

## DIGITIZATION OF BUSINESS ACTIVITIES AND HUMAN RESOURCES ORIENTATION ON SUSTAINABLE CONSUMPTION AND PRODUCTION

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**Purpose:** The main aim of the paper is to study the impact of the level of digitization of business activities on the human resources orientation on sustainable consumption and production (SCP) in small and medium-sized enterprises (SMEs).

**Design/methodology/approach:** During the research process, a survey was conducted among 140 SMEs in Poland at the beginning of 2020. The multiple regression model was built to find the link between the variables.

**Findings:** Statistical analysis indicated that digitization did not have a clearly positive impact on employees' orientation towards SCP. Among the analysed variables, negatively correlated relationships appeared, especially in the area of the digitization of contacts with the customers.

**Research limitations:** As limitations, it can be pointed the managerial approach during survey research, limited research group, as well as the study period excluding pandemic time.

**Originality/value:** The novelty of the research manifests itself in the fact that the research problem was applied to the small and medium-sized enterprises, instead of to corporations.

**Keywords:** digitalization, management, small and medium-sized enterprises, sustainability, sustainable consumption and production.

**Category of the paper:** Research paper.

### 1. Introduction

The existing literature discusses digital transformation in terms of its determinants, required resources and capabilities, transformation processes and advantages. Currently, small and medium-sized enterprises (SME) are gradually increasing the use of digital technologies to improve efficiency, minimize costs and introduce innovation (Bai, Quayson, Sarkis, 2021). SMEs have specific characteristics that influence the digital transformation process, justifying demonstrating specific requirements for the use of supporting tools and the organization of internal processes (Goerzig, Bauernhansl, 2018). Digital change is a particular challenge for

SMEs that are trying not to lag behind. When using new technologies, businesses must take into account not only the technical component, but also the social component. Proper preparation of human resources for the challenges of digital transformation becomes of key importance here (Peschl, Schüth, 2022). Without the commitment and motivation of managers and employees, it is difficult for an enterprise to face strong resistance to changes and it has a problem with achieving strategic goals, such as sustainability in business.

Matarazzo et al. (2021) point out that digital transformation today is more of a managerial than a technical issue. Successful digital transformation requires the acquisition and implementation of technical resources, but also the solution of many management problems related to adaptation to changing requirements (Ordieres-Meré, Remón, Rubio, 2020), and expectations from society, e.g. actions for sustainable development.

Digitization seems to be a neglected phenomenon, but its consequences are not always positive. Such a dissonance occurs in the case of the impact of digitization on activities and attitudes related to the promotion of sustainable consumption and production (SCP). This research aims to fill the knowledge gap on how the digitization in selected areas of business activity favour or built attitudes towards SCP among members of SMEs. The novelty of the research manifests itself in the fact that the research problem was applied not to corporations, which are often pioneers in digital transformation, but to SMEs.

## 2. Literature review

Currently, there is concern about the fact that our planet's ecosystem is threatened by excessive production and consumption. This should provide an impetus for changes in the way resources are managed, which confirms the gradual transition to the SCP model (Tarapata, 2020). Otherwise, the deepening imbalance will lead to an irreversible exceeding of nature's tolerance limits and an uncontrolled increase in social and ecological problems (Pabian, 2015).

SCP is one of the United Nations Sustainable Development Goals. SCP is designed to promote resource and energy efficiency and support the building of sustainable infrastructure, both on an individual and collective level. Thanks to SCP, everyone is to be provided with a better quality of life, through access to basic services or green and decent jobs. From an economic and social perspective, SCP helps to achieve development plans, reduce future economic, environmental and social costs, improve economic competitiveness and reduce poverty (Nishitani, Kokubu, 2020). This concept can be successfully applied to both the economy, organizations and individuals.

SCP policies and strategies are now global phenomena that are intensely explored by theorists and practitioners of business and economics. Meanwhile, the practical involvement of individuals in ecological products and markets varies regionally, but it is indicated that business

entities in highly developed countries are much more present and active in this area than those from developing countries (Thongplew, Spaargaren, van Koppen, 2017).

It is indicated that the social awareness of the SPC is constantly growing, and societies are increasingly oriented towards SCP, understand the collective responsibility for its maintenance (Torkabadi, Pourjavad, Mayorga, 2018). Sustainable consumption and production requires the combination of new technologies and appropriate changes in practices and behaviour in organizations, based on new business models (Bradley, 2021). As indicated by Onozuka et al. (2021), SCP is considered to be a key concept in predicting future production towards sustainable development. SCP refers to the use of services and related products to meet basic needs and provide a better quality of life, while minimizing the use of natural resources and the generation of waste and pollution throughout the business life cycle of a service or product. At the same time, they point to digitization as a promising enabler of SCP.

As enterprises are under increasing pressure to balance their economic performance with social and environmental practices, there is an increased interest in strategic management and entrepreneurship researchers in the sustainable development orientation construct (Adomako et al., 2021). The sustainability orientation on both production and consumption reflects the incorporation of ecological and social aspects into the business strategy. As a consequence, it is necessary to reconfigure the structure, processes and activities of the firm, but most of all the attitudes and behaviours of the members of the organization, to new sustainable strategic goals (Khizar et al., 2022). It seems that the sustainability orientation in general is, on the one hand, the result of pressure from various stakeholders, expecting business to promote behaviour in a socially and environmentally responsible manner (Schaltegger, Hörisch, Freeman, 2019). On the other hand, the long-term organizational benefits resulting from the integration of the principles of sustainable development within the organization are also confirmed (Calabrese et al., 2019).

The literature has conceptualized sustainability orientation as a strategic orientation that means capability at the company level (Amankwah-Amoah, Danso, Adomako, 2019). It should be considered as a strategic resource or dynamic ability of the company that leads to generating a competitive advantage and financial success (Claudy, Peterson, Pagell, 2016). Hence, companies are increasingly aware of the need to develop and implement a strategic orientation for the implementation of all three goals of sustainable development: economic, social and environmental (Khizar, Iqbal, Rasheed, 2021).

Sustainable development-oriented organizations face major challenges as they have to integrate environmental, social and commercial logic, which often stand in sharp contrast to each other, which can lead to business instability and hinder the creation of environmental and social value (Davies, Chambers, 2018). Recent studies have adopted the view that digital technologies can support these challenges, due to the transformative capacity of digitization, which is changing the nature of entrepreneurship and changing the approach to sustainable development (Gregori, Holzmann, 2020). It is emphasized that digital technologies support

transparency, efficiency and real-time operation, improving customer relations, as well as efficiency, productivity, costs' levels and delivery time, and this translates directly into sustainable development (Nayal et al., 2022).

Digitalisation is touted as a tool to accelerate the transition to sustainable development. The convergence of digitization and sustainable development provides new tools that enable firms to make a lasting impact on our planet's natural resources (George, Schillebeeckx, 2022). Digitization is ubiquitous today. Digital technology plays such an important role in people's lives that it definitely determines social practices and consumer behaviour. The question is to what extent digitization is transforming human resources practices in a direction that yields sustainability effects. Overall, digitization has a huge impact on energy, materials and ecosystems. However, the relationship of digitization to SCP orientation remains unclear. In fact, it is argued that digitization may run counter to a just transition to sustainable development, unless the digital system is reoriented towards inclusive practices, micro and macro policy democratization, and environmental regulation (Andersen et al., 2021).

### 3. Methods

The main aim of the paper is to study the impact of the level of digitization of business activities on the human resources orientation on SCP in small and medium-sized enterprises. For the aim purposes of the research process and after an in-depth review of the international literature, the following hypothesis was formulated:

H1: SME activities' digitization has a positive impact on SCP orientation.

In order to verify the research hypotheses, the following research procedures were adopted. The quantitative research was designed for SMEs, using the survey questionnaire. The final study covered 140 SMEs. The research was carried out in 2020, and the selection of the research group was not representative. Hence, the research results should be treated as directions of in-depth quantitative research in the future. For the evaluation of selected factors, a five-point Likert scale was adopted. The respondents were the owners of the surveyed business entities or senior managers.

The results were verified in terms of formal correctness, and then statistically analysed using the software Statistica 13. The reliability of the research was investigated using Cronbach's  $\alpha$  coefficient. The value of reliability test (for digitization variables) is at a satisfactory level  $\alpha = 0.932$ .

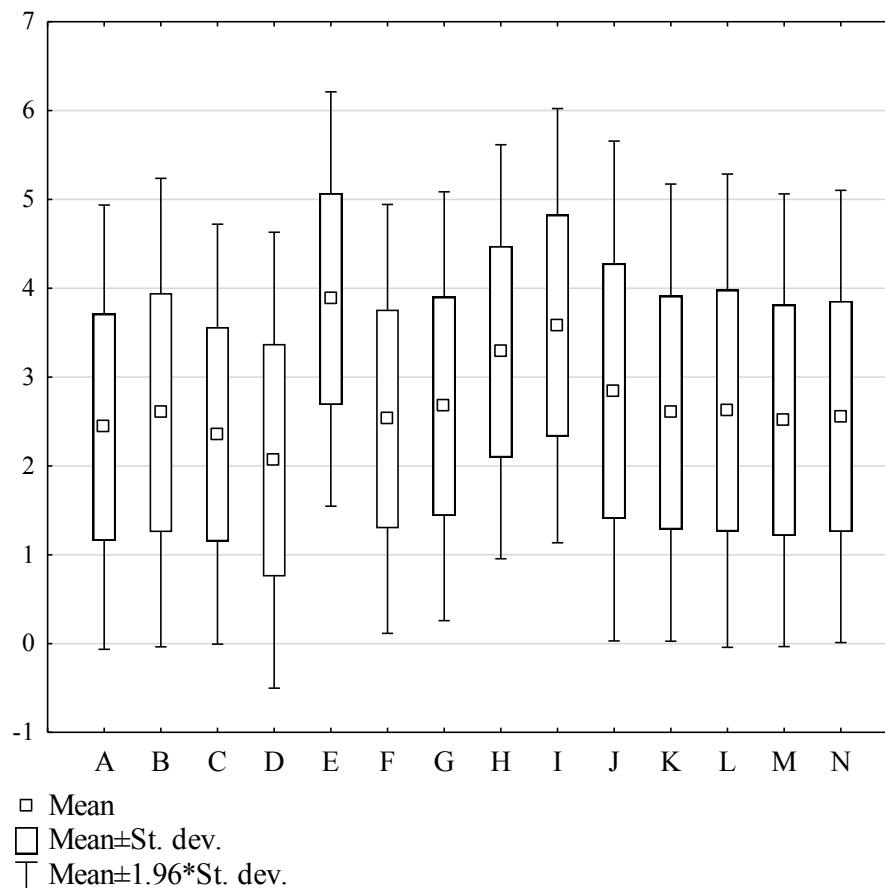
For general results presentation, descriptive statistics were used, as a commonly accepted method of business research. Then, multiple regression model was built to find the link between the independent variables and the dependent variable (SCP orientation).

The group of independent variables consists of 14 firm's digitalization elements, formulated as statements to assessment by respondents:

- A. The enterprise has a digital vision of transformation because it needs new markets.
- B. The company benefits from digitization at all management levels.
- C. Within the enterprise, employees are dedicated to introducing digital trends.
- D. Investing in digitization is one of the established business priorities.
- E. The enterprise monitors how customer requirements are changing using digital tools.
- F. The enterprise is experimenting with multiple digital channels in communicating with customers.
- G. Digital technology is used to keep in touch with customers and solve their problems.
- H. Data collected electronically from customers is continuously used to improve solutions and services.
- I. The enterprise has the ability to prepare digital solutions for customers so that they can achieve higher market share.
- J. All production machines and devices are networked, data is acquired in real time and available for further decision making.
- K. The enterprise has an integrated platform that provides full visibility of all activities and is available to multiple users.
- L. All business related information is available remotely.
- M. Key Performance Indicators (KPIs) are well defined within the activities and are automatically updated.
- N. Organizational units can easily collaborate through digital channels.

#### 4. Results

The primary data obtained as a result of the questionnaire surveys were subjected to statistical analysis. The dependent variable in the conducted research is the orientation of the members of the organization towards the implementation of SCP principles. The level of this orientation was assessed by the respondents at an average of 4,214 on a 5-point Likert scale. The standard deviation was 0.904. On the other hand, the independent variables selected in the study related to selected areas of the firm's activity, in which activities were undertaken with the use of digital tools or in a digital form (Fig. 1). The mean values of the responses ranged from 2.000 to 4.000. The highest mean of scores was related to the E variable (3.878) and the J variable (3.579). On the other hand, the lowest scores were obtained for variable D (mean = 2.064) and variable C (2.357). As for the value of the standard deviation, which indicates the dispersion of the response, it was the highest for the J variable (1.436), and the lowest for the E variable (1.190).



**Figure 1.** Elements of the digitization of business activities. Source: own research.

The trends in the impact of business activities digitization on SCP orientation in SMEs were assessed using multiple regression analyses. The SCP orientation level was included as dependent variables in the regression. The summary of the multiple regression model (Table 1) confirmed that the entire model is statistically significant ( $p < 0.05$ ). Moreover, the whole model explained 39.5% of variation in the response, which seems to be a satisfactory result.

**Table 1.**  
*Multiple regression model summary*

R Square	Adjusted R Square	Sum of Squares SS	df	Mean Square MS	Change Statistics			F	p
					SS	df	MS		
0.456	0.395	51.74	14	3.696	61.83	125	0.495	7.472	0.000

n=140	Parameters estimates Sigma-restricted parameterization			
	SCP Param.	SCP Std. Err.	t	p
Intercept	2.705	0.276	9.783	<b>0.000</b>
A	-0.097	0.116	-0.839	0.403
B	0.285	0.108	2.623	<b>0.010</b>
C	0.029	0.094	0.313	0.755
D	-0.318	0.084	-3.778	<b>0.000</b>

Cont. table 1.

E	0.238	0.075	3.182	<b>0.002</b>
F	-0.216	0.094	-2.290	<b>0,024</b>
G	0.055	0.091	0.607	0.545
H	0.431	0.081	5.348	<b>0.000</b>
I	-0.331	0.081	-4.070	<b>0.000</b>
J	0.043	0.085	0.501	0.617
K	0.063	0.151	0.420	0.676
L	0.046	0.115	0.399	0.691
M	-0.170	0.109	-1.560	0.121
N	0.336	0.105	3.209	<b>0.002</b>

Source: own research.

Within model, for seven out of fourteen predictors, we can speak of statistical significance in the presented multiple regression model. However, among these seven predictors, four variables had a positive effect on the dependent variable, while three variables had a negative effect on the SCP orientation. As a result, it is necessary to reject the H1 hypothesis and recognize that the digitization of activities and processes in SMEs may also reduce employees' attitude to the implementation of SCP principles.

## 5. Discussion and Conclusion

The orientation towards sustainable development is considered at the firm's level in the area of strategic management. In order to speak of an orientation at a strategic level, it must function in the organizational culture of an organization and be focused on the integration of environmental and social interests and practices in strategic, tactical and operational activities. Such an approach requires the involvement of not only managers, but all members of the organization in the process (Ruiz-Ortega, Parra-Requena, García-Villaverde, 2021).

It is taken for granted that digitization has a huge and widespread impact on many areas of management and various sectors of the economy (Schiavone et al., 2022). Although digital transformation has been recognized as one of the main drivers of economic growth and sustainable development in today's business world (Maroufkhani, 2022), its impact on individual activities and processes as well as on human resource aspects are not so clear-cut. Moreover, the results of empirical research in the field of pro-environmental activities and opportunities from digital transformation indicate inconsistent dependencies, and additionally often there is uncertainty regarding the net environmental effects of digital transformation (Kunkel, Matthes, 2020).

Summarizing the research results, it is necessary to emphasize the ambiguous influence of digitization on the building of SCP. Although the positive impact of digitization on sustainable development is often confirmed, the research carried out in the sector of SMEs shows that the

digitization of some activities, especially in relation to customer relations, may even contradict the implementation of SCP principles among members of the organization. Analyses in this area therefore require a detailed approach, and generalizations should be avoided when making conclusions.

The conducted research requires the identification of several limitations in the research process. First, it is simplistic to rely on the opinion of owners or managers when analysing aspects that apply to all members of the organization. In that case, future research could involve groups of respondents at different levels of the organizational structure. Secondly, the research group was rather small ( $n = 140$ ), therefore it would be advisable to conduct representative quantitative research in the future. Thirdly, the research was carried out at the beginning of 2020, which means that it did not cover the recent crisis situations, including the impact of the Covid-19 pandemic, which extremely intensified the digitization processes in economic activity. Hence, in future research it could be possible to make a comparative analysis, e.g. from the period before and after the pandemic. This would bring some implications for management practitioners who could evaluate and prepare digital tools that support SCP orientation at firm level.

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