

The Influence of Digitalisation on SMEs

Jeanina Ciurea
Loredana Dinu
Gabriel Dinu

“Babes Bolyai” University, Department of Business Administration Resita, Romania

jeanina.ciurea@econ.ubbcluj.ro

loredana.dinu@econ.ubbcluj.ro

gabriel.dinu@econ.ubbcluj.ro

Abstract

SMEs are an essential part of the economy, providing jobs and stimulating economic growth. Helped by digitalisation, SMEs will be a central part of the dual transition to a sustainable and digital economy. In order to make the economy green as inclusive and as broad as possible, SMEs will have to digitise their processes, provide more goods and services digitally and reduce their waste associated with the raw material economy.

This paper deals with a sensitive topic – the digitisation of small and medium-sized enterprises (SMEs) with a view to the socio-economic development of the regions and most importantly combating unemployment.

Key words: Management, SMEs, digitalization

J.E.L. classification: M15

1. Introduction

Although SMEs are a true engine of the economy as a whole, their survival depends to a large extent on the accuracy of the data and information used. And their performance, through the higher or lower levels recorded during the last period, both globally and at the level of resources used, have led to the identification of the true needs for improving management. (Demyen, Ciurea, 2013)

As far as management of business organizations is concerned, digitization is already seen as a necessary condition for their competitiveness, regardless of size and area of work. (Gerasimenko, Razumova, 2020). That is why digitalization in business management and marketing has recently become an object of scientific study (Gerasimenko, 2019).

In an era of globalisation, of modernizing processes in all branches of activity, in a period of time dominated in particular by the rapid transmission of information, companies seek to align themselves with the general standards imposed worldwide. No organisation can survive in isolation, using rudimentary working methods, without adapting to new trends (Demyen, Ciurea, 2013).

Digitalisation is one of the most visible phenomena of this decade, and it is evolving at an alarming rate. We can say that digital transformation is one of the primary transformational paths in the modern economy. The economic crisis caused by the pandemic has once again highlighted the role of technology in general and digital in particular, both in the economy and in society.

The world around us is becoming more technical, and in this context it is natural to be concerned about the current digital revolution. Digital transformation is essentially a major goal, with our country talking more and more about it. The challenges of digitalisation are different for businesses, with SMEs in need of different support measures, depending on their level of digitisation and their size. Digitalisation continually produces new plans of action while additionally essentially affecting society and employees. Digitalisation is also about technology and how it transforms people's lives in the workplace (Deaconu, Igreț, 2019).

2. Literature review

The challenges of digitalisation are different for businesses starting from risk reduction, cost optimisation or rapid exploitation of opportunities, with SMEs needing different support measures, depending on their level of digitisation and size, a legal framework that is sufficiently flexible, neutral and secure for the future, ensuring fairness transparency and a level playing field. Digitalisation should be seen as a tool for supporting work and increasing productivity and not as an imposition or an end in itself. A profound digital change is needed, aimed at making the increasingly complex production processes more efficient, through new technological solutions, in order to meet the needs of customers. The creation of added value from digital innovation occurs in products, processes and business models.

As indicated by Reis J. et al. digitalisation is the marvel of changing simple information into computerised language (for example digitisation), which, thusly, can improve business connections among client and organisations, bringing added value to the entire economy and society.

In order to support the development of the information society and, respectively, the increase of digital competitiveness, the European Commission has fostered a tool to evaluate the presentation of digital society, called the Digital Economy and Society Index (DESI). It tends to five primary regions: network, human resources, web use, digital innovation integration and advanced public administrations. In view of past pandemic information, the 2020 DESI report positions Romania 26th out of the 28 EU Part States. Romania's performance was identical in four of the five measured DESI areas, a situation caused by slow progress in general, but also by political developments.

In terms of human capital, Romania ranks 27th out of 28 EU countries, stagnating in this respect compared to the previous year. Less than a third of Romanians have at least basic digital skills. Romania is well positioned in terms of ICT graduates, placing fifth among Member States, with 5.6% of all graduates (EU average: 3.6%).

When talking about the use of Internet services, Romania still has the lowest level among EU Member States. However, there are two online activities where our country ranks 6th in the EU. It is about the use of social networks (82%, compared to an EU average of 65%) and video calls (67%; EU average: 60%).

Romania positions 27th among EU nations when referring to business integration of digital technology, beneath the EU normal. There has been a slight improvement in the portion of SMEs selling on the web, from 8% in 2017 to 11% in 2019, however it stays underneath the EU normal of 18%. More and more SMEs are selling their products online outside the country, but this only applies to 6% of the total number of SMEs, compared to an EU average of 8%.

In terms of digital public services, Romania has ranked last among EU Member States in the past three years. In contrast, Romania ranks 8th in terms of users of e-government services, with 82% of internet users, compared to the EU average of 67%.

The DESI study highlighted that Romania does not have a national digital transformation strategy for businesses and that specific measures are needed to support the digitisation of SMEs and raise awareness of the importance and benefits of adopting digital technologies. The evaluation was based on data from 2019, before the outbreak of the COVID-19 pandemic, which once again highlighted the crucial importance of citizens' digital skills and the digitisation of the economy.

3. Research methodology

Based on the results of the DESI index, as well as analysing the information in the literature, we carried out a research on a randomly selected sample of 73 SMEs from Caraş-Severin. Respondents were represented by decision-maker factors in the SMEs analysed. The objectives of the study focused on identifying the need for digitisation and its impact on SMEs. We have made the hypotheses: H0: digitalisation does not have a significant impact on SMEs in Caraş – Severin H1: digitalisation has a significant impact on SMEs in Caraş – Severin, and to determine the impact of digitalisation we used the test χ^2 . After formulating the null and alternative hypothesis, the level of significance of the test is determined, the value of which is usually chosen as $\alpha = 0.05$ (5%). (Şipoş C, Preda, 2004) After calculating the test χ^2 , it is compared the calculated value with the tabular value and decided to accept or reject the null hypothesis, as follows:

- if χ^2 calculated is greater than the tabular value of χ^2 , the null hypothesis (H0) must be rejected and the alternative hypothesis (H1) accepted;
- if χ^2 calculated is less than the tabular value of χ^2 , the null hypothesis (H0) must be accepted and the alternative hypothesis (H1) rejected.

4. Results

Following the collection of data from respondents, the results highlighted the following aspects:

Question 1. Do you think that digitalisation will lead to an increase in the performance of SMEs?

Response Variants	Absolute frequencies	Relative frequencies (%)
Agreement	68	93,15
Disagreement	2	2,74
Undecided	3	4,11
Total	73	100

Source: Made by authors

We can see that 68 (93.15%) respondents believe that digitalisation will increase the performance of SMEs in Caraş-Severin, while 2 (2.74%) opposed this view and 3 (4.11%) were undecided.

Question 2. The implementation of digitalisation in SMEs will be a determining factor for the economic development of the county?

Response Variants	Absolute frequencies	Relative frequencies (%)
Agreement	65	89,04
Disagreement	6	8,22
Undecided	2	2,74
Total	73	100

Source: Made by authors

The results indicate that 65 (89.04%) respondents agree that the implementation of digitalisation is a determining factor for the economic development in Caraş-Severin, while 6 (8.22%) had a contrary opinion and 2 (2.74%) were undecided.

Question 3. Will the implementation of digitalisation in SMEs lead to new business opportunities in the county?

Response Variants	Absolute frequencies	Relative frequencies (%)
Agreement	57	78,08
Disagreement	3	4,11
Undecided	13	17,81
Total	73	100

Source: Made by authors

It can be found that 57 (78.08%) respondents believe that the adoption of digitisation in SMEs will lead to new business opportunities in the county, while 3 (4.11%) did not agree on this, and a number of 13 respondents (17.81%) are undecided

Question 4. Do you think that digitisation in SMEs will help reduce unemployment in Caraş-Severin?

Response Variants	Absolute frequencies	Relative frequencies (%)
Agreement	61	83,56
Disagreement	2	2,74
Undecided	10	13,7
Total	73	100

Source: Made by authors

83.56% of the respondents, felt that the introduction of digitisation in SMEs could help reduce unemployment in the county, while 2 (2.74%) had a different opinion, and 10 (13.7%) had no opinion.

Question 5. Will the digitisation of SMEs lead to the creation of new jobs?

Response Variants	Absolute frequencies	Relative frequencies (%)
Agreement	59	80,82
Disagreement	2	2,74
Undecided	12	16,44
Total	73	100

Source: Made by authors

The results show that 80.82% of respondents see the opportunities that digitalisation offers by creating new jobs, 2.74% of respondents are sceptical in this regard, while 16.44% could not decide on this issue.

Based on the respondents responses to the questionnaire, we made the totalizer table with the observed frequencies:

Question	Response Variant			TOTAL
	Agreement	Disagreement	Undecided	
1	68	2	3	73
2	65	6	2	73
3	57	3	13	73
4	61	2	10	73
5	59	2	12	73
TOTAL	310	15	40	365

Source: Made by authors

To calculate the χ^2 test, we will use the following formula:

$$\chi^2 = \sum \frac{(O_{ij} - A_{ij})^2}{A_{ij}}$$

O_{ij} – the frequencies of row i and column j resulting from observation;

A_{ij} - the frequencies of row i and column j that are expected to result according to the null hypothesis.

The expected frequency (A_{ij}) shall be determined according to the formula:

$$A_{ij} = \frac{TR \cdot TC}{TG}$$

TR – row total

TC – column total

TG – overall total

Row&Column	O _{ij}	A _{ij}	(O _{ij} – A _{ij}) ²	(O _{ij} – A _{ij}) ² /A _{ij}
R1C1	68	62	36	0,5806
R1C2	2	3	1	0,3333
R1C3	3	8	25	3,125
R2C1	65	62	9	0,1452
R2C2	6	3	9	3
R2C3	2	8	36	4,5
R3C1	57	62	25	0,4032
R3C2	3	3	0	0
R3C3	13	8	25	3,125
R4C1	61	62	1	0,0161
R4C2	2	3	1	0,3333
R4C3	10	8	4	0,5
R5C1	59	62	9	0,1452
R5C2	2	3	1	0,3333
R5C3	12	8	16	2
TOTAL				18,5402

Source: Made by authors

$$\chi^2 = 18,5402$$

The ovariene value of χ^2 is compared to the theoretical value of χ^2 . For this purpose we determine the number of degrees of freedom in the contingency table by formula: $(r-1)(k-1) = (5-1)(3-1) = 4*2 = 8$ degrees of freedom. For a significance level of 0.05 (a 95% probability) and 8 degrees of freedom, the tabular value of χ^2 is 15,507.

Since the calculated value of χ^2 is larger than the tabular value of χ^2 , we reject the null hypothesis and accept the alternative hypothesis that digitalisation has a significant impact on SMEs in Caraş-Severin.

5. Conclusions

Digitalisation is essential for SMEs to compete in the provision of goods and services, attracting and retaining young people with superior digital skills.

Sooner rather than later, we can say that digitalisation will be the instrument by which numerous SMEs will actually want to develop internally and also externally. Digitalisation is the future on which SMEs can rely, and not just in times of crisis. From the digital environment, all types of customers will want to collaborate and work with companies that are efficient and have innovative solutions for providing services through technology.

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