

THE EFFECT OF THE COVID-19 CRISIS ON EMPLOYEE MOTIVATION IN THE ENTERPRISES IN FOREST-BASED SECTOR IN SLOVAKIA

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ABSTRACT

The aim of the paper is to define the level of motivation of employees in the enterprises in the forest-based sector in Slovakia in time, namely before the COVID-19 crisis and after the crisis, and subsequently to determine the most important motivation factors. Data were obtained through quantitative research. The research sample consisted of 920 respondents working in forest enterprises and 1,494 working in wood-processing enterprises. Following the multivariate analysis of dispersion, the employees' motivation level in the enterprises in the forest-based sector was defined and compared. The recognition of an insignificant change in group motivation factors is the result of the research. Another result is the realization that even with the essential motivation factors, there were no significant changes due to the impact of COVID-19. At the same time, they were balanced within the sectors. The contribution of the paper is comparing the level of motivation and motivation factors in the forest-based industry over time and the subsequent possibility of designing managerial models of motivation.

Keywords: employee motivation, motivation factors, forest economy, wood-processing industry, Slovak Republic.

INTRODUCTION

Currently, there are practically no areas of the enterprise activity not affected by the human factor (Skýpalová *et al.*, 2022; Drašković *et al.*, 2020; Sekova *et al.*, 2016; Gottwald *et al.*, 2015). Despite this, the issue of human resources and their motivation is not given the attention it deserves. According to present research studies (Pereira-Moliner *et al.*, 2021; Smerek and Vetrakova, 2020; Vetrakova and Smerek, 2019; Kucharcikova and Miciak, 2018; Vnoučková, 2013), awareness of needs and subsequent satisfaction is an essential factor in increasing the performance and competitiveness of enterprises, which simultaneously contributes to the satisfaction and efficiency of employees. Being familiar with the level of employee motivation factors can be used by employers to improve the quality of processes, to actively influence the work performance of employees, and stabilize them in the enterprise (Bechter *et al.*, 2022; Jankelova *et al.*, 2020; Lazarević *et al.*, 2020; Nedeliakova *et al.*, 2016).

In a broader sense, motivation includes striving, volition, desire, and goal. It is a force that energizes, directs, and maintains goal-oriented behaviour (Demartino and Barbato,

2003). It is a multi-factor complex phenomenon of society influenced by the system of values, obligations, and perceptions of different people (Close and Martinus, 2015). In the work process, motivation is understood in a narrower sense. It is a process affecting an employee to a specific activity, which leads to the satisfaction of his/her needs and, at the same time, to the enterprise's goals (Jankelová *et al.*, 2021; Inceoglu *et al.*, 2012). At the same time, it is a primary tool for regulating the behavior of employees in the workplace (Arnania-Kepuladze, 2010). According to present research (Kmecová, 2021; Mura, 2021; Mura *et al.*, 2021; Bajzikova and Bajzik, 2020; Kovačević *et al.*, 2020; Stacho *et al.*, 2017; Bogdanovic *et al.*, 2016) in a society with a particular structure and value system, motivation depends not only on personal characteristics of each individual, his/her sociodemographic characteristics but also on company policy, culture and other factors.

The COVID-19 pandemic can be considered one of the most critical factors significantly affecting all fields of economic and social life. The COVID-19 pandemic represents the most important global health disaster of the century and the most significant crisis humanity has faced since World War II (Chan *et al.*, 2020; Xanthakis, 2019). COVID-19 has been characterized as a pandemic by the World Health Organization (2020) due to the high numbers of confirmed cases and deaths and has posed an unprecedented health crisis to human beings. Restrictions on the public spaces, quarantine, and social distancing are key measures implemented to tackle the COVID-19 pandemic and protect public health (Honey-Roses *et al.*, 2020). Although the COVID-19 pandemic is not over yet, it is possible to analyze its impact on various areas of social life (Musa *et al.*, 2015). In this regard, the task of business management is to manage the crisis and adapt to new conditions (Paunescu and Matyus, 2020; Myskova and Hajek, 2016).

Forest and wood-processing enterprises perform essential functions in the country. Forest enterprises are irreplaceable regarding ecological stability, rational use and sustainable development (MPRV, 2021). Sustainable and planned forest management is their goal. The development of forestry depends on a whole range of economic and natural factors, including changes in the importance of forest functions, conflicts between ecology and the economy of forest management, the development of wood prices on world markets, an increase in the number of catastrophic situations in forests but also the effects of climatic changes and their impact on forest ecosystems. The wood-processing industry has a unique position in Slovakia and in the world. It belongs to the most important and dynamically developing industries in the entire European Union (Forestportal, 2015). The aim of the paper is to define the level of employee motivation in the enterprises of the forest-based sector in Slovakia in time, namely before the COVID-19 crisis and after the crisis, and subsequently to determine the most important motivation factors.

EXPERIMENTAL PART

Employees working in enterprises of the forest-based sector, especially employees in the forest enterprises (FE) and wood-processing enterprises (WPE), were the object of investigation. The sample consisted of respondents from every region in Slovakia of different gender, ages, education, and job position to achieve representativeness. The sample set was determined by quota selection according to the control characteristics of gender, age, and occupation.

The questionnaire was used to gain the data. The questionnaire was distributed anonymously throughout the territory of the Slovak Republic. It consisted of two parts. The first part aimed to identify the respondent's socio-demographic profile related to age, gender,

number of years of service in the company, completed education, and job position. The second part of the questionnaire consisted of thirty closed questions regarding employee motivation preferences. Motivation factors were divided into those relating to finances, career aspiration, work conditions, and social needs. The subject of the investigation was motivation factors relating to career aspiration (possibility of applying one's own skills, job performance, competence, prestige, independent decision-making, self-actualization, recognition, education, and personal growth), work conditions (physical effort at work, job security, workload and type of work performed, information about performance results, working hours, work environment, work processes, mental effort, stress), social needs (social benefits, company vision, name of the organization, development of the region, relation of the organization to the environment, free time), finances (basic salary, fringe benefits, fair appraisal system) and relationship (atmosphere in the workplace, good work team, supervisor's approach, communication in the workplace). The motivation factors were arranged in alphabetical order to avoid biasing the respondents. Respondents evaluated the importance of individual motivation factors with values. Rating 1 expressed the unimportance of the motivation factor for the respondent; on the other hand, value 5 said the most significant importance of the motivation factor.

When investigating a questionnaire, a reliability test was carried out using Cronbach's alpha, which defines reliability as the proportion of variability in responses resulting from differences between respondents (Rimarcik, 2007). The internal reliability of individual scales of all analyzed motivation factors was measured when Cronbach's Alpha was $\alpha = 0.937$ in the case of the forestry industry, $\alpha = 0.934$ in the case of wood-processing enterprises, and together 0.935. Furthermore, the correlation between the selected motivation factor (corrected item) and the rest of the motivation factors (total correlation) was tested. The results were more significant than 0.3 (values range from 0.936 to 0.940) in all cases, which, according to de Vaus (2002), indicates that the items belong to the index and the index is one-dimensional.

The Yamane Taro method was used to determine the minimum range for both groups (forest and wood-processing industry employees) (Richterová *et al.*, 2009). The Yamane Taro method calculates the minimum sample size given the final population size and the chosen error estimation. When calculating the minimum sample for forest and wood-processing enterprises, the population size was averaged from 2017 to 2022, i.e., forest enterprises with an average of 28,083 employees and wood-processing enterprises with an average of 8,748 employees. The minimum range of the monitored sample was 383 respondents working in forest enterprises and 394 working in wood-processing enterprises to provide the necessary representativeness.

Preliminary information from the questionnaire was processed in Microsoft Excel. At the same time, an input data matrix was prepared for the analyses carried out in the program STATISTICA 12. The data were evaluated using basic descriptive statistics (relative and absolute frequency, weighted arithmetic mean, standard deviation, and reliability intervals), a comparison of the mean values of two groups using Student's t-test (two-tailed) at the significance level of 5%. The following research hypotheses were tested:

1. Research hypothesis 1 (RH1) – We assume that during the crisis, there was a significant change in the level of motivation factors in terms of employees in both the FE and WPE sectors.
2. Research hypothesis 2 (RH2) – We assume that the level of importance of the ten most important motivation factors for the monitored periods is significantly different in terms of employees in the FE and WPE sectors.

- RH 2.1 – We assume that the level of importance of the ten most important motivation factors in the pre-pandemic period is significantly different in terms of employees in both the FE and WPE.
 - RH 2.2 – We assume that the level of importance of the ten most important motivation factors during the pandemic is significantly different in terms of employees in both the FE and WPE.
3. Research hypothesis 3 (RH3) – We assume that the perception of the importance of the two most important motivation factors from the two most vital groups of factors in both monitored fields significantly changed due to the crisis.

RESULTS AND DISCUSSION

As part of the questionnaire, the socio-demographic profile of the respondent was investigated. 920 respondents working in forest enterprises (66.7% men and 33.3% women) and 1,494 respondents working in wood-processing enterprises (67.7% men and 32.3% women) took part in the questionnaire. To comply with the principles of empirical research, quota selection according to age and job position was set within the sample.

The research was focused on the analyses of five groups of motivation factors (motivation factors relating to finance, mutual relationship, work conditions, career aspiration, and social needs) with dependence on the importance of individual groups regarding the time before and during the COVID-19 crisis (Figure 1).

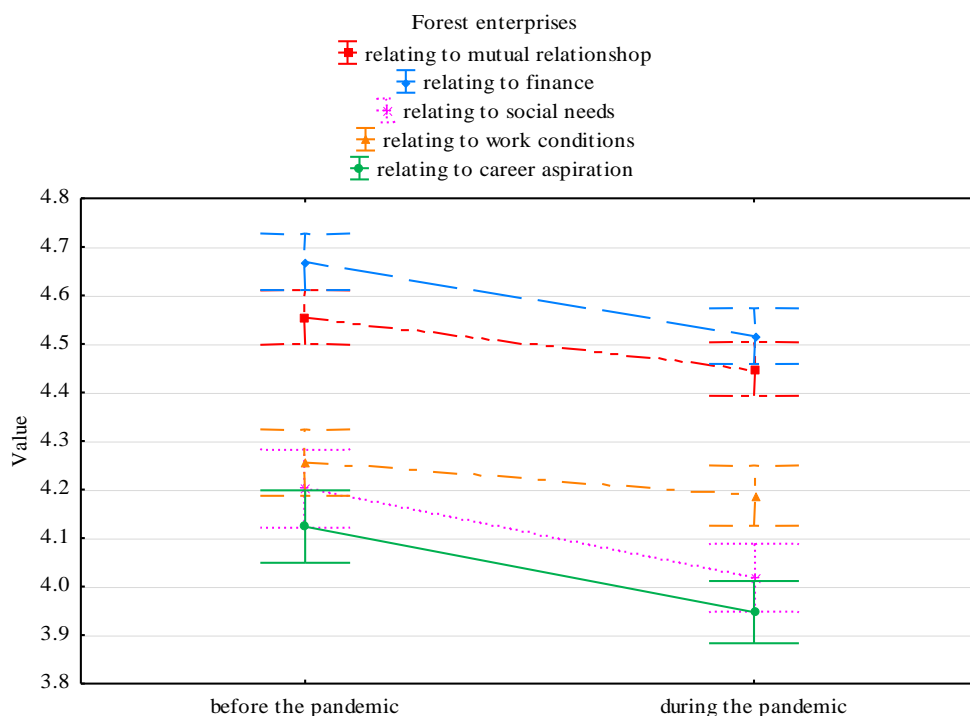


Fig. 1 The level of employee motivation in forest enterprises.

Among employees working in forest enterprises, a dominant need for motivation factors relating to finance and relationship can be observed. The level of importance of most groups of motivation factors was perceived more intensively before the crisis than among the employees working in the wood-processing industry (Figure 1). Unlike wood-processing

enterprises, the perception of the importance of factors relating to finance dropped significantly at the level of 5%. This significant decrease was also recorded in the case of factors relating to social needs and career aspiration. In both groups of employees, it can be stated that the structure of groups of motivation factors in terms of the importance attributed. In contrast, the factors relating to career aspiration and social needs were perceived as the least important (Figures 1 and Figure 2).

Employees in the wood-processing industry had the highest need for motivation factors relating to finance and relationship (Figure 2). Another group was the group of the motivation factors relating to work conditions. An increase in importance was visible in all groups of motivation factors. There was a significant increase in the factors relating to finance and work conditions. Career and social factors were the least important for employees working in the wood-processing industry.

Following the achieved results in Figure 1 and Figure 2, the research hypothesis and RH1 assuming a significant change in the perception of importance in the case of all groups of motivation factors due to the crisis can be rejected. This change occurred in the WPE as part of a significant increase in the importance of the factors relating to finance and work conditions (primarily job security). On the contrary, in the FE, a change was identified (a significant decrease at the 5% significance level) in the motivation factors relating to finance, relationship, social needs, and career aspiration. This change occurred in the WPE as part of a significant increase in the importance of the factors relating to finance and work conditions (primarily job security).

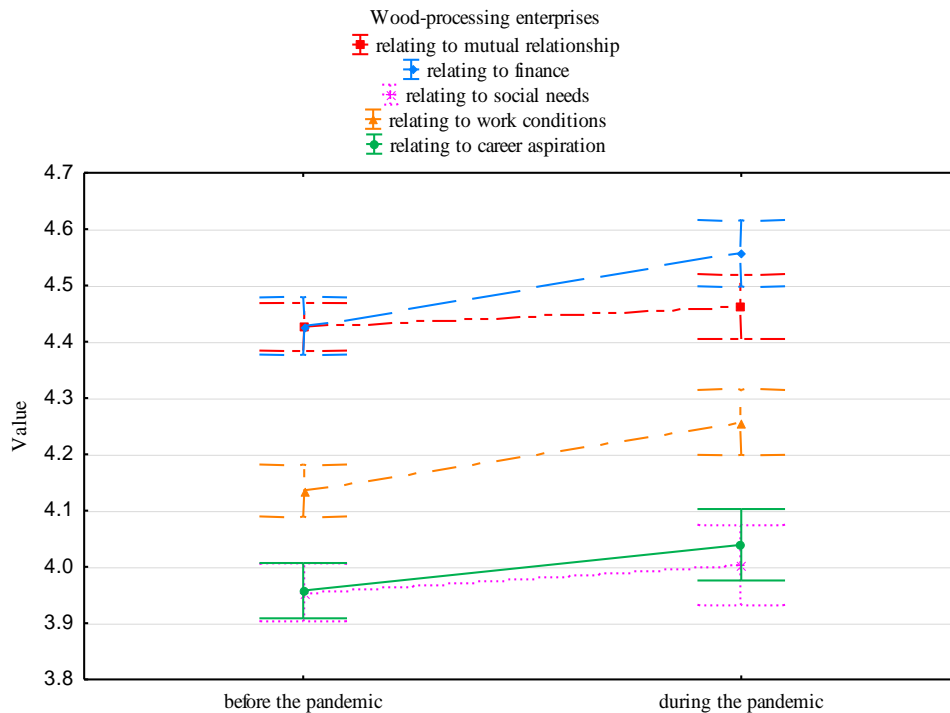


Fig. 2 The level of employee motivation in wood-processing enterprises.

Subsequently, the 10 most important motivation factors in terms of the order of importance for employees were analysed. An overview of the arithmetic means of factor importance ratings and their comparison between the group of employees working in forest enterprises and wood-processing enterprises before and during the pandemic was provided in Table 1.

Tab. 1 The comparison of the level of importance of motivation factors in the case of employees in forest industry and wood-processing industry before and during the pandemic.

Motivation factor	Before the pandemic				During the pandemic		
	Mean		p-value	Cohen's d	Mean		p-value
	FE	WPE			FE	WPE	
Basic salary	4.66	4.42	<.001*	0.829	4.34	4.42	0.312
Good work team	4.55	4.46	0.03*	0.747	4.30	4.40	0.131
Atmosphere in the workplace	4.53	4.44	0.029*	0.747	4.29	4.36	0.318
Fair appraisal system	4.60	4.32	<.001*	0.86	4.33	4.28	0.476
Fringe benefits	4.53	4.33	<.001*	0.811	4.15	4.40	0.001*
Supervisor's approach	4.53	4.28	<.001*	0.846	4.24	4.28	0.617
Job security	4.55	4.27	<.001*	0.856	4.30	4.19	0.177
Working time	4.35	4.22	0.009*	0.848	4.15	4.29	0.085
Communication in the workplace	4.39	4.24	0.006*	0.868	4.08	4.16	0.309
Social benefits	4.40	4.15	<.001*	0.879	4.01	4.13	0.186

Note: * $p < 0.05$

The most important motivation factors in both industries included a good work team, atmosphere in the workplace, basic salary, fringe benefits, fair appraisal system, supervisor's approach, job security, working hours, communication in the workplace, and social benefits. The mentioned motivation factors were common in both monitored industries, but a different level of satisfaction was attributed to them in each sector. Using the comparison of mean values by Student's t-test (two-tailed), significant differences were determined (following the results of the p-value at the significance level of 5% and after considering Levene's test). In comparing perceived importance among the group of employees working in forest enterprises and those working in wood-processing enterprises before the pandemic, the differences found were significant for all 10 motivation factors. The value of Cohen's d provides information about the substantive significance of the identified differences, which took on values corresponding to a more significant effect size (Table 1).

On the contrary, in the case of this comparison during the pandemic, a difference was identified only in the fringe benefits with a substantive significance value of 0.829 (Cohen's d). Thus, a significant tendency of the uniform influence of crisis determinants on the preferences and expectations of employees can be observed. Whereby the effects determined by the given field were temporarily decreasing can be assumed.

The results presented in Table 1 also provide a basis for rejecting research hypothesis RH2, which assumed that the level of importance of the 10 most important motivation factors in the monitored periods is significantly different in terms of employees in the FE and WPE sectors. This hypothesis was not verified, even though RH 2.1 was at the 5% significance level. Given that the level of importance attributed to the 10 most important motivation factors was equalized between the monitored industries during the pandemic, a significant difference was identified only in the case of fringe benefits. It resulted in the rejection of the established hypothesis RH 2.1.

An analysis of the change in the perception of the preferences of the two most important motivation factors relating to finance and relationship is presented in Figure 3. These changes were also checked regarding the possibility of generalization through the Student's t-test (two-tailed). Due to the impact of the COVID-19 crisis, a significant decrease in the perception of a fair appraisal system ($p = 0.003$) and a basic salary ($p = 0.006$) was identified among employees working in forest enterprises. On the contrary, among

employees working in the wood-processing industry, the changed conditions of COVID-19 signified an increase in the perception of the importance of the basic salary ($p = 0.019$). Interestingly, the comparison of both industries showed a harmonization of the perception of importance in times of crisis when even enterprises with a better background in job security and financial evaluation increase their preferences.

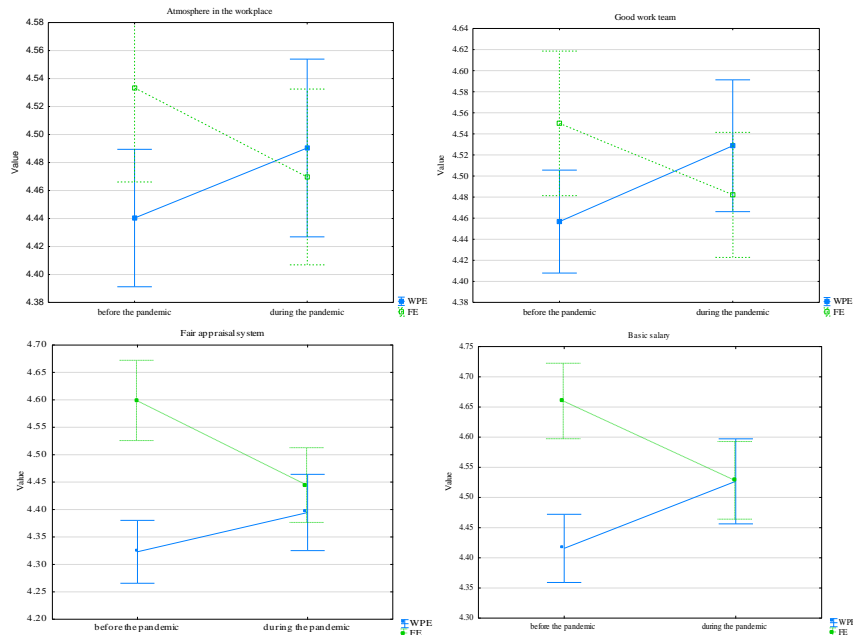


Fig. 3 Development of selected motivation factors relating to finance and relationship.

In research hypothesis 3 (RH3), it was assumed that there was a significant change in the perception of the importance of the two most important motivation factors from the two most vital groups of factors in both monitored sectors due to the crisis. Following the results of the t-test and the results presented in Figure 3, RH3 can be rejected because significant changes occurred in both industries only in the case of the motivation factor of the basic salary and in the case of employees working in forest enterprises also in the case of the second factor relating to finance – fair appraisal system of the employee at the 5% significance level.

From the results presented, the conclusion can be drawn that the most important factors in both industries are those relating to finance and relationship. Due to the impact of the crisis, there was a change in the perception of the importance of factors relating to finance as a representative of hygiene factors, or the so-called Physiological needs (from Maslow's pyramid of needs). Thus, according to the results, the impact of the crisis in both industries maintained the same level of importance of relationship-related factors. Still, there was a change in the level of finance-related factors. The third most important group of motivation factors – work conditions either did not change significantly with the arrival of the crisis or increased significantly for the group of employees working in wood-processing enterprises (especially in the case of job security).

When determining the motivational needs of employees working in forest enterprises and wood-processing enterprises, we drew the conclusion that, in terms of motivation factors, employees working in wood-processing enterprises most prefer the motivation factors good work team, the atmosphere in the workplace, basic salary, fringe benefits, fair appraisal system, supervisor's approach, job security, working hours, communication in the

workplace and work environment. The basis of employee motivation in wood-processing enterprises were finance-, relationship- and work condition-related factors. Research shows that employees working in forest enterprises were motivated by factors such as basic salary, job security, fair appraisal system, the atmosphere in the workplace, fringe benefits, supervisor's approach, working hours, communication in the workplace, and the relationship of the company to the environment. These were mainly the factors relating to finance, relationship, work conditions, and social needs.

The results are confirmed by the research of Sánchez-Sellero *et al.* (2018), Pruneda (2014), and Casuneanu (2011), which reached the same conclusions, i.e., finance-related motivation factors are the most important motivation factors. The importance of these factors is growing. Al-Madi (2017) adds that relationship-related motivation factors are considered the most important in addition to finance-related motivation factors. Copuš *et al.* (2019) add to our results that the culture of production workers has a lower motivational potential than the subculture of non-production workers. Consistent with our results, Hidayah (2018) found that leadership has a positive and significant impact on employee job satisfaction and motivation. Vrabcová and Urbancová (2022) add to these results that with the advent of COVID-19, organizations began to lay off 50+ employees, employee turnover increased, and employee demands changed. Moreover, the rapid spread of the COVID-19 pandemic highlighted the strategic importance of agile entrepreneurship (Revutska and Antlová, 2022).

Another possibility of research direction is the analysis in terms of gender differences (Arnania-Kepuladze, 2010; Peterson, 2004; Demartino and Barbata, 2003), age (Inceoglu *et al.*, 2012), education (Close and Martinus, 2015), and other factors.

CONCLUSION

Enterprises often need to realise that the human factor represents their competitiveness, which sets other company resources in motion and creates added value. The way people behave and develop in businesses is diverse. It also depends on the applied corporate culture, philosophy, management communication, and enterprise motivation level. Prosperous enterprises realise that the most valuable capital is their employees and motivation. Motivation is one of the essential components of human resource management. In the work process, motivation deals with factors of two levels: the motivated employee and the business that motivates. For the enterprise, motivation is an effective tool. The task of the enterprise is to appreciate and understand the necessary procedures affecting employee support. Motivation is often subject to strong fluctuations depending on meeting a person's needs, life situations, and the internal and external environment. The reason is the action of various factors affecting motivation to varying degrees.

Moreover, these factors do not act in isolation but are interconnected. For each individual, a different motivation factor represents the driving force, so the enterprise management must take a differentiated approach to motivate employees. Creating an incentive programme is demanding and costly for every business, while its effect must be economically returnable. Therefore, a thorough and targeted analysis of employees' motivational needs is essential.

The research showed that there is a decrease in all groups of motivation factors among employees working in forest enterprises. The motivational preferences of employees working in the wood-processing industry have changed within the groups of motivation factors during the COVID-19 crisis. Employees attach more importance to them. However, this change is only significant for some groups. Within the comparison of both monitored

groups, significant differences exist in the most important motivation factors, especially before the COVID-19 crisis. During the impact of the COVID-19 crisis, the needs of employees working in enterprises of the forest-based sector are balanced in terms of motivation factors in groups as well as individually.

The results of this paper can be used as a baseline for future research based on comparing motivation levels over time. Continuous monitoring of employee mental health and responding flexibly to it is the key to a productive and motivated workforce. It is mainly due to the impact of the COVID-19 pandemic and its effect on changes in motivation levels, as well as the current emerging economic crisis. Which, at the moment, may be a partial limitation of the research.

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