

# The impact of motivation to decision on digital transformation of social entrepreneurship

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## Abstract

**Background:** Today, the digital transformation of business is one of the conditions for survival on the market. The development of digital technology is progressing rapidly, and only the business entities that keep pace with this development can expect good business results. Social entrepreneurship is an excellent way to solve the problems of social inequality and poverty and thus leads to economic growth and development.

**Purpose:** The main goal of this research is to create a theoretical model of digital transformation of social entrepreneurship. This model can be a useful tool for deciding on the digital transformation of business. We investigated motivation of managers and employees as an influencing factor for the digital transformation of business. We declared other influencing factors as constants.

**Study design:** We measured motivation by personal and professional use of the Internet, the acquisition of digital skills, the cost of labour of those who are involved in the digitisation process, and the application of data protection software. Ninety-seven social entrepreneurship entities from Bosnia and Herzegovina (B&H) participated in the research. The research was carried out using questionnaires, and we analysed the obtained data using correlation and regression methods.

**Findings:** The results showed that motivation is a significant factor in the digital transformation of social entrepreneurship. Based on the results of the research, we have created a model of digital transformation of social entrepreneurship entities that can lead to economic and social development through steps applicable in practice.

**Limitations/future research:** The most significant limitation of the research is the lack of an official register of social entrepreneurship entities from which we can collect data about the number of these entities. To future researchers, we leave open questions of other influencing factors for the development of social entrepreneurship, such as knowledge, sources of funding for initial business activities, etc.

## Keywords

social entrepreneurship, motivation, managerial decision-making, digital transformation, social and economic development

## Introduction

As Schumpeter's theory (1942) says, the quality of community life depends on the number of entrepreneurs (Bazhal, 2016). If everything worked as in theory, there would be neither hungry nor poor people today, and we are aware that these are big problems nowadays. However, the fact is that people who have some physical disability or

other health problems cannot live normally due to the lack of understanding of the community and poor employment opportunities. It is very important to find some alternative ways of reducing social inequality and increasing the inclusion of marginalised groups of society in all economic and social streams of the community. One of the possibilities, which perhaps offers the best and highest quality solution, is the

development of social entrepreneurship. Social entrepreneurship refers to activities that seek to solve numerous social problems, that is, to transform society for the better (Gigauri, Panait, Apostu & Raimi, 2022). According to Ramadani, Agarwal, Caputo, Agrawal and Dixit (2022), a social entrepreneur (SE) is a person who uses revolutionary ideas and solutions to solve social problems. These entrepreneurs are delighted to bring about beneficial improvements through their courageous efforts and deeds. SEs accept that this approach connects them with their life's purpose and that their actions impact the world (p. 3437). Social entrepreneurship does not mean only the acquisition of profit as the basic goal of business but also the investment of that profit in solving social problems. Social entrepreneurship and social innovation is receiving increasing attention in tackling social issues (Manjon, Merino & Cairns, 2022). This research is focused on analysing the connection and relationship between the digital transformation process and the development of social entrepreneurship. Looking at social problems and becoming aware of them, a social entrepreneur must continuously offer innovative solutions for current social problems. The crisis caused by the pandemic of the COVID-19 virus is the best indicator of the importance of digitisation, ideas, innovations and knowledge.

Petković (2021) lists six technological mega trends that will shape the future of societies: "people and the Internet, computing, communications and storage everywhere, the 'Internet of things', artificial intelligence (AI) and Big data, sharing economy and distributed trust, digitisation of matter" (pp. 195-196). The positive effects of digital transformation on the development of the economy and society are immeasurable compared to the time before digitalisation. Fossen and Sorgner (2018) proved that digitisation has a positive effect on the growth and development of entrepreneurship in the United States of America (USA). Ratten (2018) and Altınay and Altınay (2018) also proved, in their research, what and how much impact digitisation has on the development of social entrepreneurship in different business spheres.

The research problem is presented by the following question: How to improve the digital transformation of social entrepreneurship entities?

This research measures the influence of motivation on the digital transformation of social entrepreneurship. Other factors are not measured.

Digital transformation offers opportunities for the development of social entrepreneurship.

The research subject was determined based on the defined problem. The research subject is a theoretical-empirical analysis of motivation and its influence on the digital transformation of social entrepreneurship with special reference to Bosnia and Herzegovina (B&H). The research subject is in the field of entrepreneurial and theoretical economics. Hagberg, Sundstrom and Egels-Zandén (2016) describe digitisation as the most important transformational process in business (p. 694). Pernebrink and El Azab (2019) also talk about the importance of the speed of digitisation in business. The geographical area of research in this paper is the territory of B&H.

The theoretical part of the analysis refers to the review of relevant literature in the field of digitalisation and social entrepreneurship, as well as the impact of the digitalisation process on the development and innovation of social entrepreneurship. The empirical analysis is based on examining business entities from B&H. The research was conducted in the form of a survey with a structured questionnaire.

The development of social entrepreneurship increases employment and reduces social benefits, develops innovation and competitiveness, and has multiple positive impacts on the development of the economy and society. This research will be useful to the small and medium-sized enterprises (SMEs) sector and entrepreneurship in order to introduce advanced technologies in their business and complete the digitisation process in the fastest and easiest way. Also, this research should awaken the awareness of existing small and medium-sized enterprises and entrepreneurs about the importance of solving some social problems and that in this way both economic and social goals can be achieved. Large companies can also benefit from this research in terms of understanding the importance of digitization, the transition from traditional to modern business, and the importance and possibility of solving social problems. The public is not sufficiently familiar with both the digitalisation process and the concept and significance of social entrepreneurship, and that is why this research could raise awareness and encourage anyone who has a business idea and is thinking about starting a business to focus on this kind of business.

This paper consists of seven parts: an introduction, a literature review, a development of the hypothesis, a description of empirical research

methods, a presentation of research results, discussion and a conclusion.

## 1. Literature review

*The concept of social entrepreneurship.* Three main reasons people decide to become entrepreneurs and start their own business: “to be their own boss, to follow their ideas and achieve financial rewards” (Barringer & Ireland, 2016, p. 7). When we add the fulfilment of a social mission, i.e. solving a social problem to these reasons, we come to the concept of a social entrepreneur. The basic principles of the social economy are: democratic association and action, solidarity and cooperation (McVeigh & Wolfer, 2004, pp. 2-10). According to Martin and Osberg (2007), the term social entrepreneurship refers to those “business ventures that, in addition to generating profit for the owners, also have some (higher) social or ecological purpose” (p. 34). These companies are different from other classic for-profit companies on the market because they measure their success not only by the profit they have achieved but also by the degree of positive social or ecological changes they have produced – by the degree of created social capital (Santos, 2012, p. 344). Gawell (2014) states that social entrepreneurship implies social engagement and entrepreneurial activity. Social entrepreneurship involves recognising and solving social problems such as exclusion, poverty, unemployment, etc., applying of innovative methods and strategies. Social entrepreneurship plays a significant role in solving social problems, as confirmed by the latest research (Tan Luc, Xuan Lan, Nhat Hanh Le & Thanh Trang, 2022); Crupi, Liu & Liu, 2022; Adro & Fernandes, 2022). The Schwab Foundation for Social Entrepreneurship states that “social entrepreneurship is about the application of practical, innovative, sustainable approaches with the aim of developing society, with an emphasis on those who are marginalised and poor” (Schwabfound, n.d.). According to Dickel and Eckardt (2021), a distinction should be made between a social entrepreneur and a social enterprise. Namely, social enterprises primarily (therefore not exclusively) operate in the private non-profit sector, while social entrepreneurs, as leaders in social change, operate in the private for-profit, public and private non-profit sectors (Petković, 2021). Sengupta, Sahay and Croce (2018) formulated a new social entrepreneurship framework that includes five key dimensions of social entrepreneurship:

- social protection,
- social capital,
- social entrepreneur,
- creation of economic value, and
- collective endurance (p. 773).

*Digital transformation.* In the broadest sense, digitalization represents translating an analogue signal into a digital form (Brennen & Kreiss, 2016). In modern society, it represents one of the most important transformational processes both in the business world and beyond (Hagberg et al., 2016). It changes organisational structures, management strategies and relationships with customers and other companies (De Groen, Lenaerts, Bosc & Paquier 2017). Digitisation enables, improves and transforms business operations, functions, models, processes and activities through digital technologies and digitised data (Legner et al., 2017). Transformation is described as a general process that begins with a situation that moves towards a changed and, it is assumed, better situation (Gray & Rumpe, 2017, p. 307). Digital transformation is a cultural, organisational and operational change of an organisation, industry or system through smartly integrating digital technologies, processes and competencies at all levels and functions (Vial, 2019). Digital transformation uses modern and advanced technologies to create value and new services, create innovation and gain the ability to quickly adapt to the changing circumstances that characterise today’s modern markets and economies (Schwertner, 2017). Digital transformation refers to a process that begins in the moment when organisation starts thinking about the introduction of digital technologies in all areas of business and lasts until the moment of their complete integration (Ebert & Duarte, 2018). However, “digital transformation also includes individuals: it is not enough to introduce digital technology into business, it is also important to train employees” (Ragulina, Suglobov & Melnik, 2018, p. 171). Digitalisation of social entrepreneurship is an inevitable process that cannot be avoided in modern society (Chandna, 2022). The latest research in this area shows how important the role of digital transformation is in achieving business results (Kraus et al., 2022; Konopik, Jahn, Schuster, Hoßbach & Pflaum, 2022; Peng & Tao, 2022; Rupeika-Apoga, Petrovska & Bule., 2022; Li, 2022).

*Motivation.* Robbins and Judge (2015) define motivation as a person’s persistence to achieve

goals. There are three basic elements of motivation: strength, direction and persistence. The motivation of employees, which is necessary to accept digitalisation, can be achieved with the help of adequate education, in which employees gain new knowledge and thereby strengthen their self-confidence (Jha, Bilalovic, Jha, Patel & Zhang 2017). In addition to the advantages of digitisation, there are also certain disadvantages that are mainly related to employees' fear of losing their jobs. According to Roos and Shroff (2017), employees have a great fear of digitisation. According to them, the problem is rapid technological development, which can overtake human learning abilities. In other words, while workers acquire new knowledge and learn new skills, they may already become obsolete due to the exponential growth of technologies. According to Pernebrink and El Azab (2019), the reasons for workers' fear and resistance to digitisation are related to the perception of workplace threats as well as the perception of benefits from advanced technologies. In order to overcome this problem, according to Degryse (2016), it is crucial to identify the human role in work and what it is that should not be left to machines. Cejthamr (2020) believes that technological changes occurring on the market are very fast and will not stop, and that they do not leave managers who must prepare for adequate responses. The motivation of managers and employees is the key factor of digital transformation, which is a condition for survival in given changes. Motivation has a significant impact on employee results (Santoso & Riyanto, 2020; Chien, Mao, Nergui & Chang 2020; Hajjiali, Kessi, Budiandriani, Prihatin & Sufri, 2022; Widarko & Anwarodin, 2022; Megawaty, Hamda & Aida, 2022; Loor-Zambrano, Santos-Roldán & Palacios-Florencio, 2022; Sugiarti, 2023). Lindawati and Parwoto (2021) proved that motivation has a significant impact on the job satisfaction of workers and management during digital transformation. Everyone in the organisation must be motivated to accept new working conditions in the digital era, especially managers who must also influence the motivation of workers in order to accept digital transformation as necessary to achieve the organization's goals.

## 2. Development of the research hypothesis

We will measure the motivation of managers and employees for involvement in the digitalization process by personal and professional use of the

Internet, the acquisition of basic and advanced digital skills, the level of labour costs of workers who are directly or indirectly involved in the digitalisation process, and by the application of data protection and security software such as: authentication, authorisation, cryptography, digital signature, digital certificate, antivirus and firewall (Bastari, Eliyana, Syabarrudin, Arief & Emur, 2020; Chik & Abdullah, 2018). When we talk about youth unemployment, the key problems are the mismatch of competencies with the needs of employers and the lack of work experience (Prodanov, 2018). The main prerequisite for developing countries to catch up with the currents of the fourth industrial revolution is the education of managers in companies to recognise global digitisation trends, investment in the education of young people and the training of personnel for new occupations, as well as encouraging users to use online services with more confidence (Stošić-Mihajlović & Nikolić, 2017). The development of advanced digital technology has led to major changes in the market and the loss of jobs. The social entrepreneurship is a way to develop successful strategies based on feelings of solidarity, morality and social responsibility that will enable overcoming this problem (Prodanov, 2018).

Based on these studies, we define the research hypothesis (H:) *Increasing the motivation of employees and managers to participate in the digital transformation process will improve the development of social entrepreneurship entities.*

## 3. Methods

Empirical research conducted for the purposes of testing the research hypothesis is a combined – theoretical and quantitative research. In order to be able to form a theoretical model that will contribute to the development of social entrepreneurship, secondary and primary data were collected, processed, analysed and interpreted. As part of the theoretical research, a review of domestic and foreign literature was carried out. This part of the research gave us an insight into the current state of the research problem and enabled us to analyse the results of recent research in this area and to discuss and compare them with the results of empirical research conducted for the purposes of testing the research hypothesis and seeking answers to the research problem.

For data processing, we used automatic data processing using the Google Drive application, which displays the data from the completed

questionnaire tabularly and graphically in MS Excel.

There are quantitative methods to analyse and test hypotheses:

- Binomial distribution - probability distribution model (Sylla, 2014),  
$$P(x) = \binom{n}{x} p^x q^{n-x}$$
$$x = 0, 1, 2, \dots, n$$
$$P(x) = 0 \text{ for all other } x.$$

- Chi square test or  $\chi^2$  test - testing the significance between the frequency of distribution and the mutual connection of different characteristics (Lovrić, Komić & Stević, 2006),  
$$\chi^2 = \sum_{i=1}^r \frac{(f_i - f_i^*)^2}{f_i^*}$$

- Duncan test of variance analysis – analysis of the impact of one phenomenon to another (Duncan, 1955; Čobanović, Nikolić-Đorić & Mutavdžić, 2003),  
$$R_{(p,v,\alpha)} = \sigma_m \cdot r_{(p,v,\alpha)}$$

Signum test – since the collected results had non-parametric characteristics that deviate from the expected binomial distributions, the Signum test was also used, and it was also used for hypothesis testing (Stević et al., 2021; Stević et al., 2019).

The population in this paper consists of business entities and non-profit organisations on the territory of B&H that are engaged in social entrepreneurship, solving a certain social problem by investing part of their profits. The sample is formed by random selection, by surveying a certain number of subjects of social entrepreneurship. The methods that were used in this research for data processing and analysis, allowed the determination of the motivation impact on making a decision about digital transformation. The influence of motivation on the digital transformation of social entrepreneurship was measured. Motivation is observed as an independent variable, and the digital transformation of social entrepreneurship as a dependent one. For the purposes of research, questionnaires were used. The first part of questionnaire refers to the general information about the subjects of social entrepreneurship. The second part of the questionnaire refers to the

motivation of managers and other employees. In order to be able to compare the results of the analysis, the methods of comparison and classification, then the methods of analysis and synthesis were used. Based on the application of these methods and the results obtained, a new theoretical model is proposed in this research. This model, if applied, should contribute to improving the development of social entrepreneurship as a factor in the development of the economy and society. In the end, we compared the results obtained with the results of similar research and considered the possibilities of their application in B&H and other small open economies in development.

4. Research results, hypothesis testing and development of model

In order to verify the hypothesis, we will analyse the motivation of employees and management for digitalisation of business in social entrepreneurship entities in B&H through the questionnaire and use the results of our empirical research.

4.1. General information

Our research covered the whole territory of B&H (Table 1).

Table 1 Headquarters of subjects of social entrepreneurship that participated in the research

Number of entities	Headquarters
12	Sarajevo
11	Mostar
10	Banja Luka
4	Tuzla, Vareš
3	Prijedor, Bijeljina, Zenica, Foča, Jablanica, Brčko
2	Bratunac, Ustikolina, Konjic, East Ilidža, Doboj, Šamac, East Sarajevo.
1	Zavidovići, Teslić, Sanski Most, Olovo, Breza, Laktaši, Goražde, Gacko, Grahovo, Sapna, Sekovići, Prnjavor, Žepče, Ljubinje, Gradačac, Modriča, Kladanj, Lopare, Srebrenica, Trebinje, Domaljevac, Rogatica, Brod, Prozor-Rama.

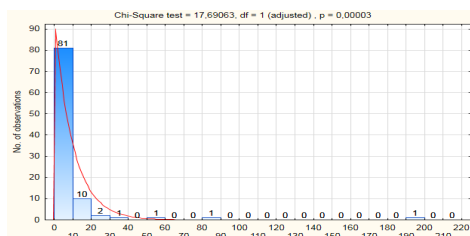
Source: the authors

Most of the social entrepreneurship entities that participated in the research were registered as citizens' associations (28.9%), followed by limited liability companies (23.7%), then independent entrepreneurs (18.6%). 12.4% of organisations are registered as non-governmental organisations, 8.2% of organisations are registered as

cooperatives and 4.1% of organisations are registered as foundations.

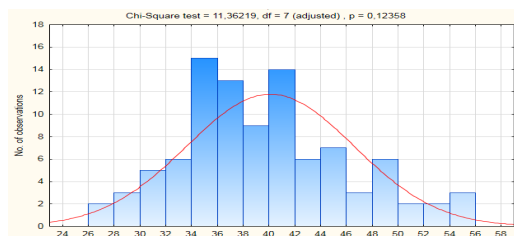
The research results show that social entrepreneurship entities in B&H are engaged in various activities. 25.8% of respondents are engaged in agriculture, which is the most represented activity in the sample. In second place is trade with 22.7% participation in the total sample. In third place is the provision of psychological and health services with 9.3% participation. This is followed by tourism, education and the food industry with a 7.2% share each. There are also ecology with 5.2%, hospitality with 3.1% and finance with 2.1% participation.

The number of employees per organisation is approximately exponentially distributed, determined by the large unevenness of the number of employees. The largest, dominant group consists of companies with up to 10 employees (81), and the average number of employees is 10.092. Therefore, the research mostly covered micro-enterprises (Figure 1).



**Figure 1** Histogram of the distribution of the number of employees by organization  
Source: the authors

The average life expectancy of employees is normally distributed, with a mean age of 40.104 years, with a standard deviation of 6.49 years ( $\chi^2=11.36219$ ,  $df=7$ ,  $p=0.12358$ ). This distribution is shown in Figure 2.



**Figure 2** Histogram of the distribution of the life expectancy of employees  
Source: the authors

Table 2 shows the answers to the question “What social problems does your organization deal with?”. It was possible to give several answers to this question at the same time. From the analysed answers, we can conclude that the most frequent

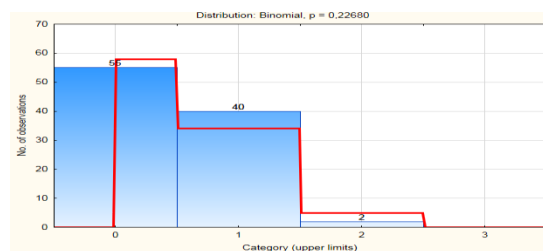
problem which organisations deal with is the inclusion of marginalised groups of society in economic flows. Next, there is the education of marginalised groups of society through various seminars and trainings, as well as health care and other problems that the respondents try to solve through their activities.

**Table 2** Social problems

Solving social problems	Number of responses
Inclusion of marginalised groups of society in economic flows	83
Education of marginalised groups of society	36
Health Care	23
Ecological problems	11
Other	5

Source: the authors

To the question “We are satisfied with the level of development of social entrepreneurship in our economic environment” (with answers: (0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree), the answers are reflected in general dissatisfaction. More precisely, 95 out of 97 respondents ( $95/97=0.9793$  – absolutely insignificant binomial distribution) gave answers (eccentrically negative) from the negative domain, and only 2 answers from the positive domain, where not a single respondent had an absolute agreement with the question. The mathematical expectation of 0.4532 and the standard deviation of 0.5404 (group of 56 respondents) were realised (Figure 3).



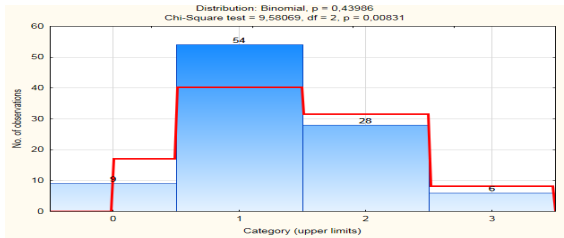
**Figure 3** Histogram of significant binomial distribution of satisfaction  
Source: the authors

According to the answers to this question, we see that the respondents are dissatisfied with the level of development of social entrepreneurship.

## 4.2. Digitalisation

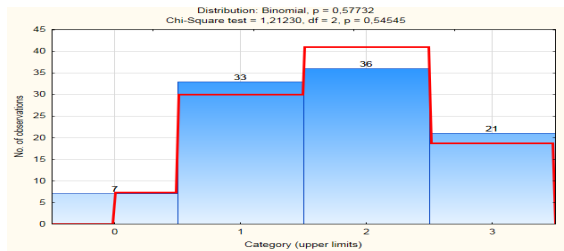
The distribution of answers to the question: “Current digital skills of employees” with the following answers ((0) none, (1) weak, (2) good, (3) very good) was not verified as significant ( $\chi^2=9.58069$ ,  $df=2$ ,  $p=0.0031$ ) by binomial

distribution with parameter  $p=0.4398$ . The responses realised a mathematical expectation of 1.3196 and a standard deviation of 0.7295 with mode 1 (group of 54 respondents) (Figure 4).



**Figure 4** Histogram of the insignificantly binomial distribution of current digital skills of employees  
**Source:** the authors

The distribution of answers to the question “The current structure of employees is a big problem in the process of digitalisation of business” with the following answers: ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was verified by significant ( $\chi^2=1.21230$ ,  $df=2$ ,  $p=0.5454$ ) binomial distribution with parameter  $p=0.5773$ . Mathematical expectation of 1.7319 and standard deviation of 0.8840 with mode 2 (group of 36 respondents) were realised. A total of 57 answers are in the positive domain. This binomial distribution is centred with a slight slope to the positive response domain (Figure 5).



**Figure 5** Histogram of significant binomial distribution of employee structure problems in the digitisation process  
**Source:** the authors

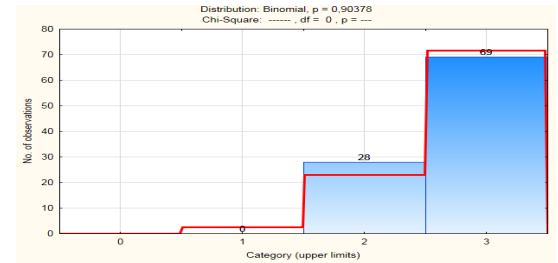
If the question of the current digital skills of employees is considered as a factor – grouping variable, and the question “Average life expectancy of employees” from the general information section as a dependent variable, the following results of Duncan’s analysis of variance test are obtained (Table 3):

**Table 3** The current digital skills of employees in relation to average life expectancy

	(0)	(1)	(2)	(3)
<b>Average:</b>	41.111	42.849	38.036	36.833
<b>(0) none</b>		0.6391	0.4073	0.2796
<b>(1) weak</b>	0.6391		0.2235	0.1417
<b>(2) good</b>	0.4073	0.2235		0.7456
<b>(3) very good</b>	0.2796	0.1417	0.7456	

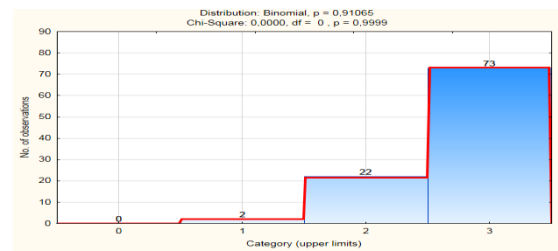
**Source:** the authors

The distribution of answers to the question: “How often do you use the Internet for personal reasons?” with the following answers: ((0) strongly disagree, (1) sometimes use, (2) often use, (3) constantly use) was not verified by significant ( $p<0.0001$ ) binomial distribution with parameter  $p=0.9037$ . The answers to this question realised a mathematical expectation of 2.7113 and a standard deviation of 0.4554 with mode 3 (group of 69 respondents) (Figure 6).



**Figure 6** Histogram of non-significant binomial distribution of personal reasons for using the Internet  
**Source:** the authors

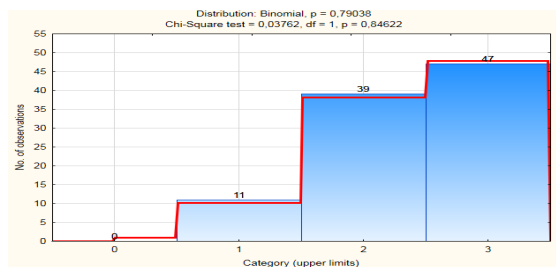
The distribution of answers to the question: “How often do you use the Internet for professional reasons?” with the following answers: ((0) do not use at all, (1) sometimes use, (2) often use, (3) constantly use) was verified by significant ( $p=0.9999$ ) binomial distribution with parameter  $p=0.9106$ . The answers to this question realised a mathematical expectation of 2.6082 and a standard deviation of 0.5506 with mode 3 (group of 73 respondents) (Figure 7).



**Figure 7** Histogram of significant binomial distribution of professional reasons for using the Internet  
**Source:** the authors

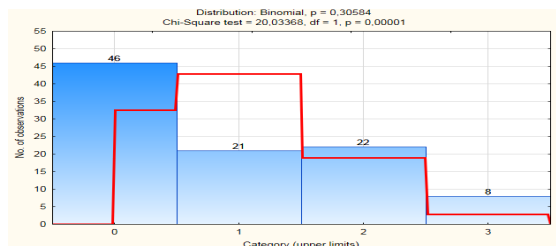
The distribution of answers to the question: “The big problem of insufficient digitisation is the lack of young educated staff” with the following answers: ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was verified by significant ( $\chi^2=0.03762$ ,  $df=1$ ,  $p=0.8462$ ) binomial distribution with parameter  $p=0.8462$ . The answers realised the mathematical expectation of 2.3711 and the standard deviation of 0.6819 with mode 3 (group of 47 respondents) (Figure 8).





**Figure 8** Histogram of the significant binomial distribution of the lack of young educated staff as a problem of insufficient digitisation  
Source: the authors

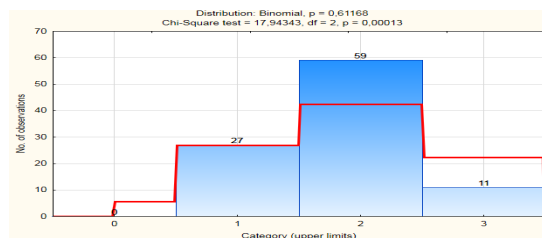
The distribution of responses to the statement: “We protect data with advanced data protection software” with the following responses: ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was not verified by significance ( $\chi^2=20.03368$ ,  $df=1$ ,  $p<0.0001$ ) by binomial distribution with parameter  $p=0.3058$ . The responses realised the mathematical expectation of 0.9175 and the standard deviation of 1.0172 with mode 1 (group of 46 respondents) (Figure 9).



**Figure 9** Histogram of non-significant binomial distribution of data protection with advanced software  
Source: the authors

### 4.3. Motivation

Distribution of responses to the statement: “Employees are motivated to acquire skills and knowledge necessary for the application of digital technologies” with the following answers: ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was not verified by a significant ( $\chi^2=17.94343$ ,  $df=2$ ,  $p=0.0001$ ) binomial distribution with parameter  $p=0.6118$ . The responses realized a mathematical expectation of 1.8351 and a standard deviation of 0.6069 with mode 2 (group of 59 respondents) (Figure 10).



**Figure 10** Histogram of non-significant binomial distribution of motivation for acquiring skills and knowledge necessary for the application of digital technologies  
Source: the authors

The distribution of answers to the question: “Employees are motivated to acquire skills and knowledge necessary for the application of digital technologies” was not verified by a significant binomial distribution ( $p=0.0001$ ) and had the following answers respectively:

(0) strongly disagree	0
(1) disagree	27
(2) agree	59
(3) strongly agree	11

Mathematical expectation of 1.8351 with mode 2 (group of 59 respondents) is in agreement with the answer “I agree” in relation to the motivation of employees to acquire the skills and knowledge necessary for the application of digital technologies. If we take the answer to the question “Employees are motivated to acquire skills and knowledge necessary for the application of digital technologies” as a factor, and the question: “Current digital skills of employees” as a dependent variable, we get the following results of Duncan’s analysis of variance test (Table 4):

**Table 4** Employee motivation in relation to current digital skills

	(0)	(1)	(2)	(3)
<b>Average:</b>	/	0.7407	1.3898	2.3636
<b>strongly disagree</b>	/	/	/	/
<b>disagree</b>	/	0.0005		0.0001
<b>agree</b>	/	0.0001	0.0001	
<b>strongly agree</b>	/		0.0005	0.0001

Source: the authors

The distribution of responses to the statements “Employees are motivated to acquire skills and knowledge necessary for the application of digital technologies” and “Current digital skills of employees” was not verified by binomial distributions, so we conclude that part of the answers was subjective. Let us remind: the average value of employees’ digital skills was 1.3196. Regardless of the subjectivity of the answer, we unreservedly conclude that the perceived motivation of employees is a key factor in the



current digital skills of employees! All the values in Table 4 (there was no answer “strongly disagree”) highlight significant differences!

If the statement “The current structure of employees is a big problem in the process of digitalisation of business” is considered as a factor - grouping variable, and the statement “Employees are motivated to acquire the skills and knowledge necessary for the application of digital technologies” as a dependent variable, the following results of Duncan’s analysis of variance test are obtained (Table 5):

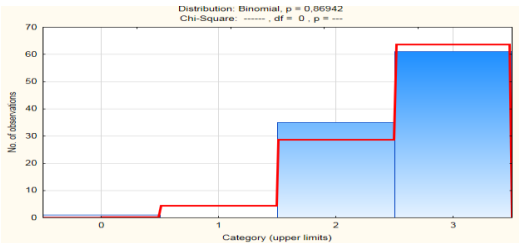
**Table 5.** The influence of the current structure of employees on the motivation to acquire skills and knowledge necessary for the application of digital technologies

	(0)	(1)	(2)	(3)
<b>Average:</b>	2.5714	2.2121	1.5278	1.5223
<b>none</b>		0.0365	0.0001	0.0000
<b>weak</b>	0.0365		0.0002	0.0002
<b>good</b>	0.0001	0.0002		0.9814
<b>very good</b>	0.0000	0.0002	0.9814	

Source: the authors

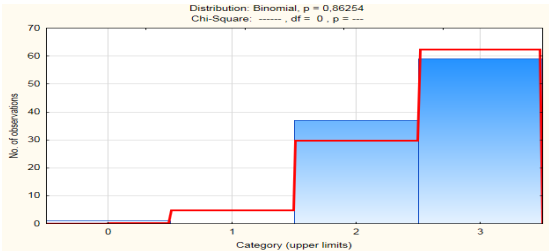
The distribution of responses to the statement “Employees are motivated to acquire skills and knowledge necessary for the application of digital technologies,, was not verified by binomial distribution, so we conclude that part of the answers was subjective. However, we still conclude that the structure of employees has a significant influence on the motivation of employees to acquire skills and knowledge necessary for the application of digital technologies.

Distribution of responses to the statement: “Trainer expertise affects employees’ motivation for digital skills training” with the following responses ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was not verified by a significant ( $p<0.0001$ ) binomial distribution with parameter  $p=0.8694$ . The responses realised a mathematical expectation of 2.7319 and a standard deviation of 0.4898 with mode 3 (group of 61 respondents) (Figure 11).



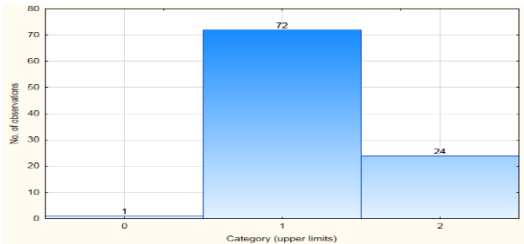
**Figure 11** Histogram of the non-significant binomial distribution of the influence of the trainer’s expertise on the motivation of workers  
Source: the authors

Distribution of responses to the statement: “Acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies” with the following answers: ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was not verified by a significant ( $p<0.0001$ ) binomial distribution with parameter  $p=0.8625$ . The responses realized a mathematical expectation of 2.5876 and a standard deviation of 0.5543 with mode 3 (group of 59 respondents) (Figure 12).



**Figure 12** Histogram of the non-significant binomial distribution of the impact of acquiring digital skills through training and learning on increasing the motivation of workers to apply digital technologies  
Source: the authors

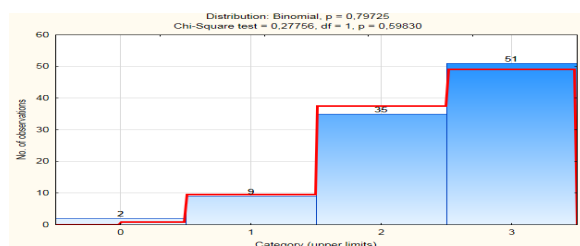
For the question: “Earnings of employees who are directly or indirectly involved in the digitisation process in the next 3 to 5 years” with the following answers: ((1) will decrease, (2) remain the same, (3) will increase), the answers realised mathematical expectation of 1.2371 and standard deviation of 0.4512 with mode 2 (group of 72 respondents), i.e. the majority of respondents believe that the earnings of employees will stagnate (Figure 13).



**Figure 13** Histogram of the distribution of changes in the earnings of workers in the next 3 to 5 years  
Source: the authors

Distribution of responses to the statement: “Older employees are less motivated to get involved in the digitization process” with the following answers ((0) strongly disagree, (1) disagree, (2) agree, (3) strongly agree) was verified by a significant ( $\chi^2=0.27756$ ,  $df=1$ ,  $p=0.5983$ ) binomial distribution with parameter  $p=0.7972$ . The answers realized the mathematical expectation

of 2.3917 and the standard deviation of 0.7438 with mode 3 (group of 51 respondents) (Figure 14).



**Figure 14** Histogram of the significant binomial distribution of the motivation of older workers for inclusion in the digitisation process

Source: the authors

The distribution of responses to the statement: “For data protection we use (you can choose several responses at the same time)” gave the following results:

- Authentication 12
- Authorisation 27
- Cryptography 1
- Digital signature 2
- Digital certificate 0
- Antiviruses 86
- Firewall 25
- Password 1
- None 1

Responses: Cryptography (1), Digital signature (2), Digital certificate (0), Password (1) and None (1) were not considered as a factor due to the small number of respondents who highlighted them. Also, the answer Antiviruses (86) was not considered as a factor due to the large number of respondents who highlighted them.

The impact of data protection by *authentication* as a factor:

- on the distribution of answers to the question: “How often do you use the Internet for personal reasons?” showed a significant impact ( $p=0.0036$ ). Respondents who use authentication had an average value of 3.000, and among respondents who do not use authentication, this value was 2.650. *Respondents who use the Internet more often for personal reasons significantly apply authentication as a protection system;*
- on the distribution of answers to the question: “How often do you use the Internet for professional reasons?” showed a significant impact ( $p=0.0123$ ). Respondents who use authentication had a

significantly higher average value of 3.000, and for respondents who do not use authentication, this value was 2.675. *Respondents who use the Internet more often for professional reasons significantly apply authentication as a protection system;*

- on the distribution of responses to the statement: “The expertise of the trainer affects the motivation of employees to acquire digital skills” showed a significant impact ( $p=0.0231$ ). Respondents who use authentication had a significantly higher average value of 2.882, and among respondents who do not use authentication, this value was 2.550. *Respondents who apply authentication as a protection system significantly emphasise the importance of the trainer’s expertise on the motivation to acquire digital skills;*
- on the distribution of responses to the statement: “Acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies” showed a significant impact ( $p=0.0151$ ). Respondents who use authentication had a significantly higher average value of 2.882, and among respondents who do not use authentication, this value was 2.525. *Respondents who apply authentication as a protection system significantly emphasise the importance of training and learning on the motivation to acquire digital skills;*
- on the distribution of responses to the statement: “Earnings of employees who are directly or indirectly involved in the digitisation process in the next 3 to 5 years” showed a significant impact ( $p=0.0001$ ). Respondents who use authentication had a significantly higher average value of 1.7059, and among respondents who do not use authentication, this value was 1.1375. *Respondents who use authentication have a significantly higher belief in the growth of earnings in the next 3 to 5 years;*
- on the distribution of responses to the statement: “We protect data with advanced data protection software” showed a significant impact ( $p=0.0001$ ). Respondents who use authentication had a

significantly higher average value of 2.4118, and among respondents who do not use authentication, this value was 0.6000. *Respondents who use authentication are fully aware of the potential of protection, while respondents who do not use it are aware of the fact that their data is not protected (there is an extremely large difference in ratings);*

- the distribution of responses to the statement: “Older employees are less motivated to get involved in the digitisation process” did not show a significant impact ( $p=0.0945$ ). Respondents who use authentication had an average value of 2.1176, and among respondents who do not use authentication, this value was 2.4500. This means that *the approach to the application of authentication does not create differences in the motivation of older employees for involvement in the digitisation process;*
- on the distribution of responses to the statement: “The big problem of insufficient digitization is the lack of young educated staff” did not show a significant impact ( $p=0.1965$ ). Respondents who use authentication had an average value of 2.1765, and among respondents who do not use authentication, this value was 2.4125. This means that *the approach to the application of authentication is not related to the lack of young educated staff.*

The impact of data protection by *authorization* as a factor:

- on the distribution of answers to the question: “How often do you use the Internet for personal reasons?” showed a significant impact ( $p=0.0006$ ). Respondents who use authorization had an average value of 2.9630, and among respondents who do not use authorization, this value was 2.6143. *Respondents who use the Internet more often for personal reasons significantly use authorization as a protection system;*
- on the distribution of answers to the question: “How often do you use the Internet for professional reasons?” showed a significant impact ( $p=0.0035$ ). Respondents who use authorisation had a significantly higher average value of

2.9630, and among respondents who do not use authorization, this value was 2.6420. *Respondents who use the Internet more often for professional reasons significantly use authorization as a protection system;*

- on the distribution of responses to the statement: “The expertise of the trainer affects the motivation of employees to acquire digital skills” showed a significant impact ( $p=0.0004$ ). Respondents who use authorisation had a significantly higher average value of 2.9259, and among respondents who do not use authorization, this value was 2.4857. *Respondents who apply authorisation as a protection system significantly emphasise the importance of the trainer's expertise on motivation to acquire digital skills;*
- on the distribution of responses to the statement: “Acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies” showed a significant impact ( $p=0.0032$ ). Respondents who use authorisation had a significantly higher average value of 2.8519, and among respondents who do not use authorisation, this value was 2.4857. *Respondents who apply authorisation as a protection system significantly emphasise the importance of training and learning on the motivation to acquire digital skills;*
- on the distribution of responses to the statement: “Earnings of employees who are directly or indirectly involved in the digitization process in the next 3 to 5 years” showed a significant impact ( $p=0.0001$ ). Respondents who use authorization had a significantly higher average value of 1.5926, and among respondents who do not use authorization, this value was 1.1000. *Respondents who use authorization have a significantly higher belief in the growth of earnings in the next 3 to 5 years;*
- on the distribution of responses to the statement: “We protect data with advanced data protection software” showed a significant impact ( $p=0.0001$ ). Respondents who use authorisation had a significantly higher average value of 1.8889, and among respondents who do not use authorisation, this value was

0.5428. Respondents who use authorisation are fully aware of the potential of protection, while respondents who do not use it are aware of the fact that their data is not protected (there is an extremely large difference in ratings);

- on the distribution of responses to the statement: “Older employees are less motivated to get involved in the digitisation process” did not show a significant impact ( $p=0.1794$ ). Respondents who use authorisation had an average value of 2.5556, and among respondents who do not use authorisation, this value was 2.3286. This means that the approach to the application of authorisation does not create differences in the motivation of older employees for involvement in the digitisation process;
- on the distribution of responses to the statement: “The big problem of insufficient digitisation is the lack of young educated staff” did not show a significant impact ( $p=0.5050$ ). Respondents who use authorisation had an average value of 2.2963, and among respondents who do not use authorisation, this value was 2.4000. This means that the approach to the application of authorisation is not related to the lack of young educated staff.

The impact of data protection by firewall as a factor is:

- on the distribution of answers to the question: “How often do you use the Internet for personal reasons?” showed a significant impact ( $p=0.0072$ ). Respondents who use a firewall had an average value of 2.9200, and among respondents who do not use a firewall, this value was 2.6389. Respondents who use the Internet more often for personal reasons significantly use a firewall as a protection system;
- on the distribution of answers to the question: “How often do you use the Internet for professional reasons?” showed a significant impact ( $p=0.0063$ ). Respondents who use a firewall had a significantly higher average value of 2.9600, and among respondents who do not use a firewall, this value was 2.6528. Respondents who use the Internet more often for professional reasons

significantly use a firewall as a protection system;

- on the distribution of responses to the statement: “The expertise of the trainer affects the motivation of employees to acquire digital skills” showed a significant impact ( $p=0.0427$ ). Respondents who use a firewall had a significantly higher average value of 2.8000, and among respondents who do not use a firewall, this value was 2.5417. Respondents who use a firewall as a protection system significantly emphasise the importance of the trainers’ expertise on motivation to acquire digital skills;
- on the distribution of responses to the statement: “Acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies” showed a significant impact ( $p=0.0255$ ). Respondents who use a firewall had a significantly higher average value of 2.8000, and among respondents who do not use a firewall, this value was 2.5139. Respondents who apply a firewall as a protection system significantly emphasise the importance of training and learning on the motivation to acquire digital skills;
- on the distribution of responses to the statement: “Earnings of employees who are directly or indirectly involved in the digitisation process in the next 3 to 5 years” showed a significant impact ( $p=0.0001$ ). Respondents who use a firewall had a significantly higher average value of 1.5600, and among respondents who do not use a firewall, this value was 1.1250. Respondents who use a firewall have a significantly higher belief in the growth of earnings in the next 3 to 5 years;
- on the distribution of responses to the statement: “We protect data with advanced data protection software” showed a significant impact ( $p=0.0001$ ). Respondents who use a firewall had a significantly higher average value of 2.0000, and among respondents who do not use a firewall, this value was 0.5416. Respondents who use a firewall are fully aware of the potential of protection, while respondents who do not use it are aware of the fact that their data is not protected

- (there is an extremely large difference in ratings);
- on the distribution of responses to the statement: “Older employees are less motivated to get involved in the digitisation process” did not show a significant impact ( $p=0.8059$ ). Respondents who use a firewall had an average value of 2.3600, and among respondents who do not use a firewall, this value was 2.4028. This means that *the approach to the application of firewall does not create differences in the motivation of older employees for involvement in the digitisation process*;
  - on the distribution of responses to the statement: “The big problem of insufficient digitisation is the lack of young educated staff” did not show a significant impact ( $p=0.80705$ ).

Respondents who use a firewall had an average value of 2.4000, and among respondents who do not use a firewall, this value was 2.3611. This means that *the approach to the application of firewall is not related to the lack of young educated staff*.

Relations of distributions of the answers to the questions from “How often do you use the Internet for personal reasons?” to “Acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies” (Q1, Q2, Q3, Q4), “Older employees are less motivated to get involved in the digitisation process” (Q5) and “The big problem of insufficient digitisation is the lack of young educated staff” (Q6) were compared by Signum tests. The results are given in Table 6:

**Table 6** Signum tests the agreement of the distribution

Signum distribution tests	Questions from the Questionnaire					
	Q1	Q2	Q3	Q4	Q5	Q6
	(2.7113)	(2.7319)	(2.6082)	(2.5876)	(2.3917)	(2.3711)
(2.7113)		0.7518	0.0665	0.0291	0.0051	0.0017
(2.7319)	0.7518		0.0550	0.0247	0.0011	0.0002
(2.6082)	0.0665	0.0550		0.6171	0.0736	0.0223
(2.5876)	0.0291	0.0247	0.6171		0.1124	0.0162
(2.3917)	0.0051	0.0011	0.0736	0.1124		0.8445
(2.3711)	0.0017	0.0002	0.0223	0.0162	0.8445	

Source: the authors

Respondents who, for personal and professional reasons, often or constantly use the Internet believe that the expertise of trainers has a significant impact on the motivation of employees to acquire digital skills through training and learning, but generally do not believe that acquiring digital skills through training and learning increases the motivation of employees to apply digital technologies. This means that the training was evaluated by respondents who use the Internet intensively only in the case when it was conducted by an expert trainer!

Also, respondents who often or constantly use the Internet for personal and professional reasons do not think that older employees are less motivated to get involved in the digitisation process and do not think that the big problem of insufficient digitisation is the lack of young educated staff. This means that respondents who use the Internet intensively believe that even older workers can use the Internet with the same intensity!

Respondents who especially evaluate the expertise of the trainers believe that older employees are less motivated to get involved in the digitalisation process and do not believe that the major problem of insufficient digitalisation is the lack of young, educated staff. This means that respondents who emphasise the expertise of trainers believe that the professional trainers do not pay enough attention to older employees, that older employees can achieve the necessary level for inclusion in digitisation processes and that the lack of young staff is not crucial for favourable digitisation.

Respondents who value training believe that older employees are less motivated to get involved in the digitalisation process and do not believe that the major problem of insufficient digitalisation is the lack of young, educated staff. This means that respondents who emphasise the value of training and learning believe that older employees are not given the chance to train and learn, that older employees can achieve the necessary level for inclusion in digitisation processes and that the lack

of young staff is not crucial for favourable digitisation.

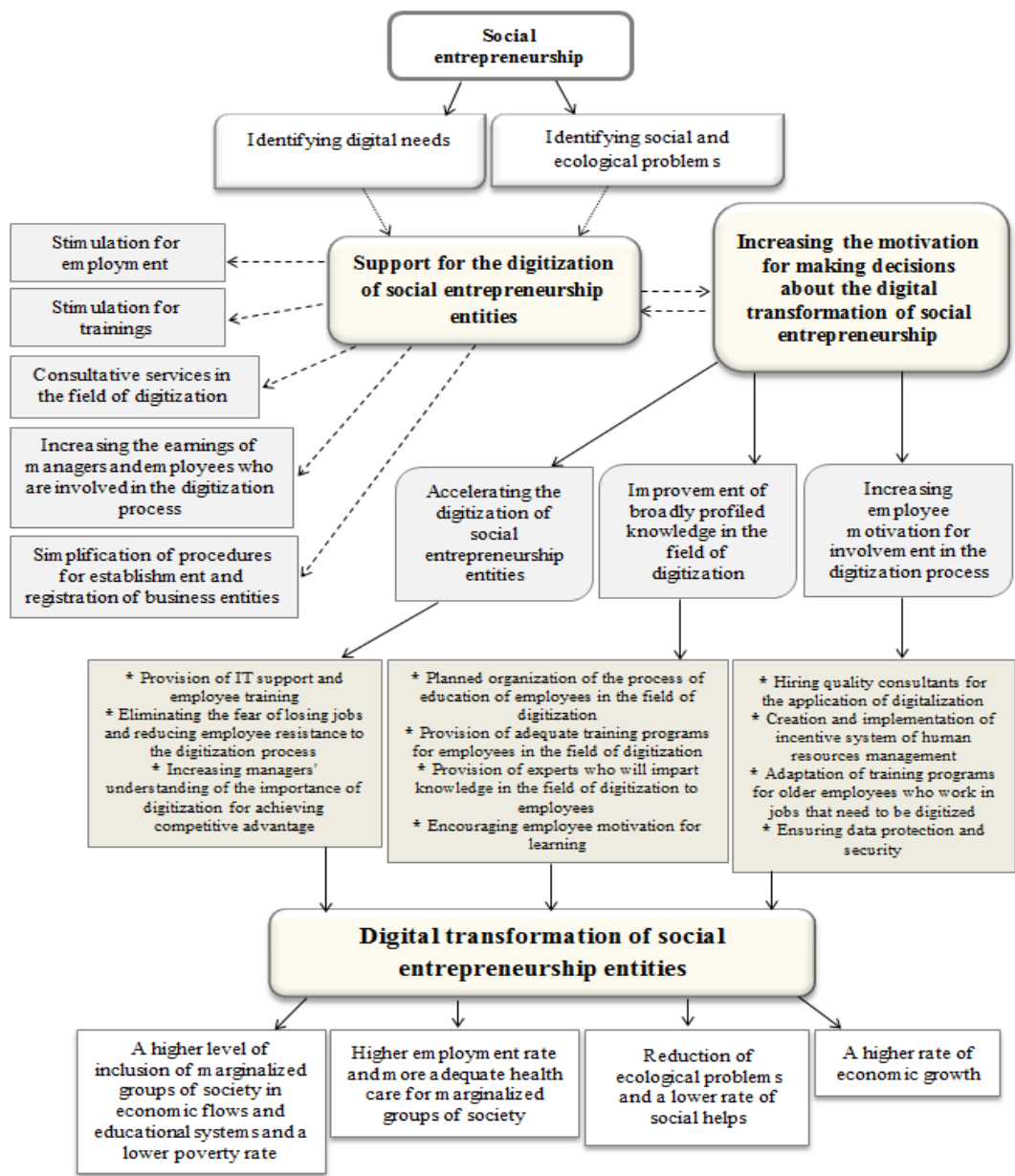
All those who believe that older employees are less motivated to participate in the digitalisation process also believe that a major problem of insufficient digitalisation is the lack of young, educated staff. The answer to these questions brings us back to the importance of the trainer's expertise, training and learning! The motivation of employees, which is necessary to accept digitalisation, can be achieved with the help of adequate education, in which employees gain new knowledge and thereby strengthen their self-confidence (Jha et al., 2017). The main prerequisite for developing countries to catch up the fourth industrial revolution is the education of managers to recognise global digitisation trends, investment in the education of young people and the training of personnel for new occupations, as well as encouraging employees to use online services with more confidence (Stošić-Mihajlović & Nikolić, 2017). Motivation positively and significantly affects the use of websites and other digitisation applications (Bastari, Eliyana, Syabarrudin, Arief, & Emur, 2020, p. 6). Motivation is a factor that has a significant impact which is associated with certain forms of technology use (Henry & Lamb, 2019, p. 614). Motivation plays an important role in the development of digital competences and the ability to use digital technologies (Beardsley, Albó, Aragón & Hernández-Leo, 2021, p. 1458).

According to the results of the research, we conclude that improving the motivation of employees and managers to participate in the digital transformation process will contribute to the development of social entrepreneurship entities, and we *confirm the hypothesis*.

#### 4.4. Model of development of social entrepreneurship

In this part of the paper, we will propose certain steps that could create the conditions for the digitisation of social entrepreneurship entities and thereby enable the development of social entrepreneurship and the improvement of the economic and social image of B&H measured through the increase in the inclusion of marginalised groups in economic and social flows, the increase in the number of employees, the reduction of social support and poverty rates, reducing the number of ecological problems and increasing the rate of economic growth in B&H. We will present these steps with the model shown in Figure 15.

It is necessary to speed up the process of digital transformation of social entrepreneurship entities by providing sufficient motivation, removing the fear of job loss due to digitalisation, through training and increasing managers' understanding of the importance of digitalisation in the struggle to achieve competitive advantages in modern business conditions. In order to encourage the digital transformation of social entrepreneurship, it is necessary to increase the motivation of employees and managers to participate in the digitalisation process through the engagement of quality and expert consultants for the application of digitalisation, the creation and implementation of an incentive system of human resource management (increase in earnings, monetary rewards, advancement in work, incentive working hours, etc.), adaptation of the education and training program to older employees and finally through the provision of data protection and security using various softwares (antiviruses, cryptography, firewall, authentication, etc.). All the mentioned would improve the process of digitisation of social entrepreneurship entities. This would lead to the inclusion of marginalised social groups in economic flows, better social and health protection of these groups, reduction of social helps from the state budget, reduction of poverty and unemployment rates and finally to the increase of economic growth. All this would have a positive impact on the economy of B&H.



**Figure 15** A model of digital transformation of social entrepreneurship entities  
Source: the authors

**5. Discussion**

Gabryelczyk, Sipior and Biernikowicz (2022) investigate the importance of motivation in making decisions about the digital transformation of business. These authors define motivation as “the goals that an institution pursues and the vigor with which it pursues those goals” (p. 1). The motivations on which the organizational change of business processes is based are an indispensable element of decision-making. Their research shows that motivation is the main factor used in the

decision to implement digital transformation. These authors also developed a model by which a motivational framework can help researchers and practitioners think broadly about the potential benefits of digitization at a time when digital transformation is accelerating. Carell, Lauenroth and Platz (2018) also showed the importance of managers’ motivation for making decisions about the digital transformation of business. The research was carried out on two real business examples where their design thinking model was applied. Here, it was also shown that the digital



transformation of business has numerous advantages compared to the traditional way of business.

Demir (2021) investigates the effects of digitalisation on social entrepreneurship and social value. The geographical area of the research refers to European countries. This author states that the limiting circumstance of the research is the lack of studies dealing with this topic. He came to the conclusion that there is a strong connection between the increase in the digitisation process and the development of social entrepreneurship, especially after the COVID-19 crisis. Torres and Augusto (Torres & Augusto, 2020) made a quantitative comparative analysis of the impact of digitalisation and social entrepreneurship on national well-being. The results of this research show that digitisation has an important impact on national well-being. However, the absence of social entrepreneurship can contribute to a low level of national well-being in countries that show a low level of digitisation, poor education systems and inadequate management. Thus, the results support the idea that social entrepreneurship is more important in countries where governments fail to meet social needs.

## Conclusion

Twenty-seven subjects of social entrepreneurship from all over B&H participated in this research. It was impossible to find the exact number of subjects of social entrepreneurship on the territory of B&H. Not a single competent institution has information about it. The sample of respondents was formed in various ways, through social entrepreneurship forums and associations and by respondents sharing the questionnaires among themselves. So, the exact population of social entrepreneurship subjects in B&H remains unknown. The research showed that social entrepreneurship is at a low level of development. The conclusion is that there is not enough understanding of the importance of this area of economic activity. Through research, it is shown how important motivation is for making decisions about digital transformation and how important digital transformation is for the development of social entrepreneurship. This can be seen from the reviewed literature, as well as from the results of empirical research. The conclusion is that motivation would contribute to the digital transformation of social entrepreneurship. As a result, a model of several steps was developed in order to provide digital transformation of social entrepreneurship. This

would contribute to the development of social entrepreneurship. As the developed model shows, the improved development of social entrepreneurship would lead to a reduction in unemployment, a reduction in social support, a reduction in ecological problems, better health care, that is, to the development of society and the economy.

*The scientific and pragmatic contribution of the research.* The scientific contribution is reflected in the analytical, theoretical and empirical significance of this research. The *analytical* significance of the research represents the possibility of determining the development direction of B&H, as well as the proposed new model of steps that will enable the digital transformation. In that way, this model will enable the development of social entrepreneurship, which will increase the competitiveness of this sector and thus ensure the strengthening of the economy and society. This research contributes to the existing *theories* in this field of research. Researching the literature, we came to the conclusion that this is still an under-researched area in domestic and foreign literature. There is a small number of papers that deal with the connection between motivation and digital transformation. Results of *empirical* research proved that motivation affects the digital transformation and that social entrepreneurship contribute to the development of economy and society.

The pragmatic contribution is reflected in enabling the application of the obtained results in practice, and that will be useful for *decision-makers* in social entrepreneurship entities, because it shows the advantages of digital transformation of social entrepreneurship development. This research will contribute to *investors* to getting know about the advantages of social entrepreneurship. The obtained results will also be useful to the *academic community*, which will be able to learn more about the role and significance of the motivation in making a decision about the digital transformation and about the development of social entrepreneurship. Considering that the research in this area is relatively recent, this paper will arouse greater interest in the academic community for research in this field. The research can be interesting to the *general public* because it shows the significance of the development of social entrepreneurship, which should be the driving force for solving economic and social problems in developing countries.

*Limitation of the research.* The biggest problem relates to the collection of data about the number of subjects of social entrepreneurship in B&H. Not a single institution that deals with business entities and entrepreneurship has any data about the number of subjects of social entrepreneurship, nor which of the registered business entities are engaged in social entrepreneurship.

*Future research.* We leave open the questions about the number of subjects of social entrepreneurship to future researchers, questions of other influencing factors on the development of social entrepreneurship such as knowledge, sources of funding for initial business activities, etc. Future researchers can deal with obstacles to the development of social entrepreneurship in underdeveloped countries, as well as their elimination. Future researches could be focused on innovating business models and the importance of innovation in social entrepreneurship.

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