

# The role of the information and communication technologies in the institutional and economic sustainability of the post-pandemic small and medium enterprises

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*This paper focuses on the factors that determine the institutional and economic sustainability of the post-pandemic small and medium enterprises (SMEs). In addition, it assesses the role of the information and communication technologies (ICTs) and digitalization in the creation and maintaining of sustainable SMEs during and after the COVID-19 crisis of 2020–2021. Our research is based on the unique sample of surveys collected in 200 Russian SMEs from seven different regions of the country between June and October 2022 and on the empirical model that employed this data. Our results allowed us to distinguish the nature of the impact of an external environment on the socio-economic stability of SMEs and to identify the institutional and economic factors that can hinder or contribute to their sustainable development in the post-pandemic period. These results can be used to build strategies for sustainable development at the regional level both in Russia and other countries. Our findings can be useful to managers and owners of small and medium-sized businesses in the process of integrating the goals of organizational and regional development, as well as for ensuring the networking of government, social organizations, and business at the regional level in the post-COVID era.*

**Keywords:** sustainability; digitalization; COVID-19; institutional change; small and medium enterprises

**JEL codes:** B15, L20, L86, Q01

# Роль информационных и коммуникационных технологий в институциональной и экономической устойчивости малых и средних предприятий в постпандемический период

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*В данной статье основное внимание уделяется факторам, определяющим институциональную и экономическую устойчивость малых и средних предприятий (МСП) в период после пандемии коронавируса. Кроме того, статья оценивает роль информационно-коммуникационных технологий (ИКТ) и цифровизации в создании и поддержании устойчивых МСП во время и после кризиса COVID-19 2020–2021 гг. Наше исследование основано на уникальной выборке, основанной на опросе 200 российских МСП из семи различных регионов страны в период с июня по октябрь 2022 года и на эмпирической модели, в которой использовались эти данные. Наши результаты позволили выделить характер воздействия внешней среды на социально-экономическую устойчивость МСП и выявить институциональные и экономические факторы, которые могут препятствовать или способствовать их устойчивому развитию в постпандемический период. Результаты нашего исследования могут быть использованы для выработки стратегий устойчивого развития на региональном уровне как в России, так и в других странах. Кроме того, они могут быть полезны руководителям и собственникам малого и среднего бизнеса в процессе интеграции целей организационного и регионального развития, а также для обеспечения сетевого взаимодействия государственных, общественных и бизнес-структур на региональном уровне в постковидную эпоху.*

**Ключевые слова:** устойчивость; цифровизация; институциональные изменения; малые и средние предприятия

## Introduction

In general terms, the economic science apprizes the role of the small and medium enterprises (SMEs) for being the basis for the stability and the development of economic systems, for providing jobs and stability at the labour markers, opening a wide variety of market niches, creating diversity and responding to the needs of the customers (Martin et al., 2019; Naradda Gamage et al., 2020; Adomako

et al., 2021). SMEs are seen to possess a very important advantage compared to large companies – they can quickly and promptly adapt to the changing market needs and implement social and economic innovations at no time (Dheer et al., 2022). In addition, they can also be the drivers of the institutional change (Toomsalu et al., 2019; Horváth and Szabó, 2019; Gregurec et al., 2021). At the same time, the owners as well as the employees of the SMEs are the first to be hit in times of various crises and socio-economic upheavals, as far as their ability to withstand cataclysms of all sorts is often very limited (Zakaria et al., 2022).

During and after the recent COVID-19 pandemic, SMEs all around the world have experienced significant difficulties (e.g. falling demand and lack of customers, lack of working capital, increase in purchase prices, reduction and dismissal of employees, problems with the repayment of debts, and the payment of rents) all caused by the social distancing and lockdowns regime as well as the restrictions on business activities associated with them (Dvořák et al., 2020; Siuta-Tokarska, 2021; Zutschi et al., 2021). The above problems and issues contributed to the change in the format of activity and the maximum transition of small and medium business to the online and distance mode, at least in those areas and sphere of business where such a transformation was possible and feasible (Pu et al., 2021; Rausser et al., 2021).

Looking at the current situation of the SMEs in Russia, it is possible to witness the impact of many negative factors, such as ongoing strains and waves of the coronavirus pandemic, the pressure of economic sanctions, general turbulence in the economy, and the permanent and protracted nature of the socio-economic crises (Razumovskaia et al., 2020). Due to all that the SMEs sector, which constitutes the basis of the national economy not only in Russia but also in many other countries around the world, is in a pressing need of developing schemes and tools for its sustainable economic development that requires deep institutional changes (Gamidullaeva et al., 2020). When searching for these institutional changes that would lead to the social and economic stability, it needs to be acknowledged that in the countries such as the Russian Federation, the role of the state might be indispensable (Isensee et al., 2020). The economic direction in the interests of ensuring the sustainable development of the Russian SMEs currently requires, first of all, concentration on internal material and economic processes, the most important of which is to ensure the socio-economic stability of the most important sector of the Russian economy, which is the sector of SMEs, as well as the establishment its effective interaction with the state.

The economic sanctions imposed by the Western countries on Russia added the additional uncertainty into the economic development and would most likely results in a significant decrease in the standard of living and solvency of the majority of the population, which, in turn, would lead to the withdrawal of some SMEs from the market due to bankruptcy and insolvency (Kot et al., 2023). At the same time, it should be noted that Russian SMEs that have gone through a harsh survival during the COVID-19 pandemic, learned how to implement digitalization of their business, or how to organize the work in a remote format – the rapid development of services for conducting business online provides a good basis for the sustainable development. The extensive use of information and communication technologies by SMEs during the 2020–2021 coronavirus' crisis ensured competitiveness allowing them to retain staff and customers, optimize costs, as well as to expand their markets. In addition, a noticeable re-orientation of the Russian SMEs on the domestic market of tourism and leisure services is likely to maintain high demand which might be a reason for the cautious, albeit limited optimism. One way or another, at the moment, one can see the complex impact of adverse cumulative macro-environment factors on Russian SMEs. The majority of researchers agree that the economic crisis is here to stay and might take years to fade away. Under these conditions, the SMEs sector required the proper institutional environment for developing pathways towards the sustainable development (Prohorovs, 2022; Schimmelfennig and Winzen, 2023).

This paper explores the opportunities for cooperation available for the affected investors, policymakers, stakeholders, and other charitable institutions to leverage for building small businesses resilience, as the world plans a post-pandemic economic recovery and seeks to achieve its larger sustainable development goals. Furthermore, the paper looks into the issue how the relevant stakeholders could look to near- and medium-term tools to help mobilize private capital, resuscitate the

world's economies, mitigate risks to financing small businesses, and enable an inclusive economic recovery at home – all with a purpose to help the sector of small and medium enterprises. It becomes clear that governments all around the world also need to focus on the business stability and the financial resilience of micro-enterprises as well as SMEs as the priorities in their respective national development plans, including giving this sector special attention in their post-pandemic economic revival strategies and policies.

Overall, the main purpose of this study is to analyse the available theoretical sources as well as the available data on the impact of a turbulent external environment on the socio-economic sustainability of SMEs in the COVID-19 era and to identify factors that hinder or contribute to its sustainable development in the future. We hope that understanding these results and outcomes might contribute to the development of knowledge about the factors affecting the socio-economic sustainability of SMEs in Russia and beyond, as well as would allow us to formulate proposals for improving the financial and social sustainability of small and medium-sized enterprises.

### **Institutional economics approach to small and medium business enterprises**

In economic theory, in general, and the institutional economics, in particular, SMEs are recognized and acknowledged as the powerful tool to achieve sustained economic growth (Prasanna et al., 2019; Urbano et al., 2019; Tsygankov et al., 2021). This is due to the well-known fact that SMEs account for a large share of total businesses in many countries (most often the economies of Southern Europe and other countries). It is a well-known fact that while SMEs account for just 2 % of all firms in most parts of the world, in the same time they contribute around 30% to GDP and generate a considerable pool of jobs thus positively impacting the labour market (Južnik Rotar et al., 2019). As a result, institutionalist theories tend to highlight the role of SMEs, which, in spite of their operation in the economic systems dominated by large corporations, still hold an important place in modern economic realities (Marrucci et al., 2022). In dealing with SMEs, an institutionalist approach is therefore focusing on the complexity of institutional settings, in which relations between SMEs and the large multinational corporations are fundamentally determined by the power of the large international companies. Institutional analysis focuses on the impact of institutions on policy outcomes showing that the institutions, such as the small business represented by the SMEs, may be supportive of reform (North, 1990). SMEs are not a small privileged group but needs to tackle the collective action problems typical of any large group (Olson, 1971). This is especially relevant in the current post-pandemic settings when the new institutions and norms and being created.

Another interesting dimension of power, which is frequently overlooked in the economics literature, but which is highly relevant to mega-corporations' theory, concerns the power relations between multinational companies and their subcontracting units, that is, between the mega-corps and their networks of SMEs. Evolutionary institutionalist theories of firms are built on concepts such as corporations, firm power, pricing-setting behaviour, etc. New institutional economics, by contrast, draws upon the transaction-cost theory proposed by Ronald Coase and Oliver Williamson, which provides an explanation of the transitions between alternate mechanisms for coordinating economic activities (markets and hierarchies) and for the rise of institutions (Williamson, 2010; Rindfleisch, 2020; Sent and Kroese, 2022). With new developments in the economic theories of organisation, information, property rights, and transaction costs, there has been an effort to integrate institutionalism with the most recent developments of the main stream economy, referred to as the New Institutional Economics (NIE).

In essence, the institutional economies offer useful insights on how institutional networks mediate corruption-firm productivity nexus. There appears to be a linkage between corruption and firm growth is mediated through institutional networks, with the linkage strengthened in higher levels of financial laxity (Seyoum and Ramirez, 2019; Amin and Soh, 2022). In other words, some research suggests that perceived corruption is positively related to institutional networks, which, in turn, has positive effects on the growth of SMEs. Relatedly, findings concerning the moderating influence of financial laxity on the association between perceived corruption and institutional networks suggest

that SMEs characterized by financial laxity are likely better placed to form favourable relationships with diverse institutional contacts and thus contribute to the economic growth (Koudelková et al., 2015; Deng et al., 2021).

Given the importance of institutional networks in a context in which corruption is widespread, SMEs will be best served by allocating resources towards developing and nurturing those institutional networks (Ezebilo et al., 2019; Adomako et al., 2021). Moreover, economic research can identify the direction of the hypothesized relationships using a longitudinal approach to examine whether entrepreneurs' views on corruption and institutional networks evolve over time, and how these changes affect firm growth (Khan and Krishnan, 2021). The importance of the research on how the SMEs need to be supported stems from the need to enhance the use of tools for spurring enterprise development, as well as to develop effective measures of the effects of governments on market economies (Belitski et al., 2022). As several examples from all around the world demonstrate, governments can assist small and medium-sized enterprises in taking advantage of opportunities for growth and productivity improvements (Geng et al., 2021). This is of the particular importance since all the developing economies achieved their present-day economic and social goals through the use of SMEs. SMEs are capable of contributing to the development, economy, and employment by being present in, and cooperating with, larger firms (Atieh et al., 2022). Within a single industry, or in countries with similar sizes, there may be substantial differences in productivity between large firms and SMEs. SMEs are well placed to track the legislative framework and the channel of loan incentives because of their sophisticated institutional structures. Thus, one can suggest that entrepreneurs operating within a productive institutional framework, offer the mechanism for the transfer of innovations to economic growth (Klofsten et al., 2019). Institutions provide an economic incentive structure and as this structure evolves, it shapes the direction of economic change toward growth, stagnation, or decline. More broadly, economic institutions are important as they help to allocate resources for the best uses - they define who gets profits, revenues, and remaining rights to control (Mayer, 2021). Furthermore, economic institutions within societies, such as property rights structures and the existence of efficient market structures, are particularly important for growth, inclusive institutions, or institutions that maintain markets (Acemoglu and Robinson, 2019).

Overall, it can be seen that the entrepreneurship is influenced by the complex interplay of attitudes, capacities, and desires at a population level embedded within the multifaceted social and economic institutional frameworks which promotes productivity by allocating resources in productive ways (Daniel et al., 2022). Recent practice has shown that the process of innovating on a particular product, service, or a new functional technology is intrinsically linked with intensive R&D activities in companies, between universities, R&D institutions, and other R&D actors, experts, or scientists across all fields (Papanastassiou et al., 2020). Additionally, the recent practice strategies showed that competitiveness in one firm usually requires a lengthy process of research, that, on a local level, it could be achieved by the joint efforts of all universities, research institutions, investors and entrepreneurs, creating and developing some strong networks for reinforcing certain new technologies, and creating some entrepreneurial incubators which could sustain a local innovation process. Productivity growth has stagnated in many places over recent years; a 2018 study by the McKinsey Global Institute (MGI) on seven Organization for Economic Co-operation and Development (OECD) countries found that the average growth rate in productivity fell, from 2.4% annually between 2000 and 2004, to 0.5% annually between 2010 and 2014<sup>1</sup>.

Thence, the role of the innovations and R&D appear to be very important for the development of the SME sector. It is crucial to allocate and to channel the funds and resources required for supporting and fostering them. In order to achieve that, the support of the SME sector might be needed.

### **Support measures for SMEs sector**

Therefore, it appears that the governmental and private-sector support for the sector of SMEs might be a very useful and powerful tool that can be projected into the development of the economy and

<sup>1</sup> McKinsey (2018). Solving the productivity puzzle: the role of demand and the promise of digitization. <https://www.mckinsey.com/~media> (accessed: December 22, 2022)

the overcoming of the post-pandemic crisis (Nguyen, 2020). This support should go in two main channels: i) offering funding, loans, grants, and financial assistance to the eligible (preselected) SMEs that fulfil the desired criteria, and ii) removing the barriers and obstacles (either economic in forms of tax burdens, fines, payments, etc.), as well as administrative (various regulations, norms, licenses, and many other redundant features).

In the post-pandemic era, governments, agencies, and institutions are offering outside support to SMEs in order to save them, promote their growth, spur innovation, and strengthen their capabilities through increased management capacity and improved marketing skills, thus ensuring their greater economic contributions to national economies (Strielkowski et al., 2021). Research findings document that technological integration, innovative funding, and government roles have been positive in supporting the survival of SMEs in a pandemic. The external support received by SMEs to alleviate the effects of COVID-19 pandemic has contributed to strengthening the linkages between both innovation practices and firm productivity, on one hand, and innovation practices and firm survival, on the other (Adam and Alarifi, 2021). Innovation practices of SMEs under any circumstances might positively contribute to enterprise performance. In addition, various innovations efforts undertaken by SMEs for mitigating negative impacts from the COVID-19 pandemic could lead to positive outcomes for those enterprises.

Some studies suggest that the strategic resource support, such as technology integration, efficient financial intermediation, and state incentives, is crucial to increase SMEs chances of survival in the post-pandemic period (with many SMEs went bankrupt and left the market during the pandemic) (Patrucco and Kähkönen, 2021). Micro-enterprises and SMEs could fuel strong recoveries during the COVID-19 pandemic because of their innovation-driven, opportunity-seeking nature, but they are in need of additional support. Given the pandemic, SMEs faced significant difficulties, composed of both financial and non-financial events, which makes it challenging to sustain their viability in this volatile environment. With SMEs already facing significant funding gaps before the pandemic, COVID-19 only made the financing vulnerabilities an existential threat to many businesses (Fan et al., 2021). Evidence of the impact of the COVID-19 pandemic crisis on SMEs, derived from surveys of businesses as well as governmental reports, indicates significant disruptions and concerns among small businesses. Two-thirds of micro-enterprises reported the ongoing COVID-19 pandemic has significantly affected their business operations, with a fifth reporting a risk of closing down for good in three months<sup>2</sup>. The International Labour Organization (ILO) estimates the COVID-19 effect on the world's employment rate at a range from 5.3 million (a low-case scenario) to 24.7 million (a high-case scenario) signalling that business operations would be especially hard for SMEs<sup>3</sup>. Apparently, due to the COVID-19 pandemic, the directors and managers of SMEs all throughout the world might be forced to make the choice of continuing with sustainable operations, or going out of business, like so many other businesses.

## Data analysis

Our data for this paper has been collected by the research team with the help of the online Google Docs survey accompanied by the personalized e-mail message or a phone call from our own contact points (so-called "gatekeepers"). Our selection of the respondents (managers and owners of SMES located in seven Russian regions) and the reliability of local gatekeepers was possible using the extensive graduate student networks in the regions in question. The students have been properly trained to approach the possible respondents and to present them with the purpose of our study as well as the data privacy policies and the non-disclosure agreements that ensured that all SMEs data were kept anonymized thus allowing the respondents to share their company-related information.

<sup>2</sup> UNCTAD (2022). The COVID-19 pandemic impact on micro, small and medium sized enterprises. [https://unctad.org/system/files/official-document/ditcclp2021d3\\_en.pdf](https://unctad.org/system/files/official-document/ditcclp2021d3_en.pdf) (accessed: December 28, 2022)

<sup>3</sup> ILO (2021). COVID-19 and the world of work. [https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms\\_767028.pdf](https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_767028.pdf) (accessed: December 29, 2022)

Table 1

## Descriptive statistics from the own survey of Russian SMEs (2022)

Characteristics		No.	in %
Region	Moscow & Moscow region	56	28
	Saint Petersburg & Leningrad region	16	8
	Nizhny Novgorod & N.N. region	28	14
	Samara & Samara region	58	29
	Yekaterinburg & Sverdlovsk region	20	10
	Orenburg & Orenburg region	18	9
	Other	4	2
Company's age	1-5 years	49	24.5
	6-10 years	54	27
	11-20 years	50	25
	> 20 years	47	23.5
Industry	Trade	43	21.5
	Education & culture	21	10.5
	Information training & consulting	8	4
	Advertising, marketing & media	41	20.5
	Construction & renovation	8	4
	Industry & manufacturing	21	10.5
	Sports, recreation & entertainment	8	4
	Healthcare & medicine	7	3.5
	Services	43	21.5
Company's size	1-15	119	59.5
	16-100	63	31.5
	101-250	18	9
N = 200			

Source: own results

In order to collect our data, the research team employed both the snowball sampling and opportunity randomized sampling. Due to the methodology used for the preparation of the sample, our selection of SMEs does not aspire to be precisely representative but nevertheless might yield some interesting and useful outcomes regarding the impact of the innovations and information and communication technologies on the institutional and economic sustainability of the Russian post-pandemic small and medium enterprises, as well as to highlight the importance of the institutional changes required for ensuring the sustainable development of these enterprises.

The online questionnaire surveys contained questions dealing with various economic characteristics of SMEs: company's age, industry, size, the personal characteristics of owners and managers (e.g. education, experience), company's financial situation, operation on the market, innovations, investments into R&D and ICT, level of digitalization, net profits, etc. Table 1 presented above shows the descriptive statistics of the Russian SMEs from our collected sample.

In spite of some limitations given the data selection methods and the self-reporting nature of the respondents who filled in our surveys, our data still presents an interesting pool of information that

can be drawn from and used for deriving non-trivial results suitable for the academic researchers, stakeholders, and policymakers alike.

### Empirical model

In this part of our paper, we build an empirical model aimed at identifying the factors that affect the digitalization and the socio-economic sustainability of small and medium-sized businesses in the seven Russian regions. Entrepreneurs (managers, directors, and owners of SMEs) were asked questions about how they assess the performance and sustainability of their companies as well as how the investments into own R&D and ICT are carried out in their respective enterprises. The results of the survey allow us to assess the situation on the issue under consideration and its differentiation for SMEs from the different regions of the Russian Federation.

The model presented in this article aims to identify the main drivers of digitalization, introduction of ICT and using own R&D in the small and medium-sized enterprises. Many related studies (Janda et al. 2013; Ehrenberger et al., 2015; Čábelková et al., 2015) have focused on identifying causality as a form of quantitative analysis. This causation is typically described in a form of an econometric model that is expressed in the following form:

$$Y = X'\beta + \varepsilon, \quad (1)$$

where  $Y$  is the dependent variable yielding the enterprise's investments into digitalization and/or R&D as well as the existence of administrative barriers to its sustainable economic development and state support (grants, funding, or preferential loans).  $X$  represents a measure of and the vector of internal factors (factors that are endogenous to the enterprise), (enterprise age, size, demographic and professional characteristics of the manager or owner) as well as the external factors (factors that are exogenous to the enterprise) such as the enterprise strategy, its markets of operation, etc. Finally,  $\varepsilon$  represents an error term. The resulting econometric model can be presented in the form of the following equation:

$$Y_i = \sum_{k=1}^k \beta_k X_k + \sum_{m=1}^m \beta_m Z_m + \sum_{i=1}^l \beta_l W_i + u_c + e_i, \quad (2)$$

where  $X$  represents the exogenous variables of the small model,  $Z$  are the additional objective variables of the intermediate model, and  $W$  are the additional subjective variables added to create the large model.

We used a sample of 200 SMEs from 7 regions of Russia. The sample was collected using the snowball method using our own network of interviewers in two regions of Russia with state support from SMEs.

In our article, we use several econometric methods to evaluate this model. The standard econometric method used is the method of least squares (OLS) (the issue of heteroscedasticity requires the use of robust standard errors in all OLS estimates). Moreover, due to the type of data and the problems that can arise from unknown location specifics, the use of generalized least squares is sometimes justified. In addition, we used the Breusch and Pagan test to test for individual community effects, the Hausman test for individual location effects, and ordinary least squares (OLS) estimates with robust standard errors. We test a one-way error model expressed by a fixed effects (FE) and a random effects (RE) model with an error term with two components: a component that is constant over time and a component that is not correlated over time.

Therefore, the number of innovations by category was naturally chosen as the explanatory dependent variable of competitiveness. The dependent variables for the final models were carefully selected to build a model capable of identifying the key determinants of innovation.

Table 2

## Results of the empirical model of SME determinants

	Digitalization model	Barriers model	State support model
	RSE	OLS	OLS
Director/owner/manager	0.276** (0.061)	0.263** (0.072)	0.261*** (0.061)
Education	0.348** (0.203)	0.341** (0.203)	0.356** (0.202)
Company's size	0.098 (0.042)	0.084 (0.041)	0.094* (0.043)
Industry	0.321* (0.223)	0.306* (0.222)	0.309* (0.223)
Number of employees	0.069** (0.039)	-0.071 (0.039)	-0.069 (0.041)
Company's age	0.052** (0.028)	0.049** (0.028)	0.054** (0.028)
Own R&D	0.296*** (0.052)	0.301*** (0.062)	0.294*** (0.063)
Financial resources	0.280** (0.082)	0.280** (0.082)	0.285** (0.083)
Markets	0.335*** (0.059)	0.331*** (0.051)	0.332*** (0.051)
Sustainable development	0.207*** (0.058)	0.201*** (0.059)	0.201** (0.059)
State support	0.251*** (0.071)	0.261** (0.088)	0.263** (0.082)
Funds	0.310* (0.093)	0.351* (0.092)	0.324* (0.095)
Online and distant work	0.095 (0.092)	0.101 (0.092)	-0.102 (0.801)
ICTs	0.901*** (0.841)	0.932** (0.864)	0.225*** (0.982)
Constant	3.785*** (0.261)	3.782*** (0.268)	3.768*** (0.273)
No. of observations	200		
R-squared	0.56	0.55	0.55

**Note:** \* 15% significant, \*\* 10% significant, \*\*\* 5% significant. RSE stands for «reliable standard errors» and OLS stands for «ordinary least squares».

The numbers in brackets are (robust) standard errors.

Source: Own results

We run three models (digitalization model, barriers model and government support model) using the PSPP statistical software package. It should be noted that each model has the same list of «base» variables, but differs in additional binary variables that encode, for example, the presence of barriers to business, ownership structure, or the influence of external factors such as competition, or the rule of law («digitalization», “barriers” model, “state support” model). The results of all estimations are presented in Table 2 above that presents the results of all three sub-models that constitute parts of our empirical model. It has to be noted that the R-squares are quite high (over 50%) making our model robust. Another important sign are the values and signs of the coefficients, as well as the

significance of the coefficients for predicting their impact on digitalization in SMEs (dependent variable), as well as for the (non-existence) of barriers to the operation of enterprise, or the state support aimed at supporting the enterprise's development.

Our results reveal that larger markets (access to the national and international markets apart from the local market at which the enterprise operates) cause more investments into digitalization and thence better pathways to the sustainable development. This relationship can be viewed from the other side, meaning that digitalization and the implementation of the novel technologies and solutions push small and medium enterprises to the territorial expansion. Innovations and own R&D allow every company to compete internationally, and at the same time, the international market puts more pressure on the innovativeness of the products and services offered.

Moreover, the support of the government by funds, investments, or banking loans, appears to be significant and positive for the SMEs. Similar can be stated about the lack of the administrative barriers for the enterprise operation and functioning.

On the other hand, the company's size (similar to the existence of the possibility of distance work) does not seem to have any significant impact on its digitalization and sustainable economic transformation. This can be probably interpreted by the current situation when the COVID-19 pandemic appears to be wearing out and the majority of the companies are returning to the what is now called the "New Normal".

## Conclusions

All in all, our results confirm that there appear to exist an important role of ICT and innovations in the process of creating the institutional and economic sustainability of the post-pandemic SMEs in the New Normal (both in Russia and all around the world). The COVID-19 pandemic had many adverse effects on SMEs all across the globe but as a popular saying states "what does not kill you makes you stronger", thence the recent crisis has appeared to make the surviving SMEs more resilient and technologically proficient. The pandemic means the institutional change that was marked by the digital surge and the survival of the fittest when many otherwise weak enterprises had to exit the market leaving the space for the strongest ones with the potential to adapt to the new environment and to grow further in the post-COVID world.

In addition, the results stemming from our research (both the theoretical analysis and the empirical model based on the survey conducted with 200 Russian SMEs from 7 regions) allow us to formulate proposals for improving the sustainable development of SMEs in the post-COVID era: First of all, when developing strategies for sustainable development at the level of SMEs as well as at the regional level and for integrating the goals of organizational and regional development, it is advisable to focus on the following priority parameters and indicators: the level of information and communication competencies of managers and owners of SMEs, the level of human capital of the companies, the regularity of assessment financial and social sustainability of the businesses (whether the company has patents, certificates or licenses), awards, the age of machinery and equipment, the level of competition, the usage of Internet communications in business (and the level of that usage), the availability of government support and funding, the frequency of innovations in the enterprises, the level and forms of maintaining digital communications between business and government, or the fact whether the enterprise belongs to any clusters.

Furthermore, it becomes apparent that in order to achieve long-term sustainability in a competitive environment, it is advisable for SMEs to assess and improve the social sustainability of their businesses, focusing on ensuring the safety of jobs, the formation and use of a social development fund in difficult times, attracting personnel to participate in enterprise management and profit distribution, and meeting or exceeding wages of employees of the enterprise being above the average wage for the industry.

Another important implication stemming from our results is that the vector for intensifying the use of Internet technologies by the SMEs is a real catalyst for involvement in the reproduction process, increasing the level of digital maturity, which determines the potential and degree of readiness

for successful digital transformation. There should be the clear orientation towards obtaining state support for the modernization of equipment and training of employees for managers and owners of SMEs, as well as strengthening the interaction between business and government through digital communications.

When it comes to the conclusions and implication that can be derived for the stakeholders (governmental officials, policymakers, local and regional administrations), it appears that the priority support for those SMEs that have a high degree of readiness for change (a high level of digital literacy of managers, a high level of digital maturity of business processes, a low level of resistance to change, or an acceptable level of trust in the authorities).

Promoting the development of skills and digital competencies of managers and owners of small and medium-sized businesses, which are the basis of the socio-economic sustainability of business. The priority digital competencies for SMEs are the following: skills in working in the digital information environment, the use of electronic platforms for organizing and conducting purchases, skills in working in text editors and creating presentations, promoting business on the Internet, and using various digital systems on the daily basis.

It is clear that the forms and tools of interaction between government and business are characterized by regional specifics, their choice is largely due to the peculiarities of regional development. Improving the interaction between authorities and entrepreneurship is associated with the development of an operational information exchange system to eliminate administrative barriers and smooth out regional differences. Overcoming the lack of trust between the small business and the government, encouraging entrepreneurs to overcome this gap, or implementing a strategy to resist change need to be promoted. Strengthening the interaction between government and business should have information and communication support, including such change management tools as informing, involving, as well as stimulating the communication channels. There should be the support at the regional level for the formation of business network organizations on a sectoral or territorial basis, professional communities and cluster initiatives in order to exchange experience and improve the professional competencies of SME participants. Informing about the opportunities and current trends in sustainable development represents a trend towards creating SMEs' own production facilities based on the enterprises that previously specialized exclusively in the sale of finished products. The feasibility of using the strategy of least cost, cost optimization in connection with the fall in incomes of the population and the reduction in the size of the middle class need to be developed. The possibility of consolidation and cooperation with large businesses, time-tested technologies for the survival and sustainability of SMEs need to be promoted.

Small and medium business, both in Russia and worldwide, has all necessary traits for helping to create the institutional and economic sustainability in the post-pandemic era. It is up to the stakeholders and decision-makers how they can be reinforced and nourished using the novel tools and approaches that are at our disposal at these both turbulent and exciting times.

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