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Employee motivation during the time of the crisis in agricultural and forestry organizations: Case study

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Abstract: The aim of the paper was to define the effect of the pandemic on employee motivation. Following the questionnaires, the level of motivation in agricultural and forestry organizations before the COVID-19 pandemic in the years 2018–2019 and after the crisis in the years 2020–2021 was defined. The hypotheses were tested using the variance analysis with interactions. The analysed field (financial, social, work, and career-related) was presented by the dependent variable. The categorical independent variables were used to describe the age, gender, and the time before or after the COVID-19 pandemic. A reduction in the level of the requirements in all areas of motivation in terms of age and gender is the result of the study. The needs and requirements of the employees of agricultural and forestry organizations are reduced. The order of importance of the groups stays almost the same. The finding that the impact of the COVID-19 pandemic has, besides others, effect on human resource management, especially on employee motivation, is considered the main contribution of the study. The results of the study result in enhancing the knowledge about economic development through human resource management at the time of the health crisis caused by the COVID-19 pandemic.

Keywords: age; ANOVA; COVID-19 pandemic; gender; human resource management

The COVID-19 pandemic, the most severe global health crisis, affects all fields of economic and social life (Chakraborty and Maity 2020; Kalina 2020; Shah-Nelson et al. 2020). Slovakia was not prepared for the pandemic. There was no crisis plan to overcome extraordinary situations. All types of industries, ve-

hicle movement, and human activity were stopped, maybe for the first time in modern history (Laudari et al. 2021). COVID-19 pandemic has been characterised as a pandemic by the World Health Organization due to the high number of confirmed cases and deaths and has posed an unprecedented health crisis

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to human beings (Chan et al. 2020). Countries across the world have introduced policies such as stay-at-home-lockdowns, restrictions on public events, social gatherings, and public transport, the closure of schools and workplaces, and public COVID-19 pandemic information campaigns. Further economic impacts of the COVID-19 pandemic can be expected in all fields of the economy. The recovery of the economy can take several years. According to Raziq and Maulabakhsh (2015) and Paunescu and Matyus (2020), the main role of managers is to handle the crisis and adapt to new conditions. According to our opinion, another and much more important task of managers is to find the possibilities to support the economic development of the entire enterprise. In this context, the pressure is put on employee motivation because it is considered a key success factor due to its impact on the work performance of employees in an enterprise.

Theoretical background. Agriculture is a fundamental pillar of the very existence of society and humanity. Its main task is to ensure the nutrition of the population. Tillage, crop production, and livestock farming are characteristic activities of agriculture. Forestry is part of the agricultural policy within a separate sector at the Ministry of Agriculture and Rural Development of the Slovak Republic. The European Union's agricultural and forestry policy is helping farmers to increase food production.

The COVID-19 pandemic represents the most severe global health crisis of the century mankind has had to face since the 2nd World War (Chakraborty and Maity 2020). With respect to its specific feature, prevention and treatment are very difficult. Almost all nations try to slow down the spread of the disease by various restrictions such as testing, patient treatment, quarantine, and limiting large groups (Edwards et al. 2022). Much uncertainty persists about how the coronavirus (COVID-19) and its derived crisis effects will impact both agricultural and forestry organizations. Frequent social isolation, rising inflation, the reduction in the number of employees mainly in the services sector, and social and health insecurity affected the mental health of employees as well as their performance and motivation in a negative way (Giorgi et al. 2020; Mazumder and Opara 2020; Neykov et al. 2021; Slovak Business Agency 2021).

In order to succeed in the market, human resource management operates under exact procedures in all fields. Its main role is to have high-quality, skilled, and talented human potential available to work effectively under changing conditions in the market, the economy as well as the environment (Sirkova et al. 2016; Csákay

et al. 2021). Employee motivation is one of the conditions to improve the work performance of employees in an enterprise (Uka and Prendi 2021; Lohela-Karlsson et al. 2022). A properly motivated employee can work more effectively than an unmotivated one (Olexová and Gajdoš 2016; Vlacseková and Mura 2017; Stachová et al. 2018). According to Le et al. (2021), there are a lot of factors affecting employee motivation. Vávra et al. (2021) found seven basic motivational factors i.e. safety at work, fair remuneration, social security, and benefits, work climate, basic rights and freedoms, corporate image, and equal opportunity. Based on the results of Machova et al. (2022), the most popular motivational tools proved to be financial incentives in the form of salary increases or bonuses. According to Bajrami et al. (2021), there is a lack of job security. When managers are familiar with factors motivating employees, they can take necessary actions to improve performance in the workplace as it subsequently supports the economic development of the entire enterprise (Joniakova and Blstakova 2015; Cantele and Zardini 2018; Stacho et al. 2020).

An important role of managers is to motivate employees throughout their working lives (Mulyani et al. 2019). Motivation in management is a way for a manager to support employee productivity and efficiency (Palm et al. 2020). Good motivation lies mainly in the correct behavior of the manager with employees, remuneration and creating conditions for work (Mulyani et al. 2019). Previous research (Knapkova et al. 2020; Morkoviciute and Edriulaitiene 2020; Paais and Patiruhu 2020; AlQershi et al. 2022) confirms that sufficiently motivated employees are more productive, more active, make sufficient investment in work, create higher value for work.

The aim of the paper is to investigate the level of employee motivation in agricultural and forestry organizations during the time prior to the crisis and after it. Following the gathered data, the effect of the COVID-19 pandemic on the level of employee motivation in agricultural and forestry organizations is determined. Moreover, based on the socio-demographic figures such as age and gender, the significance of the effect is assessed. Our research is beneficial in the field of human resource management development, especially motivation for the agricultural and forestry sector due to its importance to the country's economy. The research shows the findings to what extent the level of employee motivation in agricultural and forestry organizations in terms of selected socio-demographic factors, age and gender, were affected by the COVID-19 pandemic.

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MATERIAL AND METHODS

The research into the employee motivation of agricultural and forestry organizations was carried out using the questionnaire in the years 2018–2021. The data in the questionnaire were obtained in a personal form through interviews with employees in agricultural and forestry organizations and subsequently in electronic form, too. The organizations were state-owned enterprises.

A total of 690 respondents participated in the research (Tables 1, 2). The years 2018 and 2019 are considered the time prior to the COVID-19 pandemic and the years 2020 and 2021 is the time of the COVID-19 pandemic. The questionnaire was divided into two parts. In the first part, socio-demographic figures were investigated. The second part of the questionnaire contains the motivational factors divided into various fields related to work conditions, social needs, career aspiration, finance, and mutual relationship. Motivational factors were in alphabetical order in order not to affect the decision-making process of respondents. The respondents evaluated the importance according to the Likert scale: 5 – very important, 4 – important, 3 – neutral, 2 – less important, 1 – unimportant. Following the *P*-value, the statistical significance of figures and motivational factors relating to various fields was confirmed or rejected.

The target group is represented by a working population in the Slovak Republic hired by agricultural and forestry organizations. Agricultural and forestry organizations were affected by the COVID-19 pandemic as well (Chirwa et al. 2021). At the beginning of the second quarter of the year 2020, all forestry activities shrank as a result of the state lockdown. Trees damaged by wind or by insects occurring under bark were not harvested within the required time. Subsequently, a problem with the consumption of the raw wood which provides the main income of forest enterprises arose. The negative impacts were partly reduced in the

summer of 2020. It was at the expense of the heavier physical and mental workload of employees. A similar situation occurred at the beginning of 2021 resulting in the partial failure of the timber supply in the domestic market (Ministry of Agriculture and Rural Development of the Slovak Republic 2021). Uncoordinated measures in agriculture accepted by the EU countries to fight against the COVID-19 pandemic resulted in a disruption of the unified market encompassing all EU member states. Therefore, the food supply chain in the Slovak Republic was affected, too. Slovak farmers faced difficulties in delivering the good performance of the agri-food chain although not to such an extent as other fields, nevertheless the consumption on the domestic market was reduced as well as a decrease in the export was observed. The field was under pressure associated with anti-pandemic measures and workforce available as young people are not interested in building a career in agriculture especially due to the low average salary compared to neighbouring countries (Deloitte Consulting 2021).

Agricultural and forestry organizations participating in the research were state-owned enterprises. Owing to the dominant position, political and lobbying effects can be seen in the management of agricultural and forestry organizations.

Cochran's *Q* test was used to determine the minimum sample size (McElroy 1979).

In our case, the level of reliability is 95%, accuracy of at least 5%. A critical value of selected reliability is 1.96.

$$n_0 = \frac{Z^2 \times p \times q}{e^2} = \frac{1.96^2 \times 0.7 \times 0.3}{0.05^2} = 322 \quad (1)$$

where: *Z* – critical value of standard division related to selected reliability estimate; *p* – provisional estimate of relative frequency; *q* – is 1 – *p*; *e* – selected estimation error.

Total of 322 respondents are a minimum representative sample size for the level of representativeness needed.

The level of importance was evaluated by the arithmetic mean and other mathematical-statistical methods. Motivational factors were tested using Cronbach's alpha. The internal reliability of individual scales of all analysed motivational factors was measured when Cronbach's alpha reached $\alpha = 0.940$. Further, the correlation between the selected motivational factor (corrected item) and the rest of the motivational factors (22 correlations in total) was tested. The results were

Table 1. Number of respondents in terms of gender

Gender	Men	Women	Total
Prior to COVID-19 pandemic	255	105	360
Percentage (%)	70.83	29.17	100.00
Total (%)	–	–	52.17
During COVID-19 pandemic	181	149	330
Percentage (%)	54.85	45.15	100.00
Total (%)	–	–	47.83
Total	436	254	690

Source: Own survey

Table 2. Number of respondents in terms of age

Age	< 30 years	30–40 years	41–50 years	50 < years	Total
Prior to COVID-19 pandemic	57	115	107	81	360
Percentage (%)	15.83	31.94	29.72	22.50	100.00
Total (%)	–	–	–	–	52.17
During COVID-19 pandemic	43	67	116	104	330
Percentage (%)	12.92	20.42	35.00	31.66	100.00
Total (%)	–	–	–	–	47.83
Total	100	182	223	185	690

Source: Own survey

higher than 0.3 (values range from 0.936 to 0.940) in all cases. According to De Vaus (2002), it indicates that the items belong to the index and that the index is one-dimensional.

The results were obtained using the statistical software Statistica 12, where following the *P*-value, the real level of significance was determined. The hypotheses were tested using the variance analysis with interactions. The analysed field (financial, social, work, and career-related) was presented by the dependent variable. The categorical independent variables were used to describe the age, gender, and the time before or after the COVID-19 pandemic. Individual studied fields are illustrated in the following figures. When using analysis of variance (ANOVA), the level of significance $\alpha = 5\%$ and 95% confidence level were used to determine the correctness of the hypothesis (Mason and Lindt 1990). Based on the previous research on differences in motivation (Fjendbo 2021; Kim et al. 2021), the following hypotheses were formulated:

H_1 : We suppose that the COVID-19 pandemic affected the level of motivation of the employees in agricultural and forestry organizations of the Slovak Republic.

H_2 : We suppose that the COVID-19 pandemic affected the level of motivation of the employees in agricultural and forestry organizations of the Slovak Republic in terms of gender and age.

RESULTS AND DISCUSSION

The motivational factors were divided into five groups relating to finance, mutual relationships, work conditions, social needs, and career aspiration. The group of motivational factors relating to finance consists of the following motivational factors: basic salary, fringe benefits, and a fair appraisal system. The mutual relationship was investigated using the motivational

factors as follows: atmosphere in the workplace, good work team, communication in the workplace, and supervisor's approach. Physical effort, workplace safety, job security, workload and type of work, information about performance results, working hours, work environment, job performance, and mental effort represent the group of motivational factors relating to work conditions. In the group of motivational factors relating to career aspiration, there is an opportunity to apply one's own ability, career advancement, competencies, prestige, individual decision-making, self-actualization, education and personal growth, and recognition. The last group consists of motivational factors relating to social needs and they were as follows: social benefits, company mission, name of the company, region's development, relation to the environment, and free time. In the research, the position of five groups of motivational factors prior to 2020 and after the year 2020 was investigated (Figure 1).

When comparing all groups of motivational factors to the time prior to the COVID-19 pandemic, they decreased significantly. The needs and requirements of the employees of agricultural and forestry organizations were reduced. The order of importance of the groups stays almost the same. The social situation caused by the COVID-19 pandemic is considered the reason behind the reduction. There is a fear of health and future existence. The moment the basic employee needs are not met (finance and mutual relationship), the requirements for further areas of motivation arise (career aspiration, work conditions, social needs). Following the mentioned findings, the hypothesis H_1 that the COVID-19 pandemic affected the level of motivation of the employees in agricultural and forestry organizations is confirmed.

The following part is devoted to the differences in the level of motivation of the employees in agricultural and forestry organizations in terms of gender and age.

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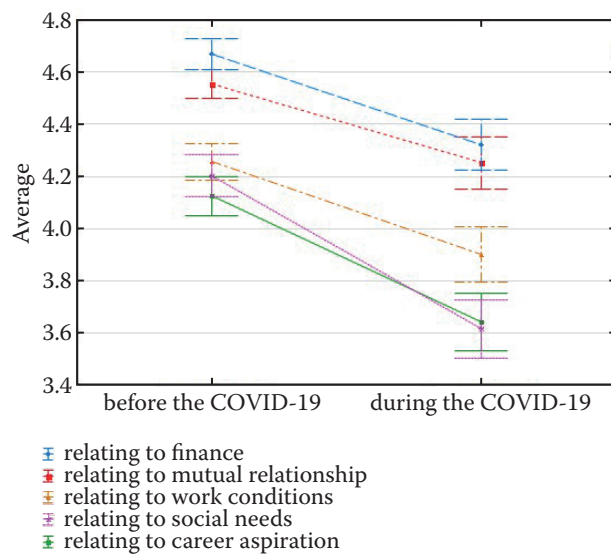


Figure 1. The importance of individual groups of motivational factors

Source: Own survey

Even though the demands of women to meet motivational factors relating to finance are higher, the differences are not statistically significant (Figure 2). There is no significant difference in terms of gender. In terms of age, significant differences occurred between men

aged up to 40 and 50. It is due to the fact that men at mentioned age are aware of their position as a breadwinner for their families, therefore, they make great effort to meet their financial demands and requirements. Similar to our findings, Lee (2022) and Lutolf and Stadelmann-Steffen (2022) have investigated the gender difference and perceive men as a breadwinner for their families.

There are no significant differences in motivational factors relating to the mutual relationship between genders (Figure 3). Men, as well as women, consider mutual relationships important. However, in terms of age and the impact of the crisis, a significant decrease in the relationship in the case of men and women aged up to 40 as well as women up to 50 years old is observed. The results are due to repeated lockdowns used as a restriction to fight COVID-19 pandemic infections. In the case of the young generation aged up to 30, the mentioned difference is not so significant likely to the fact that people at this age are computer-literate and experienced in social network sites which provide a great opportunity for individuals to virtually experience social contacts.

In the group of motivational factors relating to work conditions, the consensus about motivational requirements is stated in terms of gender (Figure 4). The dif-

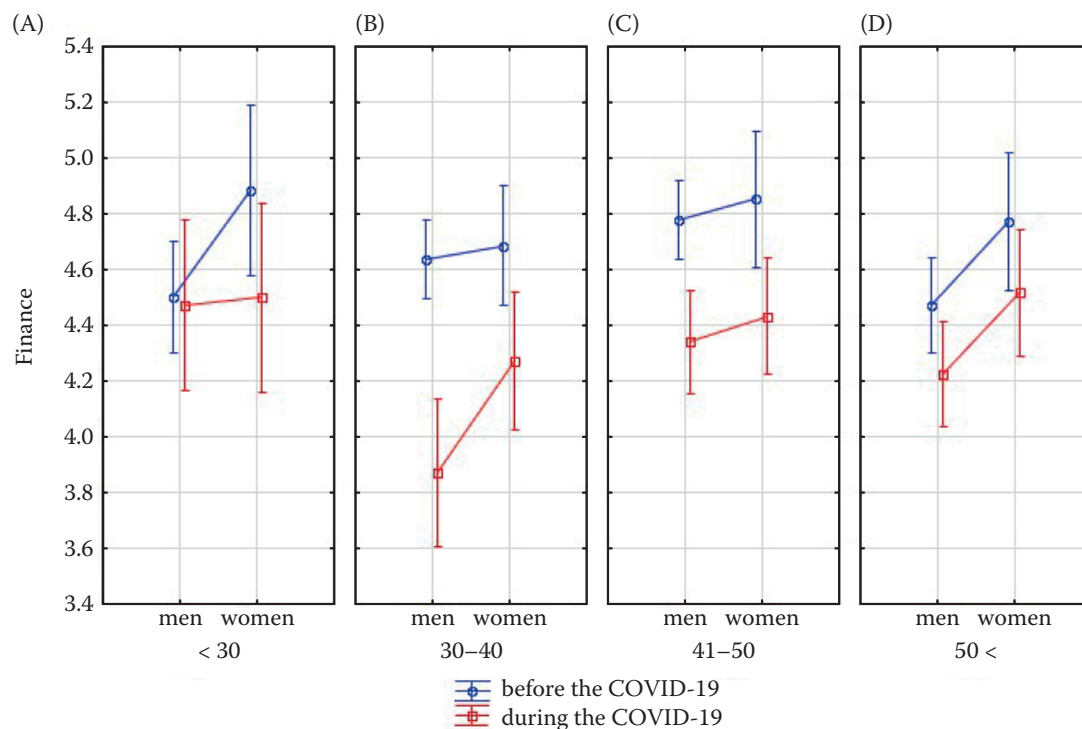


Figure 2. The importance of the motivational factors relating to finance in terms of age and gender: (A) < 30 years, (B) 30–40 years, (C) 41–50 years, and (D) 50 < years

Source: Own survey

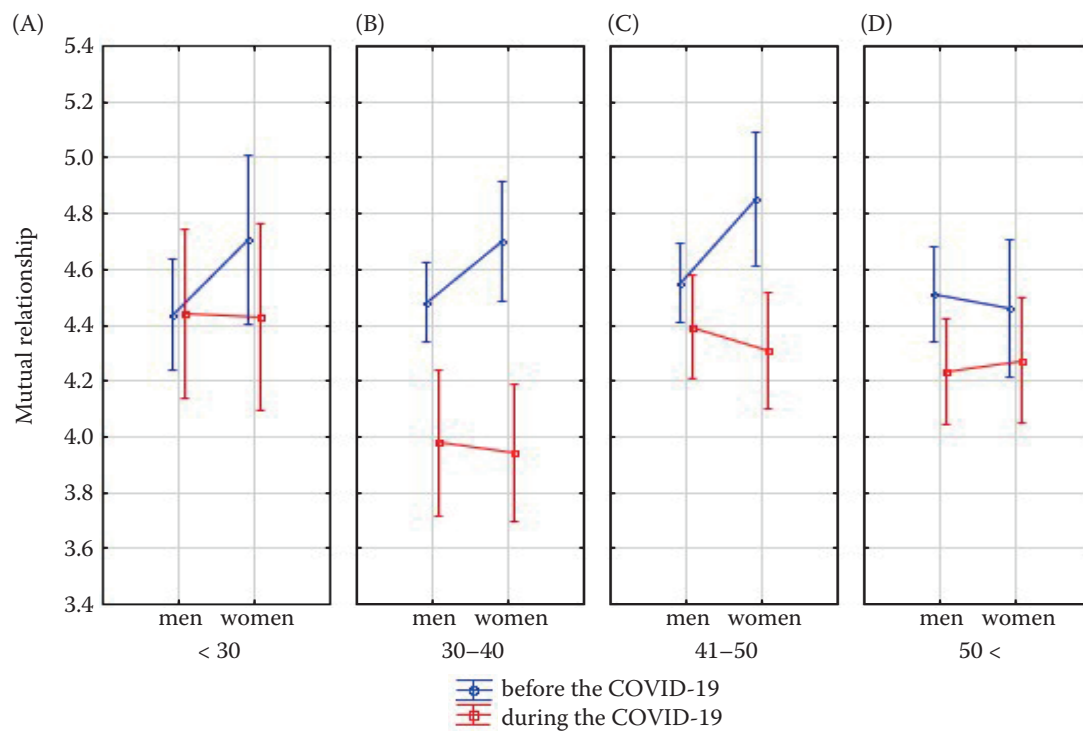


Figure 3. The importance of the motivational factors relating to mutual relationship in terms of age and gender: (A) < 30 years, (B) 30–40 years, (C) 41–50 years, and (D) 50 < years

Source: Own survey

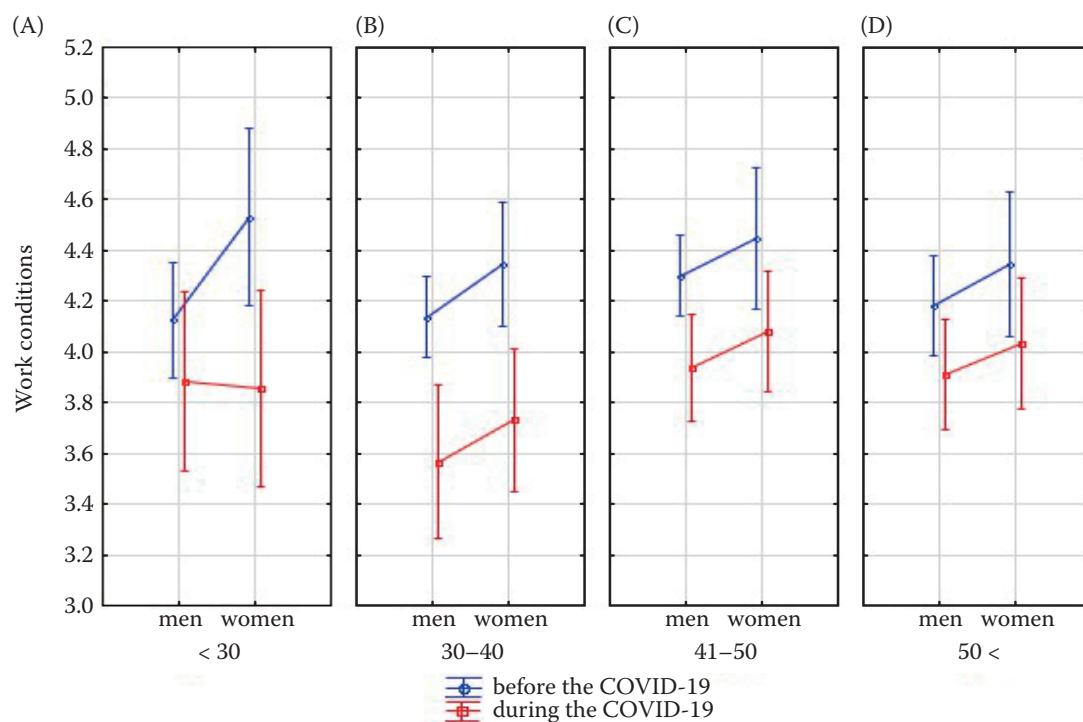


Figure 4. The importance of the motivational factors relating to work in terms of age and gender: (A) < 30 years, (B) 30–40 years, (C) 41–50 years, and (D) 50 < years

Source: Own survey

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ference between men and women in the case of needs is observed but it is not significant. There is a significant difference only in the case of employees aged up to 40. Analogous to the mutual relationship, it is supposed that job loss is considered a high-risk area by this age group.

In terms of gender, there are no significant differences in perceiving the motivational factors relating to social needs (Figure 5). However, in terms of age, significant differences are observed in the case of all age groups of women and the group of men aged up to 50. The social emotions of women are different compared to men. It is supposed that employee commitment decreases due to the COVID-19 crisis.

Motivational factors relating to career aspiration, despite their position as the least required motivational factors, selected group (only a low number) of employees consider them significant. It means an opportunity for a career move for them. In terms of gender (Figure 6), there are no significant differences observed. In terms of age, significant differences appear in the case of women up to 30 years old (opportunity for climbing the corporate ladder for single women), in the case of men aged 40 and 50 (this is the age for men to build the career) and in the case of women aged up to 50 (their children adult and women can build their career). Similar to our findings, Hitka et al. (2018, 2021) show a sig-

nificant correlation between age, gender, education and motivation factors relating to career aspiration.

Employee motivation affects job performance (from an economic point of view as well as a mental point of view), overall success, and economic development of the entire enterprise (Uka and Prendi 2021). The level of motivation in agricultural and forestry organizations in the years 2018–2021 was defined in the research. Following the gathered data, it is stated that the COVID-19 pandemic affects the motivational factors in agricultural and forestry organizations in a negative way. Statistically significant differences in perceiving motivational climate occur. Slovak agricultural and forestry organizations are, to a great extent, affected by a gender imbalance in the workplace. Women are usually in the positions of white-collar workers; however, it is only 17% of the total number of employees in this job position (Ministry of Agriculture and Rural Development of the Slovak Republic 2021). It is because of historical developments, as well as legislation valid by the year 2010 in Slovakia as women were not allowed to carry out certain types of forestry jobs (Kapusta 2017; Bajzikova and Bajzik 2020). Traditions and family background are the essential motivational factors affecting the decision of Slovak women to start working in agricultural and forestry organizations,

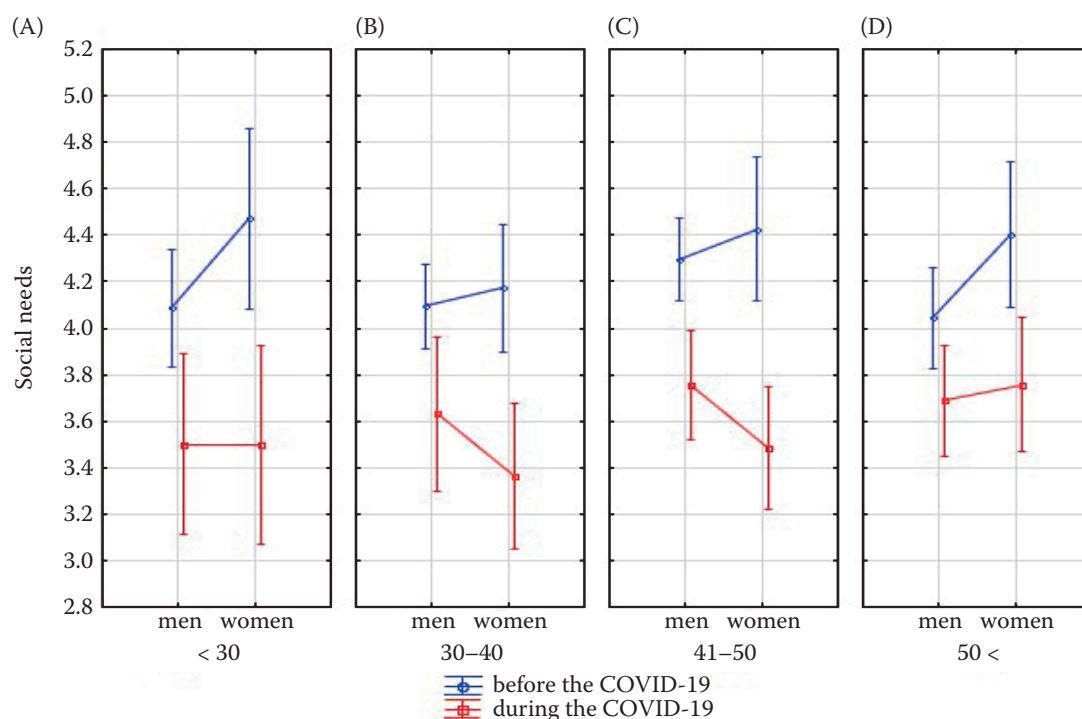


Figure 5. The importance of the motivational factors relating to social needs in terms of age and gender: (A) < 30 years, (B) 30–40 years, (C) 41–50 years, and (D) 50 < years

Source: Own survey

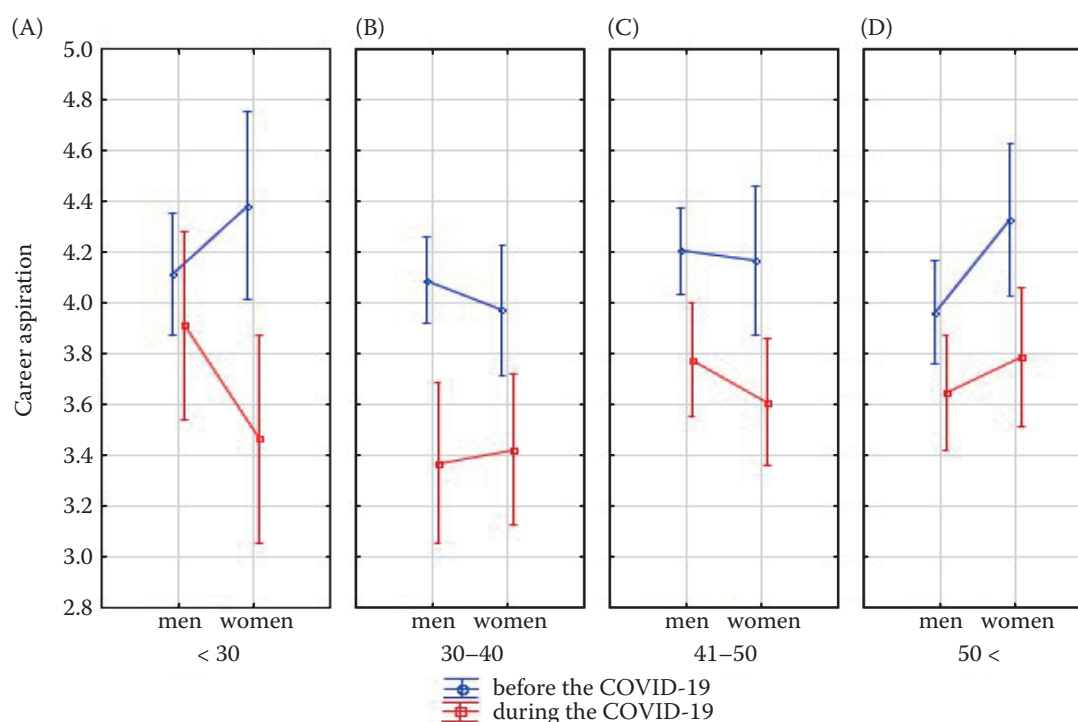


Figure 6. The importance of the motivational factors relating to career aspiration in terms of age and gender: (A) < 30 years, (B) 30–40 years, (C) 41–50 years, and (D) 50 < years

Source: Own survey

which is also confirmed by the research of Sarvašová et al. (2015). In several Slovak regions, a job in the agricultural and forestry organizations is the only possible chance to work. Employees of agricultural and forestry organizations have been fundamentally underestimated in terms of financial evaluation in the long run. Most of their income is reflected in immediate consumption. For this reason, the motivational factors relating to finance are an essential tool for increasing and maintaining motivation. Reed (2003), in his research conducted in Canada, found out that women made an objection to their marginal positions in forestry and stereotypes due to which they are excluded from most job positions in the forestry sector. Our results are confirmed this way.

Similar results were stated also by Urbancová and Vrabcová (2020) and Rietveld et al. (2022). A certain correlation between perceiving motivational factors in forest enterprises with our research is observed. Similar results were stated also in the research of Jelacic et al. (2010) and Kropivšek et al. (2011), who carried out the research in industrial enterprises. In the research of Vnoučková et al. (2015), Stacho et al. (2017), Bulíňská-Stangrecka and Bagieńska (2020), Ližbetinová et al. (2020), the emphasis is put on the impor-

tance of a man and labour force as the most important production inputs and driving power of an enterprise.

CONCLUSION

The COVID-19 pandemic represents the most severe global health crisis of the century mankind has had to face since the 2nd World War (Chakraborty and Maity 2020). During the lockdown, many types of industries, and human activity were stopped, maybe for the first time in modern history (Laudari et al. 2021). The agricultural and forestry organizations have faced the impact of the COVID-19 pandemic (Aggarwal et al. 2021; Chirwa et al. 2021). Under the mentioned conditions, employee motivation in the agricultural and forestry organizations of the Slovak Republic must be evaluated, and the impact of the situation must be investigated. When investigating motivational factors in the motivational groups, it is stated that the statistically significant differences were confirmed in all areas after the year 2019. Therefore, the level of employee motivation changed. The needs and requirements in all motivational factors were reduced. At the same time, the research shows that motivational factors were reduced also in terms of age as well as gender. It means that the requirements of employees in ag-

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gricultural and forestry organizations are significantly reduced due to the crisis. Therefore, the negative impact on the employee needs is confirmed.

Our research is beneficial in the field of human resource management development, especially motivation for the agricultural and forestry sector due to its importance to the country's economy. Given that the area of motivation in the agricultural and forestry sector has not yet been processed and analysed during the time of the health crisis, beneficial is the definition of a statistically significant decrease in the motivational needs of employees in individual motivational groups (Figure 1). The finding that the COVID-19 pandemic, besides other impacts, affects human resource management and especially employee motivation is considered the main contribution of the research. The research shows the findings to what extent the level of employee motivation in agricultural and forestry organizations in terms of selected socio-demographic factors, age and gender, were affected by the COVID-19 pandemic. Managers dealing with creating motivational programmes must be familiar with the mentioned fact and the changes in employee preferences must be also taken into consideration.

The limits of the study are as follows: the first one – the further development of the pandemic and its impact on the state economy. In the case that the pandemic continues over a longer time, there is a risk of a decrease in the performance of the agricultural and forestry organizations. The second one – when we suppose the end of the pandemic, the agricultural and forestry organizations must be able to face economic problems and establish business again, it means to change from surviving to thriving. It relates to keeping the employees. Further research should be focused on the development of motivation and investment in employee development (Vnoučková et al. 2015; Kucharčíková and Mičiak 2018). When the investment in employees is tailored, it is always effective. Defining the effective motivational factors is a set of mutually interconnected items affecting the power, structure, and direction of motivation not only for employees – individuals but whole groups as well.

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