

Nazar Y. Podolchak¹, Galyna R. Kovalchuk²

INTERPERSONAL MANAGEMENT CONFLICTS IDENTIFICATION AND EVALUATION AT MACHINE-BUILDING ENTERPRISES

The article presents the method for quantitative evaluation of the level and structure of interpersonal management conflicts that prevail over other conflicts at machine-building enterprises. According to the reasons of emergence the studied interpersonal management conflicts were divided into the following types: informational, behavioral, structural, conflicts of relationships and values. The method was developed basing on the conjoint analysis that allows evaluating simultaneously both the structure of a conflict and its level according to the priorities system, to have more credible results. The calculated values show that the prevailing conflicts at machine-building enterprises are the informational ones related to poor information support of administrators. Behavioral and relationship conflicts turned to be significant, too since they have a different origin and nature, they are to be resolved by specific methods.

Keywords: interpersonal management conflicts; machine-building enterprise; conflict identification; conflict evaluation.

Назар Ю. Подольчак, Галина Р. Ковальчук

ІДЕНТИФІКАЦІЯ ТА ОЦІНЮВАННЯ МІЖСОБИСТІСНИХ УПРАВЛІНСЬКИХ КОНФЛІКТІВ НА МАШИНОБУДІВНИХ ПІДПРИЄМСТВАХ

У статті розроблено метод кількісного оцінювання рівня та структури міжособистісних управлінських конфліктів, які є домінуючими на машинобудівних підприємствах. Досліджувані міжособистісні управлінські конфлікти було поділено на види за причинами виникнення: інформаційні, поведінкові, конфлікти відносин, цінностей і структурні. Розроблено метод із використанням поєднувального аналізу, який дає змогу оцінювати одночасно як структуру управлінського конфлікту, так і його рівень за системою пріоритетів, що підвищило вірогідність отриманих результатів. Розрахункові значення засвідчили, що серед управлінських конфліктів на машинобудівних підприємствах домінують інформаційні конфлікти, пов'язані із незадовільним інформаційним забезпеченням управлінців підприємства. Істотними є також поведінкові конфлікти та конфлікти відносин, які мають різну природу виникнення та потребують особливих методів розв'язання.

Ключові слова: міжособистісні управлінські конфлікти; машинобудівне підприємство; ідентифікація конфлікту; оцінювання конфлікту.

Форм. 4. Табл. 3. Рис. 3. Літ. 11.

Назар Ю. Подольчак, Галина Р. Ковальчук

ИДЕНТИФИКАЦИЯ И ОЦЕНКА МЕЖЛИЧНОСТНЫХ УПРАВЛЕНЧЕСКИХ КОНФЛИКТОВ НА МАШИНОСТРОИТЕЛЬНЫХ ПРЕДПРИЯТИЯХ

В статье разработан метод количественной оценки уровня и структуры межличностных управленческих конфликтов, которые являются доминирующими на машиностроительных предприятиях. Исследуемые межличностные управленческие конфликты поделены на виды по причинам возникновения: информационные, поведенческие, конфликты отношений, ценностей и структурные. Разработан метод с использованием совместного анализа, позволяющий оценить одновременно как структуру управленческого конфликта, так и его уровень по системе приоритетов, что повысило

¹ National University "Lviv Polytechnic", Ukraine.

² National University "Lviv Polytechnic", Ukraine.

адекватность полученных результатов. Расчетные значения показали, что в структуре управленческого конфликта машиностроительных предприятий доминируют информационные конфликты, связанные с неудовлетворительным информационным обеспечением управленцев. Существенными являются также поведенческие конфликты и конфликты отношений, имеющие различную природу возникновения и требующие особых методов решения.

Ключевые слова: межличностные управленческие конфликты; машиностроительное предприятие; идентификация конфликта; оценка конфликта.

Problem statement. Environment dynamics, complexity of organization and communication structures, increase of competition and uncertainty at markets the recent crisis outcomes, struggle between countries for markets and resources, political confrontation especially in developing countries are causing the increase of conflicts quantity and the conflict level in general. All the above factors of conflicts emergence lie beyond the limits of enterprises influence, that is why they require constant monitoring and appropriate adjustment by the organization. However, it is not less important to consider the subjective component of conflict nature – the lack of desire to see the mutual advantage of cooperation, possibility to avoid conflicts with minimal losses, confidence in the accuracy of objectives, principles and convictions, asymmetry and monocentricity of corporate culture, managers indifference to the occurrence of conflict situations, which leads to the irreversibility of negative effects and significant losses caused by conflicts.

Hereby, the task for enterprises managers is to identify potential conflict situations, sometimes provoke their emergence in order to resolve management problems, evaluate their level, influence their course and try to receive functional results.

Latest research and publications analysis. The problems of identification and quantitative evaluation of management conflicts in the enterprise functioning have been researched by both domestic and foreign scientists, including: A.J. Antsupov and S. Baklanovskiy (2009), S.L. Bem (1974), P.P. Gornostay (1997), S. Yerina et al. (2002), H. Cornelius and C. Fair (1992), T.A. Polozova (2007), I. Sivchuk (2012), K. Smith (1993). All the estimation methods can be divided into the usage of qualitative evaluation criteria and quantitative identification indicators and into the determination of the conflict level.

An interesting method of conflict identification called mapping was suggested by Australian scientists H. Cornelius and S. Fair (1992: 250–268). The key point of this technique is the map that contains the following elements: the parties of conflict management, their needs and concerns. According to the authors of this method, such maps are very effective in preparation of negotiations and business contacts, negotiations that have no logical development, resources allocation, avoiding tension inside the team and personnel risks (in particular, staff turnover), implementation of innovations and changes etc.

S.I. Yerina has suggested a diagnostic scale of management role conflicts. The designed approach makes it possible to identify and evaluate management conflicts that arise in the work of lower level management (Yerina et al., 2002: 203–207).

Another method has been developed by a Russian psychologist T.A. Polozova (2007) to study the relationship between team members, in particular to evaluate and identify interpersonal conflicts inside administrative groups. The method of

A.Y. Antsupov ("modular methods of interpersonal conflicts diagnosis") is similar to the previous one (Antsupov and Baklanovskiy, 2009: 200–220). I.I. Sivchuk (2012) has proposed the quantitative methods of conflicts identifying and measuring taking into consideration corporate enterprise.

Unresolved issues. While evaluating the level of conflicts it is essential to identify the structure within the complex of all management conflicts. To do this, a certain system and dominant features of homogeneous management conflicts structure formation are to be chosen. From the standpoint of an effective conflict management system construction it is very important to identify the root causes of conflicts, which will give an opportunity to develop a set of measures aimed at avoiding or reducing dysfunctional effects of conflicts. Therefore, it is rather important to choose the criteria that structure conflicts by the reasons and factors of origin. Moreover, it is essential to elaborate specific quantitative indicators of conflicts structure detection and conflicts levels.

The purpose of the research is to develop the method of quantitative identification and evaluation of interpersonal management conflicts structure and levels at machine-building enterprises by using the tools of economic statistics.

Key research findings. First of all, the structure of conflicts should be determined.

To identify and evaluate conflicts it was proposed to apply the method of conjoint analysis. The sequence in conjoint analysis is shown in Figure 1.

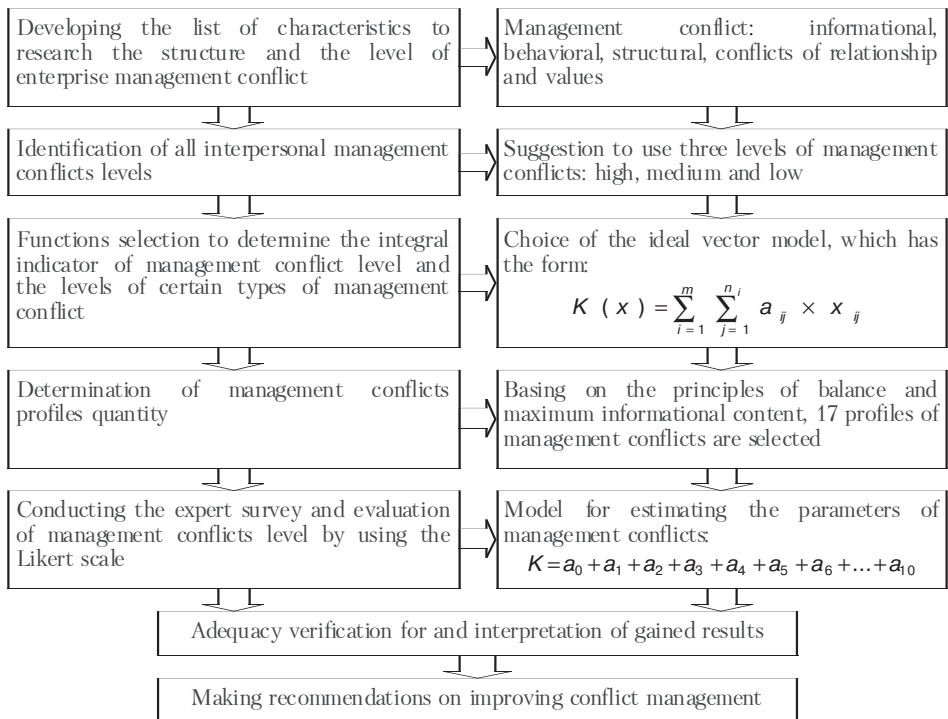


Figure 1. The sequence of conjoint analysis application to evaluate the level of interpersonal management conflicts, elaborated by the authors

Model for the evaluation of management conflict level and identification of its structure has the form (Malhotra, 2002):

$$K(x) = \sum_{i=1}^m \sum_{j=1}^{n_i} a_{ij} \times x_{ij}, \tag{1}$$

where $K(x)$ – the integral evaluation of management conflict level at an enterprise; x_{ij} – the evaluation of certain types of management conflict at the enterprise; a_{ij} – the parameter of the independent variable that corresponds to the j -th level ($j \in \{1, n_i\}$), i -th type of conflict; n – the number of evaluation levels; m – the number of management conflicts.

To receive the most adequate and credible results of the management conflict level evaluation all possible profiles combinations should be determined. In practice, however, the amount of profiles is limited on the basis of detecting correlative connections between the profiles by using the orthogonal method. In our research it is reasonable to evaluate 17 profiles that do not correlate with others; to be more specific, the correlation coefficient is minimal between the profiles (Table 1).

Table 1. The average value of interpersonal management conflicts profiles evaluation at machine-building enterprises

The average level of conflicts at the enterprises		Profiles of interpersonal management conflicts									
		Informational		Behavioral		Relationship		Values		Structural	
JV "Sferos Elektron"	LLC "Robitnia"	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}
2	2.25	0	0	0	1	0	0	0	1	0	1
1.714286	2.375	0	0	1	0	0	1	0	1	0	1
2	3.375	0	0	0	1	1	0	0	1	0	1
3.142857	2.875	0	1	1	0	0	1	1	0	0	0
3.428571	2.875	0	1	0	1	1	0	1	0	0	0
2.714286	2.875	0	1	1	1	0	0	1	0	0	0
3.714286	3.5	1	0	0	1	1	0	1	0	1	0
4.571429	2.625	1	0	1	0	0	1	1	0	1	0
3.714286	3.5	1	0	0	1	0	0	1	0	1	0
2.571429	2.5	0	0	1	0	1	0	0	1	0	0
2	2.375	0	0	0	1	1	0	0	1	0	1
3	2.625	0	1	1	0	0	1	1	0	0	1
2.714286	2.25	0	1	0	1	0	1	1	0	1	0
4.142857	3.75	1	0	0	1	0	0	0	1	1	0
4.428571	2.75	1	0	1	0	0	0	0	1	0	0
3	2.875	0	0	1	0	1	0	1	0	0	0
3.142857	2	0	1	1	0	0	0	1	0	1	0

Note: generated on the basis of the expert surveys.

Based on the number of selected management conflicts and their levels, the formula for estimating the parameters will have the following form:

$$K = a_0 + a_1x_1 + \dots + a_{10}x_{10}, \tag{2}$$

where K – the integral management conflict level indicator; a_1 – a_{10} – variables for different management conflicts of enterprises.

Practically, we create a common multifactorial correlative-regressive model with fictitious variables that take the value of either 0, or 1. Calculation of equation parameters is carried out by using the method of the least squares, where the respondents evaluation is the dependent variable and the formed combinations of management conflict are the independent variables.

Therefore, the calculated model for the joint venture "Sferos Electron" has the following form:

$$K_1 = 3.32312 + 2.03231x_1 + 0.89795x_2 - 0.5493x_3 - 0.801x_4 + 0.21768x_5 - 0.1496x_6 - 0.1564x_7 - 0.3027x_8 - 0.3486x_9 - 0.4132x_{10} \quad (3)$$

Having considered the input data of LLC "Robitnia", we calculate the conjoint analysis models parameters for the research of interpersonal management conflicts structure and levels. The formula is the following:

$$K_2 = 2.48976 + 1.0536x_1 + 0.19196x_2 - 0.0138x_3 + 0.42215x_4 + 0.44828x_5 + 0.07998x_6 - 0.215x_7 - 0.3859x_8 - 0.389x_9 - 0.0354x_{10} \quad (4)$$

The received regressive models contain only the values of 10 levels of different management conflicts types. Therefore, we should find the values of other 5 levels of management conflicts and identify the prevailing management conflicts in the structure of conflicts that arise at these machine-building enterprises (Table 2).

Table 2. Characteristics of interpersonal management conflicts levels and partial weight of these levels

Management conflicts	Levels	Partial weights	
		JV "Sferos Elektron"	LLC "Robitnia"
Informational conflicts	High	1.05556	0.638464
	Medium	-0.07879	-0.223236
	Low	-0.97676	-0.4152
Behavioral conflicts	High	-0.09914	-0.149958
	Medium	-0.35085	0.286056
	Low	0.45017	-0.136098
Relationship conflicts	High	0.195012	0.27219
	Medium	-0.172335	-0.096105
	Low	-0.022675	-0.17609
Values conflicts	High	-0.0034	-0.0147
	Medium	-0.14964	-0.18563
	Low	0.15306	0.20033
Structural conflicts	High	-0.09467	-0.24755
	Medium	-0.1593	0.10605
	Low	0.25397	0.14149

Note: Calculated by the authors.

Having applied the formula for determining the fixed weight of management conflicts in the overall structure of interpersonal conflicts at machine-building enterprises, we have got the results which are in Table 3.

Table 3. The fixed weight of management conflicts

Management conflicts	Relative fixed weights of management conflicts		Interpretation of received results	
	JV "Sferos Elektron"	LLC "Robitnia"	JV "Sferos Elektron"	LLC "Robitnia"
Informational conflicts	1	1	The most significant conflict	The most significant conflict
Behavioral conflicts	0.28811	0.074964	The second place	The third place
Relationship conflicts	0.184899	0.093335	The third place	The second place
Values conflicts	0	0	The least significant conflict	The least significant conflict
Structural conflicts	0.063927	0.004613	The forth place	The forth place

Note: Calculated by the authors on the basis of the conjoint analysis.

In order to interpret management conflict patterns at machine-building enterprises the appropriate graphs have been formed (Figures 2 and 3).

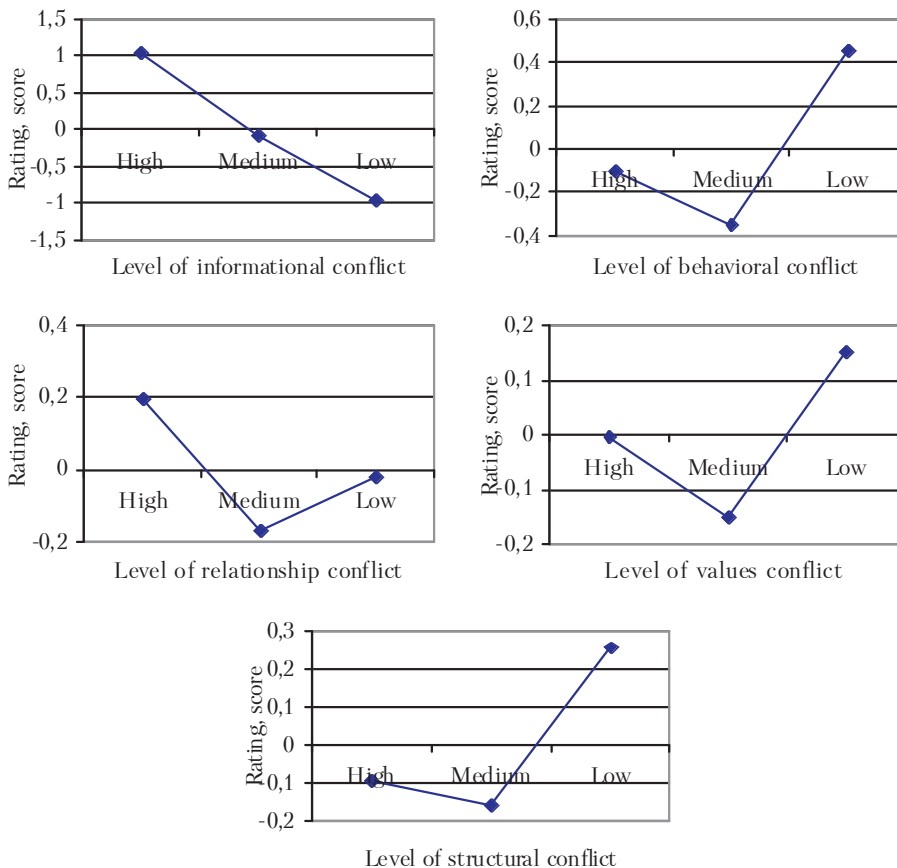


Figure 2. The structure and level of management conflicts in the functioning of JV "Sferos Electron", elaborated by the authors using the conjoint analysis

Conclusions and prospects for further research. The structure of management conflicts in the functioning of machine-building companies is quite similar. The research has made it possible to detect that in the structure of management conflicts the dominant ones are informational conflicts that are related to poor information support of companies' administrators. The experts draw attention especially to the unsatisfactory level of information support for management decision-making, lack of information about changes in the environment, asymmetry of information in various stakeholder groups. Therefore, the main recommendation on the elimination of conflicts for the company is the necessity to direct resources at the improvement of communication channels and to take measures on information support development for management decision-making.

For the functioning of the JV "Sferos Electron" behavioral management conflicts are rather essential. The main reasons for their occurrence at the investigated enterprise are the dominance of private arrangements, nepotism, active influence of infor-

mal organizations that sometimes prevail over rationality and efficiency in managerial decision-making. The settlement of such conflicts is possible by implementing certain standards of behavior and decision-making and the following adherence of those standards.

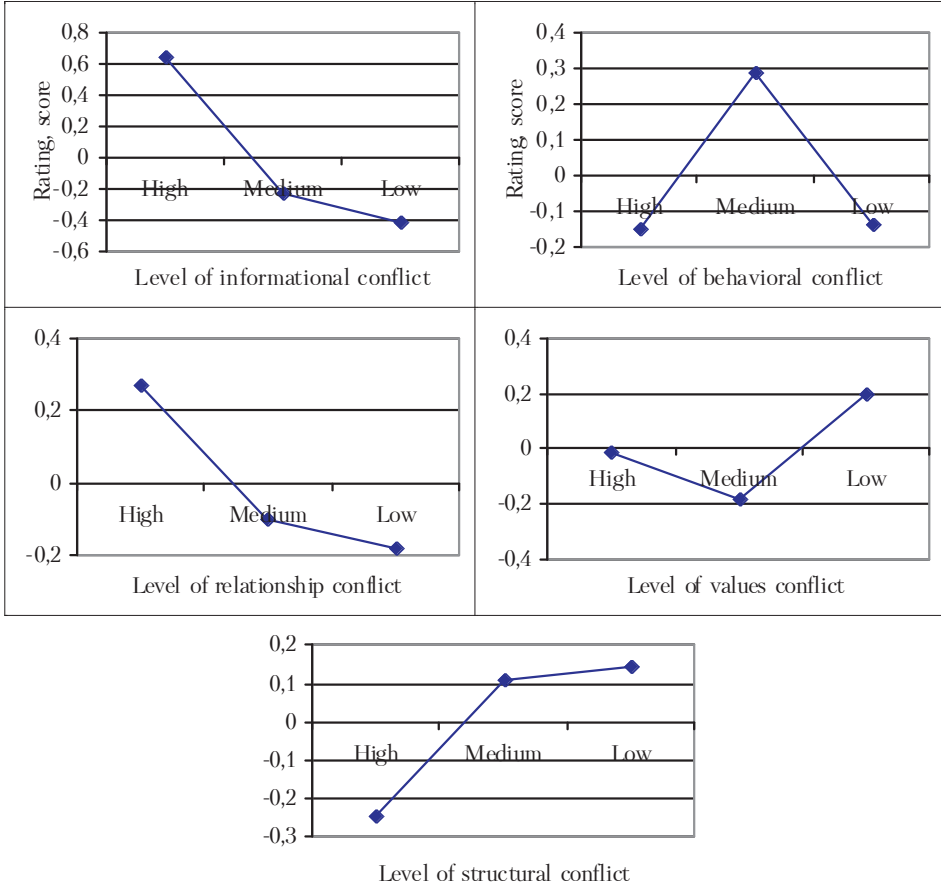


Figure 3. The structure and level of management conflicts in the functioning of LLC "Robitnia", elaborated by the authors

For the LLC "Robitnia" on the second place in terms of significance in the structure of conflicts are the relationship conflicts that display a high level of dynamism and, thus, bring turbulence and uncertainty into the activities of management. According to the experts, the reason for the appearance and dominance of behavioral conflicts at enterprises is the lack of power balance in the relationships between leaders.

As for the JV "Sferos electron", the management conflict of relationship takes only the third place in terms of significance. Interestingly, the level of relationship conflict is as high as for the previous enterprise. Consequently, both companies should take measures to improve relations between managers by developing corporate unity programs.

In the third place in terms of dominance in the structure of general management conflict at "Robitnia" there are behavioral conflicts, while structural conflicts take the penultimate place. In addition, it was discovered that the level of all structural conflicts that occur in both companies is quite low. Thus, the objective circumstances of conflicts appearance that cannot be changed are not significant in terms of conflicts occurrence. In the structure of the management conflict in the functioning of both companies the least important is the conflict of values.

Further research should be focused on developing result-based methods that would help reduce and avoid interpersonal management conflicts at machine-building enterprises.

References:

Анцупов А.Я., Баклановский С.В. Конфликтология в схемах и комментариях. – 2-е изд., перераб. – СПб.: Питер, 2009. – 304 с.

Горноста́й П.П. Вимірювання параметрів рольового конфлікту: зарубіжний досвід // Конфліктологічна експертиза: теорія та методика. – Вип. 1. – К., 1997. – С. 116–125.

Диагностика ролевого конфликта в деятельности руководителя / С.И.Ерина, Н.П. Фетискин, В.В. Козлов, Г.М. Мануйлов. – М.: Социально-психологическая диагностика развития личности и малых групп, 2002. – 320 с.

Корнелиус Х., Фэйр Ш. Выиграть может каждый. Как разрешать конфликты. – М.: Стрингер, 1992. – 386 с.

Малхотра Н. Маркетинговые исследования / Пер. с англ. – 3-е изд. – М.: 2002. – 960 с.

Полозова Т.А. Диагностика Межличностных конфликтов в группе, 2007 // www.gurutestov.ru.

Рябцев В.Н., Шитив М.А. Конфликтология: Хрестоматия. – Ростов-на-Дону, 2001. – 488 с.

Сівчук І. Методичні аспекти оцінювання конфліктів на підприємстві у контексті корпоративної культури // Галицький економічний вісник. – 2012. – №6. – С. 65–70.

Цюруна М.В. Основи конфліктології та теорії переговорів. – К., 2004. – 172 с.

Vet, S.L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42(2): 155–162.

Smith, C.S. (1993). The measurement properties of the role conflict and role ambiguity scales: A review and extension of the empirical research. *Journal of Organizational Behavior*, 14(1): 37–48.

Стаття надійшла до редакції 8.11.2013.