaluating activities**

In management as an academic subject attempts are being made to determine certain universal criteria which can be used to evaluate activities or results. In his academic textbook, M. Przybyła specified six universal criteria for assessment (Przybyła, 2003, pp. 40-44):

- 1) Teleological
- 2) Praxeological
- 3) Esthetic
- 4) Hedonic
- 5) Economical
- 6) Ethical

Theological criteria consider an activity in terms of achieving its aim or not. They do not take into account any costs which are incurred when the activity is being put in practice. Praxeological criteria focus on such categories as: cleanliness, simplicity, precision. It can be exemplified by the 5S technique involving one's workstation which should be clean, all the necessary things

should be placed in a designated place, etc. Esthetic criteria refer to beauty, i.e. to whether a given product looks good. Hedonic criteria concern having pleasure in doing an activity; whether processes conducted by an employee give them satisfaction, pleasure or joy. Economic criteria are similar to teleological ones. Economic criteria in evaluating an activity or process draw attention to costs and this is the most fundamental difference from teleological criteria. Economic criteria are further divided into economicality and usefulness. Economicality is the relation of useful result to cost utilized for this activity. It should be larger than 1. For instance, let us consider the process of product development. In this process, sales revenue from the product is 10.000 and costs related to the product development are 7000. Let us place it into the formula.

$$E=10000/7000=1.43$$

Clearly, the activity is economical. The other category is that of usefulness. It is the difference between useful result and cost. The result has to be bigger than zero for the activity to be considered useful. Following the previous example, after having placed figures into the formula we obtain:

$$K=10000-7000=3000$$

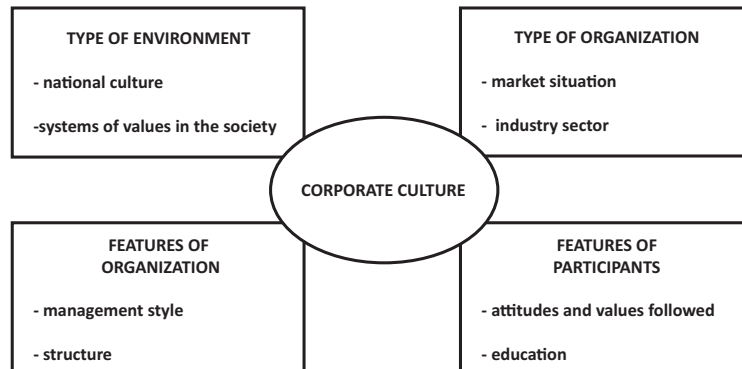
Subsequently:

$$3000>0$$

Hence, the activity is useful.

Economical criteria can be expressed in numerical terms. Therefore, they are mutually comparable (Przybyła, 2003, p. 40-44). Referring to the previous issue of this paper, one of the fundamental aims of a company is profit maximization. Japanese management concepts, methods and techniques streamline processes in an organization, thereby allowing profit to increase. The correlation can also be tested through economical<sup>4</sup> criteria, i.e. economicality and usefulness. Additionally, it is related to the profit and loss account of an organization, where revenue and costs of operational (core) activity are entered. However, there appears a problem in the case of qualitative criteria, which include, inter alia, ethical criteria related to values and norms followed by the people in a given community, country or region (Przybyła, 2003, p. 44). Japanese tools are 'deeply rooted' in the national culture, the Japanese one. National culture has an impact on organizational culture, which is shown in Figure 4. Norms and values characteristic for this culture are: collective acting, long-term orientation, self-discipline, improvement, distance of authority, external control (Kraśniński, 2014, pp. 88-90).

<sup>4</sup> Economical criteria are quantitative ones, i.e. they can be expressed with numbers



**Figure 4.** Chosen determinants of corporate culture

Source: Author's own work based on Przybyła (2003), p. 294.

The author's conclusions drawn from observations as well as contacts with persons representing different organizations indicate that companies implementing and using Japanese management concepts, methods and techniques are primarily interested in economical criteria. The remaining criteria, however, are also applied.

### **5. Scoring method of evaluation of applying Japanese management concepts, methods and techniques, on the basis of activities evaluation criteria.**

Japanese management concepts, methods and techniques include, inter alia, lean management, kaizen, Just in Time, Hoshin kanri, Total Quality Management, 5S, Total Productive Maintenance. Particular methods and techniques are part of a concept. For example, the kaizen concept includes: Just in Time, 5S, kanban. Yet, is it possible to use the activity evaluation criteria described in point 4 of this paper for evaluating the application of presented hereby management concepts, methods and techniques? According to the author it is possible, as shown in Table 1.

It is a template table prepared for a production department. It consists of activity evaluation criteria and components characterizing these criteria. The components of the criteria are related to characteristics of the six criteria shown in point 4.5 Particular criteria can be applied to evaluation of management

<sup>5</sup> Teleological criteria consider an activity in terms of its aim. In a production department an aim can be to reduce the retooling time by 10% (a criterion component). Praxeological criteria refer to cleanliness, precision and simplicity of operations. Therefore, cleanliness of workstation can constitute a component of this criterion. Other components are specified in the same manner. The examples are specific for a manufacturing department.



concepts, methods and techniques. The author suggested the scoring method, which differentiates between weights and evaluation referring to particular management concepts, methods and techniques. This method can be used in various company departments applying the management tools under discussion, e.g. in production, logistics, or IT. The weights denote the importance of particular components and criteria, whereas the evaluation indicates the degree to which components have been done in a certain department or the whole company. Both weights and evaluations are multiplied, which gives the score (“total score” position). The maximum score for each component is 15 points. The score for a whole criterion equals the sum of component points in a given criterion divided by the number of components. Owing to this chart, one can see which criterion has the highest score. However, the management should thoroughly analyze the criteria with the lowest scores. It signals which areas need improvements and calls for considering reasons for such a state of affairs. Special attention should be paid to components of weight 3 (the highest) and evaluation 0 (the lowest). This means that the component is a very important one, but inappropriate (or none) means of implementation have been chosen, whereby the needed effects have not been achieved. One example from the table is shortening the time taken for machines instrument turnover by 10%.

**Table 1.** Template table for scoring evaluation of applying Japanese management concepts, methods and techniques for a production department, based on activity evaluation criteria.

Criteria	Components of criteria	Weight (1 to 3)	Evaluation (0 to 5)	Total score
Teleological	Shortening the time taken for retooling machines by 10%.	3	0	0
	Decreasing the number of faulty elements	3	3	6
	Decreasing the product unit cost by 3%	3	1	3
Praxeological				5
	Clean workplace	1	0	0
	Precision of product workmanship	3	3	9
Esthetic	Simplicity of workmanship	2	3	6
				1
Hedonic	Nice workplace	1	1	1
				9
Economical	Pleasure of doing the job	3	3	9
				4,5
	Economicality	3	2	6
Ethical	Usefulness	3	1	3
				2
	Team (collective) work	1	2	2
	Long-term approach	1	2	2

Components of the criteria used in Table 1 may vary depending on the department and may carry different weights. As mentioned before, it is advisable to pay close attention to those criteria and their components which achieve the lowest score. It is crucial to consider their possible causes and take action to improve or eradicate them, which is the core of Japanese management tools<sup>6</sup>. In the author's opinion, such an evaluation of using Japanese management concepts, methods and techniques in terms of presented criteria is worth being carried out. It is a simple and quick method.

## 7. Conclusion

The aim of this paper has been to present selected evaluation criteria of applying Japanese management concepts, methods and techniques.

The author has provided six criteria which can be used to evaluate the application of Japanese management concepts, methods and techniques. The paper proceeds to discuss the scoring evaluation of Japanese management concepts, methods and techniques. The evaluation consists of six criteria which are further subdivided into criteria components. This method expresses particular criteria in the quantitative way (as points scored). Based on the resulting figure and given weights, one can pinpoint those components of a criterion which needs improving. The type and amount of particular criterion components may differ. It all depends on the company profile and department. Still, the number of criteria applied should remain constant. The method is universal, meaning that it can be applied in various organizations. The activity evaluation criteria can be used for evaluating Japanese management concepts, methods and techniques.

## References

- Czerska, M., Szpitter, A. (2010). *Koncepcje zarządzania Podręcznik akademicki*. Warszawa: Wydawnictwo C.H. Beck.
- Gierszewska, G., Romanowska, M. (1997). *Analiza strategiczna przedsiębiorstwa*. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- Jens, J., Kristensen, K., Kanji, G. (2004). *Podstawy zarządzania jakością*. Warszawa: Wydawnictwo naukowe PWN.
- Krasiński, M. (2014). *Kulturowe uwarunkowania wykorzystania japońskich koncepcji, technik zarządzania*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.

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<sup>6</sup> Kaizen means continuous improvement, while the PDCA cycle (Plan, Do, Check, Act) refers to improving and eradicating of causes.

- Liker, J., Franz, J. (2013). *Droga Toyoty do ciągłego doskonalenia Jak osiągnąć znakomite wyniki dzięki strategii i operacyjnej doskonałości*. Warszawa: MT Biznes.
- Locher, D. (2012). *Lean w biurach i usługach Przewodnik po zasadach szczupłego zarządzania w środowisku pozaprodukcyjnym*. Warszawa: MT Biznes.
- Przybyła, M. (2003). *Organizacja i zarządzanie Podstawy wiedzy menedżerskiej*. Wrocław: Wydawnictwo Akademii Ekonomicznej.
- Prymon, M. (2010). *Marketingowe strategie wartości na rynkach globalnych*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.
- Skalik, J., Bełz, G. (2011). *Kształtowanie i doskonalenie systemu zarządzania w przedsiębiorstwach*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.
- Stańczyk-Hugiet, E., Lichtarski, J., Piórkowska, K. (2011). *Management Functions. Strategies. Methods*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.
- Strużycki, M. (2002). *Zarządzanie przedsiębiorstwem*. Warszawa: Difin.