

Management Approach to Motivation of White-collar Employees in Forest Enterprises

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Employee motivation is a prerequisite for the effective development of the potential of human resources. Therefore, motivation processes are important. The aim of the paper was to define the motivational priorities of white-collar employees in forest enterprises. Following the research results, cluster analysis statistical methods were used to define employee groups with similar motivations. The research was carried out in 11 forest enterprises with 195 total respondents. The results indicated that it is possible to create a unified motivation program with selected motivation factors for white-collar employees in forest enterprises. Defined groups had similar levels of motivation in individual motivation factors. Three significant motivation factors were determined: basic salary, working environment, and fair appraisal system. These motivation factors can be systematically implemented as a tool to improve the level of motivation of individual groups. It is important to consider that conditions and work environments change over time, so an effective motivation program must be updated regularly in order to produce sustained benefits.

Keywords: White-collar employee motivation; Forest enterprises; Motivation program; CLUA; ANOVA

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INTRODUCTION

Market economy and social changes have opened the space for entrepreneurial activities in the forestry industry; private entities have emerged, which are providing forestry services (Ankudo-Jankowska 2007; Caban *et al.* 2018). The forestry sector is considered to fulfill one of the most important social functions in the economy of the Slovak Republic (Forest Europe 2015; Balážová and Luptáková 2016; Hajdúchová *et al.* 2016; Koval'ová *et al.* 2018). The forestry sector accounts for 0.33% of Slovakia's GDP. While 0.33% is a small number, the economic importance of the forest sector lies in its importance for related industries in the national economy (wood processing industry). It is also important in terms of fulfilling the ecosystem services of the forest and recreation services for the people. Currently, approximately 1,200 to 1,300 companies with revenues of EUR 220 to 240 million operate in this industry. Due to the historical development in this specific sector, men outnumber women by approximately 3:1. According to the legislation valid until the year 2010, women were not allowed to carry out certain types of forestry jobs. Most employees in the forestry sector have completed secondary education, and the number of university-educated employees is rising slightly (Paluš *et al.* 2011; Green Report 2017; Sujová and Kovalčík 2017).

Human potential and its management are an integral part of each company management system (Wright *et al.* 2001; Tokarčíková and Kucharčíková 2015; Andrews 2016; Olšovská *et al.* 2016; Gottwald *et al.* 2017; Krizanova *et al.* 2018; Lizbetin 2018; Melo and González 2018; Zhu and Warner 2019). Since human employees are unique and have different strengths, the potential of all employees should be used wisely and developed in order to continue to create new value (Wright *et al.* 2001; Bajzikova *et al.* 2013; Poliačiková 2016; Vetráková *et al.* 2016; Ferraro *et al.* 2018). Systematic evaluation and motivation as well as subsequent evaluation and motivation processes are a prerequisite for the efficient development of employee potential.

Human motivation is a very complex system in which mutual overlaps and combinations of individual motives occur. Motives are elements of personality that stimulate human activity to achieve a certain goal (Stone 2005; Artz 2008). Motives can be considered the “engine” of someone’s actions or a driving force of his/her personality expressing the psychological causes or the reasons for the behavior. Moreover, a certain psychological sense of his/her behaviour is affected by motivation (Krišták *et al.* 2014; Minárová 2015; Davydenko *et al.* 2017; Jeong and Choi 2017; Kucharčíková and Mičiak 2018; Vokoun *et al.* 2018). Needs as the source of hidden motives together with interests, values, and ideals relating to the structure of human motivation are the most powerful concepts of human behavior. This creates a certain hierarchy of human motives. Stronger motives (*e.g.* aspiration and ambition) appear only when those of little importance are established (Xu *et al.* 2017). Motivation is a dynamic process driven by personal and socio-psychological factors that interact with one another (Kanfer *et al.* 2012). It is a process that is responsive to individual intensity, direction, and ongoing efforts to achieve the goal (Robbins *et al.* 2007). It represents a permanent process of efficiency and effectiveness, which needs constant and systematic attention (Daud 2015; Mura *et al.* 2017). Through employee motivation, an enterprise can achieve a competitive advantage but also the sustainability of business processes due to higher productivity (Stone 2005; Aydin and Tiryaki 2018). As each company works primarily with people, their abilities and talents, the main objective of the whole human potential development system is to create the conditions for effectively fulfilling the enterprise's business and working motivation of each employee. Job satisfaction can be achieved by motivating employees in a way that presupposes their systematic motivation and results in motivational processes (Lokar and Bajzikova 2008; Blašková and Hitka 2011).

In businesses terms, a motivational program deals with the issue of employee motivation. A motivation program’s aim is to optimize the utilization of the workforce in order to meet the company tasks and to satisfy and develop the personality of the employee (Robbins *et al.* 2007; Dewettinck and Remue 2011; Kanfer *et al.* 2012, Musová 2015). Moreover, conditions that encourage employee motivation in the workplace can be created using an optimal motivation program (Tansel and Gazioglu 2013; Daud 2015; Mura *et al.* 2017; Papp *et al.* 2018). Designing an effective motivation program can help the enterprise assume the areas with low efficiency in a given period or, for another reason, are significant for human activity. At the same time, attention must be given on the constant monitoring of their changes, because the set of motivation factors is not stable. Motivation factors can change due to age, knowledge, experience, education, environment, *etc.* (Nemec *et al.* 2017; Aydin and Tiryaki 2018).

Designing a motivation program should incorporate the knowledge and evaluation of all facts affecting employee performance and enterprise operations, *e.g.* information associated with technical, technological, and working conditions, as well as the nature of

the work environment, and the workplace equipment. A motivation program should also consider the job satisfaction or dissatisfaction regarding the enterprise's value orientation, attitude to work, colleagues, and superiors.

In order to make a meaningful impact on employee motivations, it is important to gather data associated with the social, demographic, and professional employee background, with the appraisal system of employees, system of social support in the enterprise, and human resource management (HRM) (Sánchez-Sellero *et al.* 2016; Seemann 2016; Ližbetinová 2017; Borisov *et al.* 2018; Brady and King 2018; Mészáros 2018).

White-collar employees in Slovak forest enterprises were investigated in this work. The economy of forest enterprises fully depends on white-collar employees. The motivations of white-collar employees can affect corporate motivations, the outsourcing jobs in the forest industry, and pricing and harvesting in the wood market. Almost 90% of the revenue in the forest industry is based on wood purchasing. Therefore, the system of motivation and controlling during timber harvesting is of great importance. White-collar employees are key employees in forest enterprises, which is why their motivation is very important. The forest industry in Slovakia is very concentrated. More than half of the forests are under the control of state-owned enterprises and are affected by political changes and lobbying. Since many of the forests in Slovakia are state-owned, the forest industry is placed in a unique position. A single enterprise is responsible for more than half of the market, making them a leader forest enterprises and market strategy. The enterprises were selected in three main regions in Slovakia: Western Slovakia (4 enterprises), Central Slovakia (3 enterprises + Directorate-General), and Eastern Slovakia (3 enterprises). The questionnaire was distributed to all white-collar employees in the selected enterprises. The survey response rate was 67% with cooperation from the Directorate-General. A system of motivation and control is well-developed in state-owned enterprises. In most non state-owned enterprises, there is not a system of motivation and control, as employees are motivated by the economic results of the enterprise or only by the basic salary they are paid. Town forests and forests managed by churches must participate in the financing of town budgets or various social events, so there is no money left over to be used as an incentive. In the case of forests managed by private owners, the employees must be paid dividends according to the economic results. For this reason, the system of motivation in forests managed by private owners, towns, or churches is developed only very rarely.

Therefore, the objective of this paper was to define whether there is a possibility to motivate white-collar employees in forest enterprises to perform better in a unified way or if various motivation programs must be designed and implemented.

EXPERIMENTAL

A questionnaire consisting of 30 closed questions was used to determine the level of motivation in the enterprise at the actual time (Hitka 2009). The questionnaire was divided into two parts. Socio-demographic and qualification characteristics of the employees were investigated in the first part. Basic data on respondents' age, gender, seniority, completed education, and job position were gathered in this part. Results are presented in Table 1.

The second part of the questionnaire deals with individual motivation factors used to find out the characteristics of the work environment, working conditions, appraisal

system and remuneration in the enterprise, personnel work in the company, social care system, and employee benefits as well as information about employee satisfaction or dissatisfaction, their value orientation, attitude to work, to colleagues, and to the enterprise. The motivation factors were arranged in alphabetical order in order not to affect the respondents. The employees were asked to assign one point of five points of importance from the Likert scale to each question.

Table 1. Demographic Variables

Factor		Absolute variables	Relative variables
Gender	Male	127	65.13
	Female	68	34.87
Age	Under 30 years	37	18.97
	31–40 years	59	30.26
	41–50 years	63	32.31
	50 and more years	36	18.46
Education	High school with GCSE	120	61.54
	University	75	38.46
Seniority	0–1 year	8	4.10
	1–3 years	31	15.90
	4–6 years	40	20.51
	7–9 years	43	22.05
	Over 10 years	73	37.44

The questionnaires were evaluated using the Statistics 12.0 software program (Dell, Oklahoma City, OK, USA). Descriptive statistics were used to characterize basic sets. Subsequently, cluster analysis (CLUA), Ward's method, and Euclidean distance were used to identify similarly motivated groups of employees (Triola 1989; Mason and Lind 1990). Applying CLUA resulted in favourable outcomes, especially where the studied set was physically fragmented into classes, and where objects tended to be grouped into natural clusters. This made it possible to reveal the structure of the studied set of objects and classify individual objects. The goal was to achieve a state where the objects within the clusters are as similar as possible while the objects from different clusters are the least similar.

In the next part, the clusters and their characteristic properties were profiled, and the distinguished groups by single-factor analysis of variance (ANOVA) were compared. Similarly motivated groups were defined using the CLUA. Following the analysis, the statistical significance of the differences was determined. The relation between the interval and the nominal variable was examined. The zero hypothesis on the compliance of the mean values of the various populations was tested by ANOVA, whereby the dispersion of the populations is supposed to be the same. No relation between the interval variable and the nominal variable was determined by the zero hypothesis. The significant F-statistic ($p < 0.05$) indicates that the observed differences in the mean of sample groups are too large to be random, so they are statistically significant (Scheer and Sedmák 2007). The difference between the groups can also be dependent on the variables. Subsequently, the hypotheses were as follows:

WH1: It is assumed that there are significant differences in the motivation among specific groups of employees.

WH2: It is assumed that different types of motivation programs in order to motivate specific groups of employees must be used.

RESULTS AND DISCUSSION

Altogether, 195 respondents from 11 branch offices of forest enterprises and the Directorate-General of the Forests of the Slovak Republic, State Enterprise, participated in this research. White-collar employees were of different gender, age, and seniority (*i.e.* the length of time working for the enterprise).

When analyzing the importance of the level of employee motivation, it is apparent that individual motivation factors were very similar in the selected groups. The differences can be noticed in the average value of the motivation factors evaluated as the best by the third group (Fig. 1). The differences in the order of the motivation factors for selected employee groups with similar motivations are shown in Table 2.

Following the responses, three basic similarly motivated groups of employees were identified using the CLUA according to similarity of motivation factors (Fig. 2). Similar motivational-oriented groups of employees are separated by the red line.

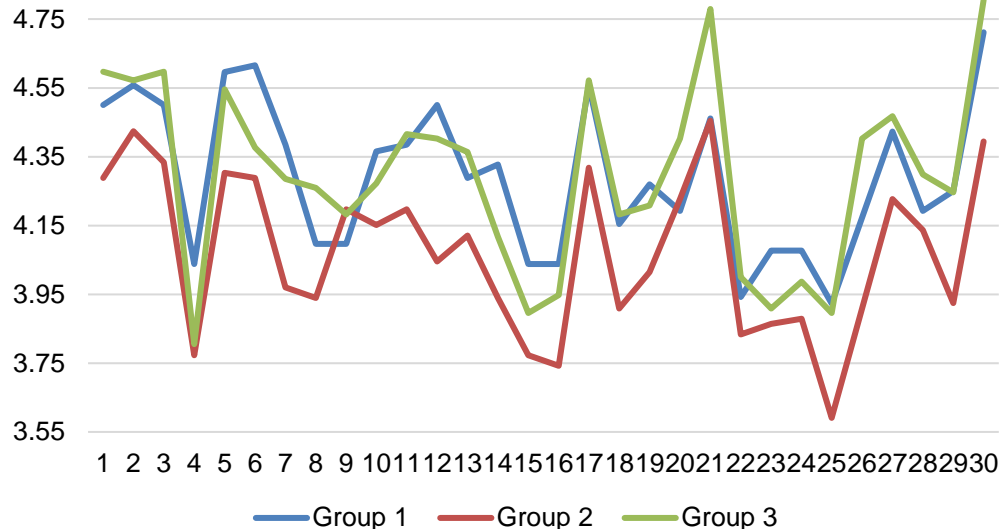


Fig. 1. Average values of the required level of motivation for selected employee groups

Statistically significant differences between the ten most important motivation factors within the specific groups were defined using the single factor analysis. When significant differences were defined, the effect of motivation programs on employees was determined. Only three of the mentioned factors (basic salary, fair appraisal system, and work environment) were significantly different (Table 3).

Significant differences between the groups in relation to the motivation factors of basic salary, fair appraisal system, and work environment are shown in Table 4 and Figs. 3 through 5. For the motivation factor of basic salary, there were differences between the first and the third groups of white-collar employees. The results dealing with the motivation factor of a fair appraisal system were different in the first and third employee groups. For work environment, there were differences between the first and the second group of white-collar employees and at the same time, between the first and the third employee groups. The results indicated that the first group had a larger statistical difference from the other groups, while the other two groups were more mutually similar.

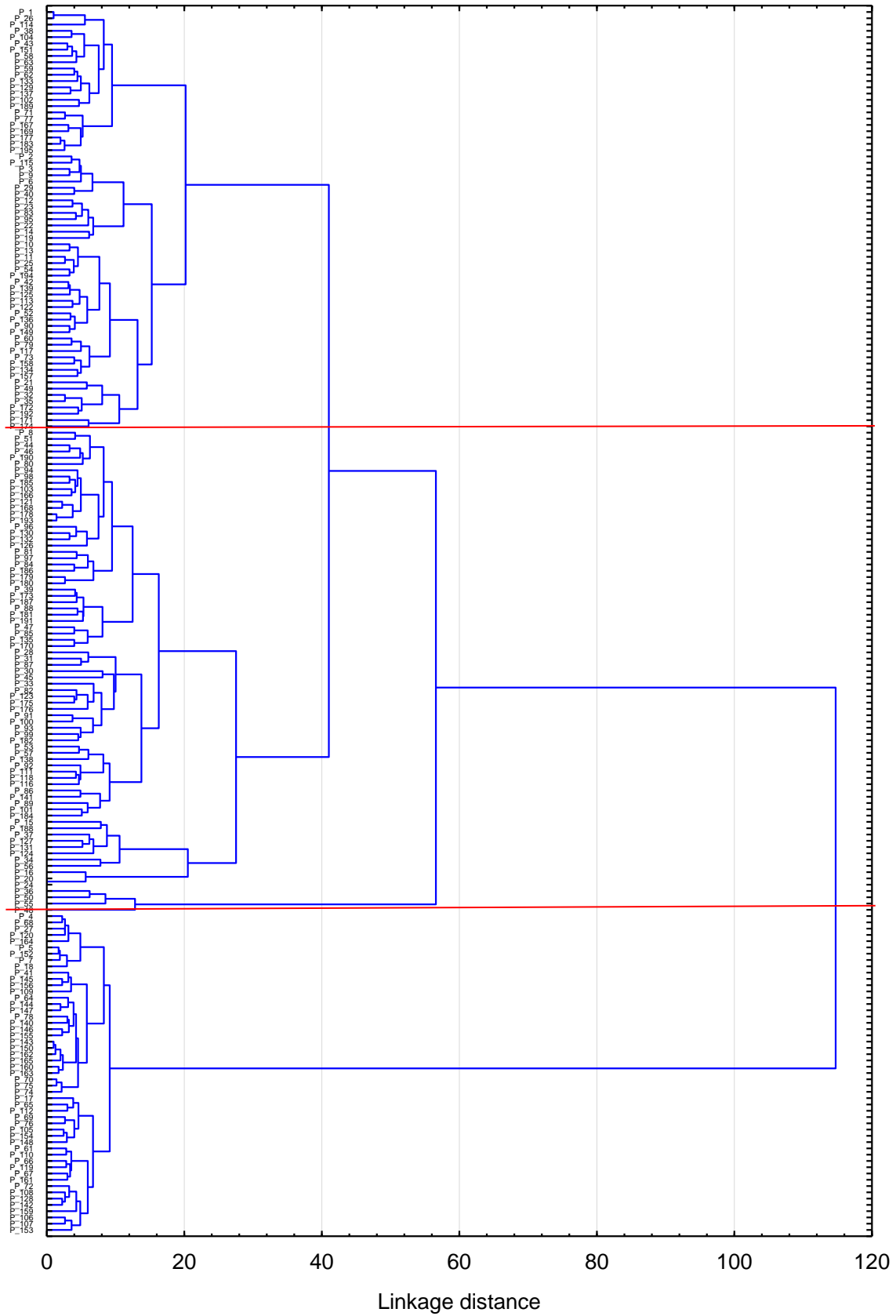


Fig. 2. Tree diagram for 195 cases, Ward's method, Euclidean distances

Table 2. Ranking the Importance of Motivation Factors of the Selected Employee Groups

Group 1	∅	Group 2	∅	Group 3	∅
Basic salary	4.71	Fair appraisal system	4.45	Basic salary	4.81
Communication in the workplace	4.62	Good work team	4.42	Fair appraisal system	4.78
Job security	4.60	Basic salary	4.39	Fringe benefits	4.60
Good work team	4.56	Fringe benefits	4.33	Atmosphere in the workplace	4.60
Supervisor's approach	4.56	Supervisor's approach	4.32	Good work team	4.57
Fringe benefits	4.50	Job security	4.30	Supervisor's approach	4.57
Work environment	4.50	Atmosphere in the workplace	4.29	Job security	4.55
Atmosphere in the workplace	4.50	Communication in the workplace	4.29	Relation to the environment	4.47
Fair appraisal system	4.46	Social benefits	4.23	Working hours	4.42
Relation to the environment	4.42	Relation to the environment	4.23	Work environment	4.40
Name of the company	4.38	Workload and type of work	4.20	Social benefits	4.40
Working hours	4.38	Working hours	4.20	Personal growth	4.40
Information about performance result	4.37	Information about performance result	4.15	Communication in the workplace	4.38
Career advancement	4.33	Free time	4.14	Job performance	4.36
Job performance	4.29	Job performance	4.12	Free time	4.30
Self-actualization	4.27	Work environment	4.05	Name of the company	4.29
Recognition	4.25	Self-actualization	4.02	Information about performance result	4.27
Social benefits	4.19	Name of the company	3.97	Opportunity to apply one's own ability	4.26
Free time	4.19	Opportunity to apply one's own ability	3.94	Recognition	4.25
Personal growth	4.17	Career advancement	3.94	Self-actualization	4.21
Individual decision-making	4.15	Recognition	3.92	Workload and type of work	4.18
Opportunity to apply one's own ability	4.10	Individual decision-making	3.91	Individual decision-making	4.18
Workload and type of work	4.10	Personal growth	3.91	Career advancement	4.12
Physical effort at work	4.08	Mission of the company	3.88	Stress	4.00
Mission of the company	4.08	Physical effort at work	3.86	Mission of the company	3.99
Physical demands for work	4.04	Stress	3.83	Prestige	3.95
Competences	4.04	Physical demands for work	3.77	Physical effort at work	3.91
Prestige	4.04	Competences	3.77	Competences	3.90
Stress	3.94	Prestige	3.74	Region's development	3.90
Region's development	3.92	Region's development	3.59	Physical demands for work	3.81

Note: Identical motivation factors are in bold.

Table 3. F-level and P-level for the Motivation Factors of Basic Salary, Fair Appraisal System, and Work Environment

Motivation Factor	Effect	SQ	Degrees of Freedom	AQ	F	P
Basic Salary	Abs. term	4085.068	1	4085.068	7228.305	0.000000
	Group	6.363	2	3.182	5.630	0.004208
	Error	108.509	192	0.565		
Fair Appraisal System	Abs. term	3959.556	1	3959.556	6755.632	0.000000
	Group	4.820	2	2.410	4.112	0.017836
	Error	112.533	192	0.586		
Work Environment	Abs. term	3539.256	1	3539.256	5740.152	0.000000
	Group	7.155	2	3.578	5.802	0.003575
	Error	118.383	192	0.617		

Note: Statistically significant motivation factors are in bold

Table 4. Statistically Significant Differences Between Groups in the Motivation Factors of Basic Salary, Fair Appraisal System, and Work Environment

Motivation Factor	Group	{1}	{2}	{3}
		M= 4.3939	M= 4.7115	M= 4.8052
Basic Salary	1 {1}		0.058859	0.003191
	2 {2}	0.058859		0.766956
	3 {3}	0.003191	0.766956	
Fair Appraisal System	Group	{1}	{2}	{3}
		M= 4.4545	M= 4.4615	M= 4.7792
	1 {1}		0.998664	0.030809
	2 {2}	0.998664		0.054177
	3 {3}	0.030809	0.054177	
Work Environment	Group	{1}	{2}	{3}
		M= 4.0455	M= 4.5000	M= 4.4026
	1 {1}		0.005116	0.018399
	2 {2}	0.005116		0.768710
	3 {3}	0.018399	0.768710	

Note: Statistically significant differences are in bold.

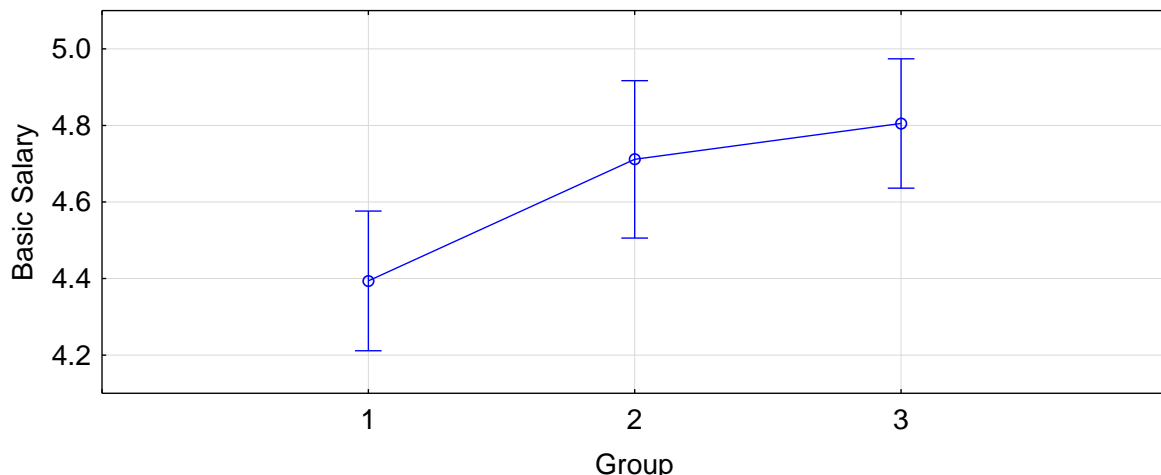


Fig. 3. Comparison analysis test – Basic salary at the confidence interval of 0.95

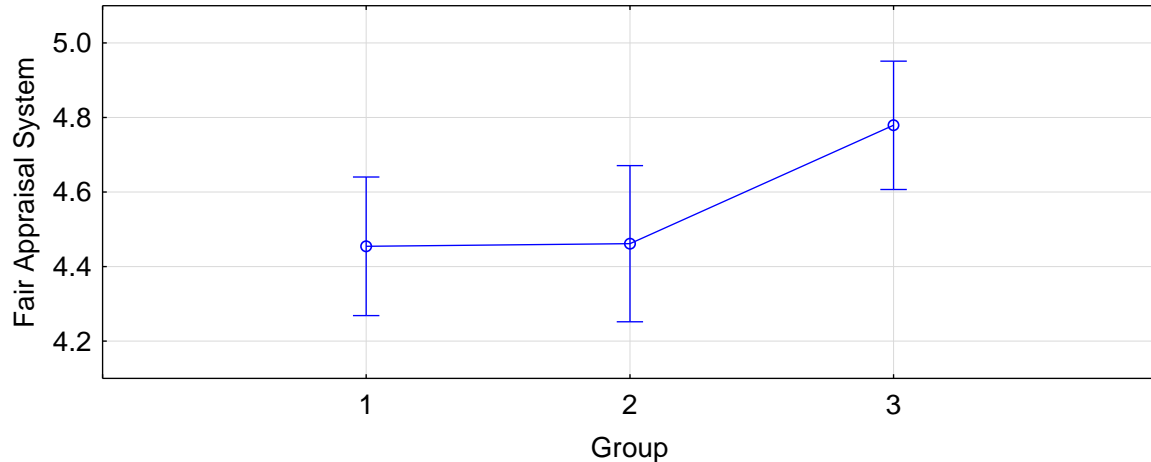


Fig. 4. Comparison analysis test – Fair appraisal system at the confidence interval of 0.95

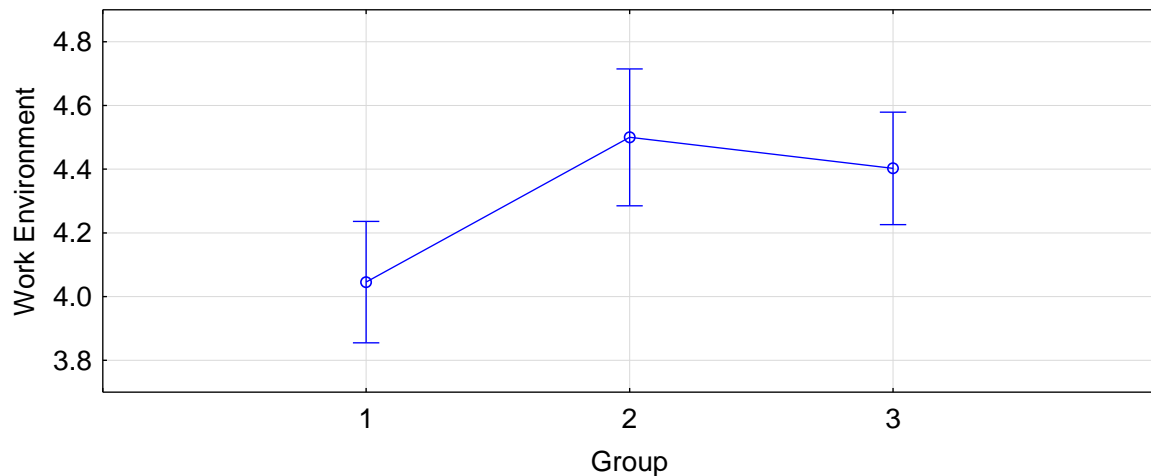


Fig. 5. Comparison analysis test – Work environment at the confidence interval of 0.95

The remaining seven motivation factors (communication in the workplace, job security, good work team, supervisor's approach, fringe benefits, atmosphere in the workplace, and relation to the environment) were similar in terms of employees' needs. While these motivation factors had various average values, they were not statistically different (Table 5).

Continuing employee motivation as well as its evaluation and evaluation processes are prerequisites for the effective development of the unlimited potential of human resources. The importance of human resources is strategic. The results confirmed hypothesis H1 and rejected hypothesis H2. As work conditions and employee requirements change, the motivation program must be updated regularly. Professionals in the field of HRM conclude that technology can be bought, a new company management system can be implemented, and financial resources can be borrowed, but the most essential asset determining a company's success is a high-quality workforce (Ahmad *et al.* 2012).

Table 5. F-level and P-level for Insignificant Motivation Factors

Motivation Factor	Effect	SQ	Degrees of Freedom	AQ	F	P
Communication in the Workplace	Abs. term	3722.989	1	3722.989	6503.280	0.000000
	Group	3.264	2	1.632	2.850	0.060272
	Error	109.916	192	0.572		
Job Security	Abs. term	3815.938	1	3815.938	5835.626	0.000000
	Group	3.097	2	1.548	2.368	0.096418
	Error	125.550	192	0.654		
Good Work Team	Abs. term	3877.905	1	3877.905	6906.506	0.000000
	Group	0.882	2	0.441	0.785	0.457429
	Error	107.805	192	0.561		
Supervisor's Approach	Abs. term	3817.451	1	3817.451	6914.481	0.000000
	Group	2.685	2	1.342	2.432	0.090600
	Error	106.002	192	0.552		
Fringe Benefits	Abs. term	3808.050	1	3808.050	5142.172	0.000000
	Group	2.501	2	1.251	1.689	0.187506
	Error	142.186	192	0.741		
Atmosphere in the Workplace	Abs. term	3782.318	1	3782.318	6539.455	0.000000
	Group	3.484	2	1.742	3.011	0.051551
	Error	111.050	192	0.578		
Relation to the Environment	Abs. term	3632.708	1	3632.708	5226.446	0.000000
	Group	2.220	2	1.110	1.597	0.205222
	Error	133.42	192	0.695		

Successful entrepreneurs should focus their attention on increased efficiency and sustainable economic growth (Bartuska *et al.* 2016; Nývlt 2016; Hanzl *et al.* 2017; Gope *et al.* 2017; Xu *et al.* 2017; Ružinská *et al.* 2018) because of a constantly changing business environment, technological progress, and economic globalization (Faletar *et al.* 2016; Papula *et al.* 2018). Appropriate enterprise investment into employees or HRM is an important part of business development (Jackson *et al.* 2014; Žul'ová *et al.* 2018).

Employee motivation can work effectively only if it is based on a proper understanding of motivation factors and their differentiation in relation to certain types of employees. Different groups of employees are motivated in different ways, so it is necessary to estimate and apply various types of motivation factors correctly. In order to impact employees in an effective way, the motivation process must reflect employees' needs, their behavior, and their performance in a positive way. Therefore, it is necessary to develop a comprehensive motivation program that combines the demands of the company and its employees. The performance of each employee results from the unique set of motivation factors. Some motivation factors are responded to in a positive way, while others are met with a negative response and resistance from employees. The optimal situation occurs when the employee is satisfied in their work environment and they are motivated in the long run (Huang 2010; Nadányiová 2014; Igaz *et al.* 2015; Dolobac *et al.* 2016; Gosselin *et al.* 2017).

The CLUA was able to determine the motivation types in the enterprise (groups of people with similar motivation profiles), the similarities and differences in these motivation types, and the typical features of each type. Following the clusters, the similarity in the respondents' motivation can be used to implement motivation factors in motivation

programs for similarly motivated employee groups. The CLUA results showed that the needs of the employees are not the same. Similar results were observed in the analysis of motivation carried out in wood processing enterprises (Hitka *et al.* 2017), where individual groups of employees showed statistically significant differences in their motivation needs.

The research into the motivation structure of employees' motives is within the scope of the theory of employee motivation. Knowing what motivates employees is one of the first steps in designing a motivation program for an organization. The ladder of values is different for each person. The existence of numerous factors that motivate employees to perform better are highlighted in previous research studies (Srivastava and Kakkar 2008; Almobaireek and Manolova 2013; Fakhrutdinova *et al.* 2013; Stopka *et al.* 2014; Damij *et al.* 2015; Kamasheva *et al.* 2015; Myint *et al.* 2016; Kampf *et al.* 2017). Salary is one of the most significant motivation factors for employees (Androniceanu 2011). Benefits, rewards, and promotions are used in conjunction with salaries to motivate employees (Dobre 2013). Employees can be motivated not only by offering them financial rewards, but also by providing non-monetary incentives or by changing the type of work they perform (Sturman and Ford 2011). An increased number of paid vacation days and more frequent company events are among the most frequently used non-monetary incentives (Stachová *et al.* 2018). According to Sherif *et al.* (2014), employees can also be motivated by a well-designed system of education or training. Setting demanding but achievable goals is considered a key motivation factor that leads to higher performance (Sturman and Ford 2011). Research studies have indicated that public sector employees exhibited weaker intrinsic employee motivation compared to employees working in the private sector. (Buelens and Van den Broeck 2007). One explanation for this is that public sector employees are frustrated and rarely see the results of their work (Re'em 2011). According to Urbancová and Hudáková (2015), public sector employees are motivated especially by the workload, self-development, recognition, autonomy, interesting work, and the opportunity to learn something new.

There are no universal guidelines to motivate all employees. In general, managers assume that employees only want money (Stachová *et al.* 2018). What motivates employees depends on economic situation. In times of economic crisis employees are most concerned about psychological circumstances, whereas in times of economic recovery, employees consider social needs to be of more importance (Faletar *et al.* 2016). They are often surprised that other motivation factors may be more powerful under certain circumstances. Employee motivation can work effectively only if it is based on adequate knowledge and understanding of motivation factors and their differentiation in relation to certain types of employees. Incorrectly designed and applied motivation programs usually have a negative impact on employees and do not motivate them to maximize their performance. Therefore, a reasonably differentiated motivation program based not only on finances can be effective. With today's increasing demands and decreasing technology costs, employees who are talented, capable, responsible, disciplined, creative, and motivated can provide a real competitive advantage for a company (Kubasáková *et al.* 2014; Podmanický and Nývlt 2015; Mészáros 2018; Poór *et al.* 2018; Kohnová *et al.* 2019; Stachová *et al.* 2019).

CONCLUSIONS

1. A study of the importance of the level of employee motivation revealed that the contributions of individual motivation factors to overall motivation was very similar in the selected groups.
2. Differences can be seen in the average values of the motivation factors. Only three motivation factors (basic salary, fair appraisal system, and work environment) were statistically significantly different between the groups.
3. A unified motivation program for employees consisting of the highest valued motivation factors such as communication in the workplace, job security, a good work team, supervisor's approach, fringe benefits, atmosphere in the workplace, and relation to the environment can be created for the employees.
4. Other factors, such as basic salary, fair appraisal system, and work environment are statistically significantly different, so they must be applied appropriately, especially in the case of selected specified employee groups.

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