FROM CRISIS TO CATALYSIS: THE IMPACT OF THE COVID-19 PANDEMIC-DRIVEN DIGITALIZATION ON ECONOMIC OUTCOMES AND ORGANIZATIONAL TRANSFORMATION

CZU: 614.4:[004.7+005.7+005.591.1](100+478)
DOI: https://doi.org/10.53486/tids2026.20

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Abstract. The COVID-19 pandemic has been an unprecedented macroeconomic shock that strongly affected the economy and population in a negative way, while in order to adjust the economy to reality the covid acted as a global catalyst for the adoption of digital technologies. The paper examines how the forced digitalization affects the economic outcomes, labor productivity, and structural transformations. Drawing on conceptual frameworks such as *organizational resilience* and a comparative analysis of advanced and emerging economies—with a particular focus on the economy of the Republic of Moldova—the study highlights the duality between the emergency adoption of technology and the long-term sustainability of this transition. Although digitalization helped safeguard productivity and ensure resilience during critical moments of the crisis, its sustainability depends on the ability of organizations to move beyond a state of *stretched operating state* and to integrate advanced digital competencies.

Keywords: Covid-19, digitalization and structural transformation, organizational resilience, labor productivity.

Jel Classification: E01, E29, E66, D24

INTRODUCTION

The COVID-19 pandemic, which began in 2020, compelled countries worldwide - at an accelerated pace - to adopt strict social distancing and isolation measures, thereby severely disrupting supply chains and direct human interactions. In this context, most companies, in order to survive and continue their operation activities, were forced to fast-track their digitalization efforts as a matter of urgency. Processes that would normally have required years of organization, strategic planning, and implementation were completed in just a few months. This abrupt transition has sparked significant interest within the academic literature on economics and management. On one hand, digitalization was viewed as a historic opportunity - a *silver lining* - capable to boost long-term productivity; on the other, it introduced substantial risks regarding labor market inequality and the structural sustainability of firms ill-prepared for such a transformation. The objective of this study is to synthesize and analyse

the multidimensional impact of the digitalization triggered by the COVID-19 pandemic. The paper explores the theoretical framework of organizational resilience, issues related to productivity and the labor market, and the realities faced by small and medium-sized enterprises (SMEs), offering insight into how a crisis brought on by the COVID-19 pandemic became a catalyst for the global digital era.

THEORETICAL ASPECTS REGARDING ORGANIZATIONAL ELASTICITY AND COMPANY RESILIENCE

Understanding how companies reacted to the shock caused by the COVID-19 pandemic requires an analysis of their capacity to adapt under heightened pressure. In strategic management, a fundamental concept that has come to the fore is ***organizational resilience.***

Consider the concept of a *stretched operations mode.* In many cases, the rapid implementation of digital technologies during the COVID-19 pandemic occurred without organizations having the necessary time to adjust their internal structure, work processes, and organizational culture to the new reality of the virtual ecosystem.

Research shows that companies entered and remained in a *stretched* operating mode, operating in a true state of exception.

Risk of Failure: This stretching of resources and processes cannot be permanent; case studies indicate that organizations will either succeed in transforming these temporary efforts into a sustainable digital transformation or face long-term organizational failure.

Resilience as a Solution: Organizational resilience defines a firm's ability to expand beyond its normal operating limits during a crisis and subsequently recalibrate its shape to avoid collapse.

Preparedness vs. Response in Digital Resilience. The resilience of firms to recessions or economic shocks can be divided into two essential components: preparation (ex-ante) and response (ex-post). Historical preparedness means the information and communication technologies (ICT) optimize inventory management, improve marketing strategies, and streamline supply chains. Firms that have been digitized for a longer period of time have been much better prepared to absorb the pandemic shock. Shock response: During mobility restrictions, digitalization has provided vital survival mechanisms by facilitating remote work (teleworking), opening up online sales channels (e-commerce), and adopting contactless digital payments. These tools have allowed firms to maintain their operations and even outpace their less technologically advanced competitors.

DYNAMICS OF DIGITALIZATION: ADVANCED ECONOMIES VS. EMERGING REALITIES

The pace and depth of digital transformation have varied significantly depending on the regional economic context and the degree of development of technological infrastructure.

In advanced economies, the crisis triggered a process of *catch-up* by sectors and firms that previously experienced technological lags. The high level of pre-existing digital skills among the population, combined with a solid internet and mobile infrastructure, facilitated a rapid and efficient transition to the new way of doing business.

Table 1. Characteristics and impact of pandemic digitalization

Region / Type of Economy	**Characteristics of Pandemic Digitalization**	**Impact on the Economic Structure**
Advanced Economies (e.g. USA, Western Europe)	Massive acceleration, partial recovery from less digitized entities, intensive use of mobile and internet infrastructure.	Protecting global productivity; permanent changes in labor supply (working from home).
Transition / Emerging Economies (Ex. Hungary, Central Europe)	Widespread use of basic devices, but low adoption rates of advanced digital solutions.	Short-term resilience, but entrepreneurial reluctance to expand digital investments post-crisis.

Source: *Elaborated by author based on IMF staff discussion note "Digitalization during the COVID-19 Crisis", March 2023*

MACROECONOMIC IMPACT: PRODUCTIVITY, LABOR MARKET AND STRUCTURAL CHANGES

Macroeconomic analyses published by institutions such as the International Monetary Fund (IMF) provide a clear perspective on how digitalization influenced aggregate indicators during and immediately after the COVID-19 crisis.

Productivity and hours worked

One of the most important empirical results shows that a high level of digital intensity acted as a real *shield* for economies. Firms and sectors that were intensively digitalized experienced much lower productivity losses and much greater stability in hours worked compared to traditional sectors. Digitalization limited the economic contraction by keeping trade and financial flows active at times when physical interaction was strictly prohibited.

In the Republic of Moldova, the structural asymmetry between digital transformation and labor productivity across economic sectors is one of the most prominent macroeconomic features. The correlation between the level of technology adoption and the value added generated per employee reveals a significant gap between technologically advanced sectors and traditional sectors.

Figure 1 highlights a divergent trend in productivity at the sectoral level. On one hand, there is a sustained upward trend in fields such as *Information and communication* or *Financial intermediation and insurance,* while the *Trade sector* records a more moderate growth. On the other hand, sectors such as *Construction*, *Water supply*, and *Agriculture* generally exhibit stagnation or only a slight increase in productivity.

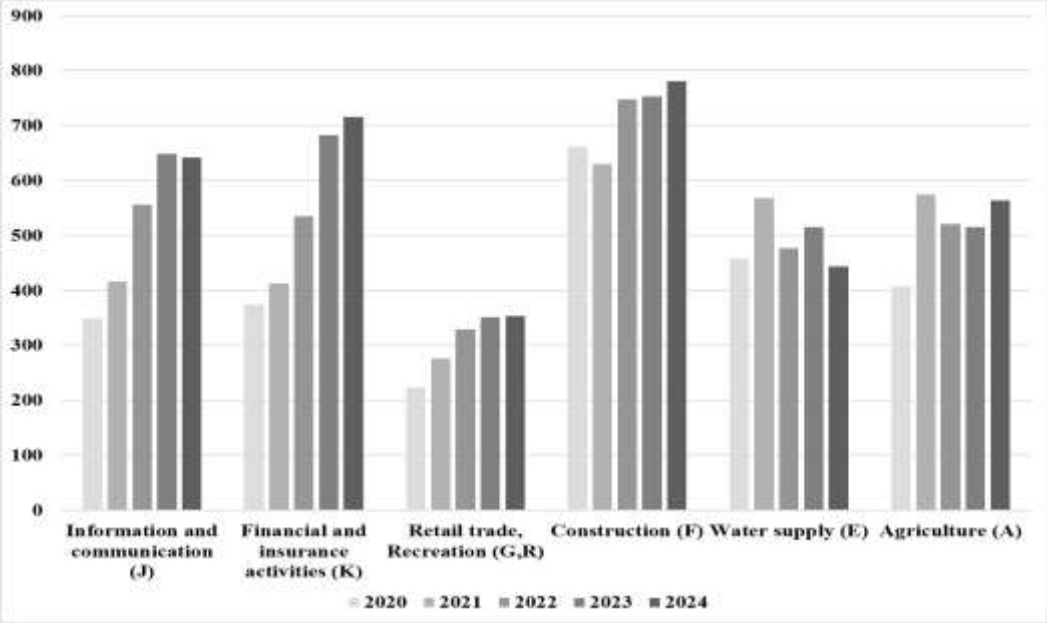


Figure 1. Index of productivity by the sectors in Republic of Moldova

Source: *Elaborated by author based on National Bureau of Statistics data*

Effects on the Labor Market, polarization and structural demand

In the labor market, the impact has been combined, giving rise to both, opportunities, but also major challenges:

Protection of workers in the digital environment. Employees in digital-related roles were far better protected against the risk of unemployment or income loss, as they were able to perform their work remotely.

Absence of a structural shift in demand. Despite initial fears that the pandemic might permanently eliminate non-digital jobs, data indicate that less digitized sectors experienced a strong rebound once restrictions were lifted - even though they had initially suffered sharper declines. Consequently, the structure of labor demand does not appear to have undergone a radical, long-term structural transformation.

Although digital processes served as a buffer during the acute phase of the health crisis, most traditional sectors experienced severe contractions; subsequently, however, they benefited from a strong base effect and pent-up demand during the recovery period. Figure 2 illustrates the asymmetry between the contraction in 2020 and the subsequent recovery across various sectors of the economy of the Republic of Moldova.

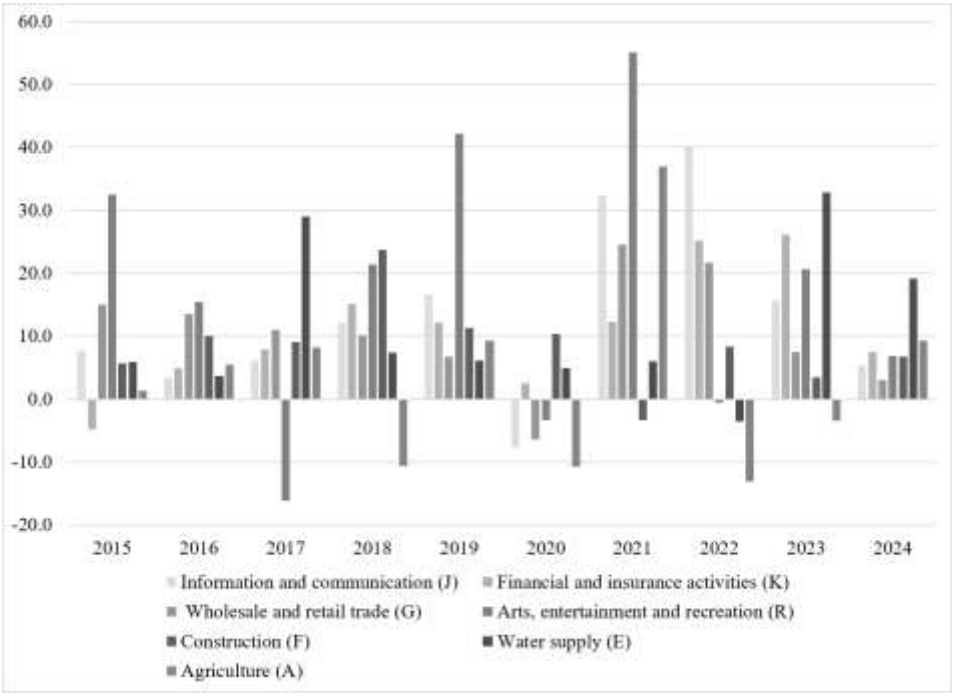


Figure 2. Evolution of the sectors in Republic of Moldova, (y-o-y, %)

Source: *Elaborated by author based on National Bureau of Statistics data*

Structural changes in labor supply

Unlike the demand for labor, shifts in the supply of labor are of a much more permanent nature. This dynamic is directly driven by a massive and irreversible increase in the preference for working from home. The flexibility gained during the pandemic has redefined employee expectations and compensation structures, ***transforming remote work from a situational perk into a structural component of the modern labor market.***

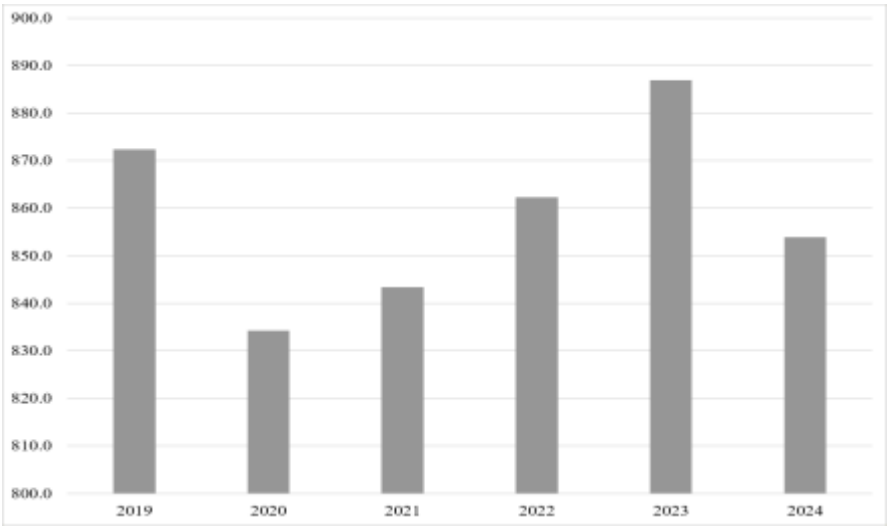


Figure 3. Dynamics of the employed population, by length of the working week, pers.

Source: *Elaborated by author based on National Bureau of Statistics data*

MICROECONOMIC AND ENTREPRENEURIAL DIMENSION: THE CHALLENGES OF SMEs

While large corporations have the capital and structures to manage technological transformations, Small and Medium Enterprises (SMEs) have faced a distinct set of barriers.

The Skills Gap and Adoption of Basic Solutions. Digitalization has been and continues to be a major challenge for SMEs, as they often suffer from a shortage of skills, qualifications and financial resources for innovation. According to data presented by the Global Entrepreneurship Monitor, for some countries, including those in Central and Eastern Europe, this paradox of widespread but superficial use is perfectly illustrated. Although most SMEs use basic digital devices, the adoption of advanced digital solutions (such as complex ERP systems, big data analytics or automation) remains extremely low. Post-pandemic reluctance: Although the crisis has accelerated digitalization efforts to some extent (for example, for online sales or electronic payments), a significant proportion of entrepreneurs said that they do not foresee using additional digital solutions in the near future.

Heterogeneity of Entrepreneurial Motivations. According to literature, there is no consistent or homogeneous correlation between entrepreneurial motivations and digitalization efforts among SMEs. The level of digitalization is fragmented and diverse between regions, countries, sectors of activities, cultures etc. Some firms have adopted technology strictly as a temporary survival strategy, while others have integrated it as a component of long-term strategic development. This lack of homogeneity indicates that the mere shock of a crisis is not sufficient to transform deep-seated entrepreneurial mindsets, in the absence of dedicated support measures.

SUSTAINABLE DIGITALIZATION

A common feature across both advanced and developing economies is that the long-term success of crisis-driven digitalization depends, fundamentally, on how organizations evolve from an *exceptional state* toward a *new normal*. Companies cannot operate indefinitely in emergency mode; to turn the digitalization forced by the crisis into a sustainable digital transformation, managers and decision-makers must act along three strategic fronts: cultural and structural alignment - ensuring that technology adopted in haste is supported by reorganizing internal workflows and adapting organizational culture, thereby reducing the technological stress experienced by employees; investment in advanced technological skills - moving beyond the basic use of the internet or video communication platforms toward the integration of sophisticated software solutions; and the reduction of digital inequalities - by, at least, supporting traditional economic sectors and workers who do not use digital tools, in order to prevent the widening of the economic and social gaps that were brought to the fore during the COVID-19 pandemic.

CONCLUSIONS

The COVID-19 pandemic acted as a forced systemic catalyst, demonstrating that digital technologies are not merely a tool for cost reduction, but an essential infrastructure for economic and organizational resilience.

Digitalization has saved aggregate productivity and ensured the continuity of labor markets in advanced economies. However, at the microeconomic level, the transformation remains fragile, especially among SMEs that tend to return to old operating models once the pressure of the crisis has subsided.

Implications for Public Policy:

- Design and strengthen the system of statistical indicators specific to the digital transformation of economic sectors, with the aim of assessing sectoral dynamics and underpinning evidence-based support public policies.
- Incentivizing skills: Governments and economic policymakers need to implement financial and fiscal stimulus programs aimed at improving the digital skills of entrepreneurs and employees.
- Implementation support: Direct support for SMEs is needed to implement complex technological solutions, not just basic ones, thus ensuring long-term competitiveness in the post-pandemic economy.
- The final transition from crisis to catalysis will only be complete when the organizational resilience manifested in emergency mode is replaced by conscious, robust, and sustainable digital strategies.

ACKNOWLEDGEMENTS: Ion Pârțachi, Simion Mija and Claudiu Herțeliu are partially supported by a project "Analysis of the impact of Covid-19 on the main demographic indicators in Romania and the Republic of Moldova by using econometric modeling" code PN-IV-P8-8.3-ROMD-2023-0208 funded by the Romanian Ministry of Research, Innovation and Digitalization (MCID) through UEFISCDI.

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