

National and international economic uncertainty and measures to be taken for sustainable development and digital transformation (Albania case)

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Abstract. Objective: Economic uncertainty, characterized by unpredictable future environments and heightened risk, poses significant challenges to development. The COVID-19 pandemic, a global disruptive event, has exacerbated these uncertainties, particularly in economic and social spheres. It catalyzed profound changes, especially in the technology and digitization of public services, resulting in increased efficiency and productivity. Albania, having been slow to adopt digital transformation, experienced significant shifts in this area. However, there remains uncertainty surrounding the use of these online services, particularly concerning personal data management and security. **Method:** The study examines the relationship between digitization and its economic impacts, emphasizing the pivotal role of the state in regulating and influencing the socio-economic landscape. Through policy analysis and case studies on public service digitization in Albania, the research explores how governmental actions can either mitigate or exacerbate economic uncertainty. **Results:** The findings indicate that while digitization has contributed to increased economic efficiency, its full potential in promoting sustainable economic development in Albania remains hindered by ongoing challenges. These include gaps in infrastructure, public trust in digital systems, and the need for robust data security measures. The role of the state is crucial in fostering an environment conducive to economic growth, particularly in uncertain times, by addressing these gaps through targeted policies. **Originality:** This study contributes to discussions on strengthening international cooperation to overcome obstacles in achieving sustainable development and digital transformation. It underscores the importance of multilateral alliances and well-coordinated strategies for addressing global challenges, offering insights into how Albania can align its development goals with broader international trends in digitization and economic governance.

Keywords: economic, development, digitization, impact, public services

JEL classification: E32, E60, Q01, O33, D80

1. Introduction

Economic uncertainty poses a significant challenge for small, developing countries like Albania, where external shocks can have far-reaching and long-lasting impacts across all sectors of the economy. The ripple effects of such uncertainty can disrupt key industries, deepen socio-economic vulnerabilities, and slow progress toward sustainable development. This study analyzes the implications of economic uncertainty in Albania, emphasizing the need for proactive measures and targeted economic policies to mitigate the adverse effects of unforeseen global and regional crises. One of the most profound events that highlighted Albania's vulnerability was the COVID-19 pandemic, which exposed weaknesses in many sectors of the economy, particularly tourism and trade. The pandemic hit Albania especially hard, arriving just three months after the country was devastated by a 6.5 magnitude

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earthquake in November 2019. This earthquake claimed the lives of 51 people, injured over 3,000, and left 2,430 buildings damaged. Thousands of families were displaced, and as of 2024, many remain without adequate housing. The dual impact of the earthquake and the pandemic placed enormous strain on Albania's recovery capacity, revealing the pressing need for improved disaster preparedness and economic resilience, specifically mentioning here the damage from the earthquake, damages and losses reach a value of 985.07 million euro, we have the recovery of losses, which reach a value of 1076.15 million euro. Further compounding these challenges is the Russia-Ukraine war, which has introduced additional economic instability, particularly in energy markets and food supplies. Although geographically distant, the war has led to supply chain disruptions, increased energy prices, and inflationary pressures in Albania, exacerbating the country's post-pandemic recovery struggles.

This conflict has underscored the interconnectedness of global economies and the susceptibility of small nations like Albania to external shocks beyond their control. Amidst these uncertainties, digital transformation has become an essential instrument for economic resilience. The pandemic expedited the integration of digital technology across several industries, including e-commerce, digital banking, public services, and education. Digital transformation provides new opportunities for Albania to diversify its economy, reduce vulnerabilities, and respond more effectively to crises. For instance, digital platforms have enabled businesses to continue operating during lockdowns, while innovations in remote working and online education have ensured continuity in services. Furthermore, digitalization in governance can improve policy responsiveness, facilitating superior crisis management and more effective resource allocation. This paper will underline the impact of these crises on Albania's key economic sectors particularly tourism, agriculture, and energy and the role that digital transformation can play in mitigating future risks.

2. Literature review

Economic uncertainty, often driven by external shocks, has been a widely researched topic in the literature on development economics. According to Knight (1921), economic uncertainty can be categorized into two types: risk, where outcomes are unknown but probabilities can be estimated, and true uncertainty, where no such probabilities are available. Small, developing economies like Albania are particularly vulnerable to true uncertainty due to their limited economic diversification and reliance on specific sectors such as agriculture and tourism (Krugman, 1991). Research highlights that developing countries are disproportionately affected by external crises, which can lead to prolonged economic recessions and exacerbate existing vulnerabilities (Stiglitz, 2002). With significant direct and indirect contributions to employment and infrastructure investment, tourism is a key component of the Albanian economy (Lazimi, 2021). These results highlight the necessity of measures that improve economic adaptation and resilience.

Natural catastrophes like earthquakes and floods, are another major source of uncertainty for small economies. Albala-Bertrand (1993) and Cavallo et al. (2013) assert that disasters have long-term impacts on the economies of developing nations due to limited infrastructure and financial buffers. Albania's experience with the 2019 earthquake reflects the broader findings of these studies, which show that the destruction of physical assets, homes, and public infrastructure leads to deep economic and social scars (UNDP, 2020). A significant body of literature examines disaster recovery in nations with low incomes, emphasizing the need for coordinated international aid and domestic preparedness measures (Rodríguez-Oreggia et al., 2013). An estimated 1.1% of GDP was lost and 6.4% of GDP was damaged as a result of the earthquake, according to the Albanian Government Report. The fact that the damages total 26.4% of gross fixed capital formation shows how unlikely it is that Albania will be able to complete restructuring in the near to medium term. According to the research, the tourist and real estate industries suffered the largest losses, but there were also notable setbacks in the fields of education, health, public infrastructure, manufacturing and commerce, and agriculture (Banushi 2020).

The COVID-19 pandemic caused unprecedented global economic disruption, and its impact on small economies has been the subject of extensive study. According to Baldwin and Weder di Mauro (2020), the pandemic exposed weaknesses in global supply chains, exacerbating existing vulnerabilities in small economies that rely heavily on international trade and tourism. The World Bank (2021a; 2021b) notes that in Albania, the recovery remains fragile. Early warning signals from the labor market require

close policy focus. Women and young people have been disproportionately affected by job losses throughout the recession and its aftermath, which may make it more difficult to raise the region's low labor force participation rate. Literature on the economic effects of pandemics, such as the research by Barro, Ursúa, and Weng (2020), indicates that pandemics tend to have a more severe and long-lasting impact on developing nations, where health infrastructure and social safety nets are weaker. This aligns with Albania's struggle to financially recover from the combined effects of the pandemic and the 2019 earthquake. Furthermore, this review will explore how governments in developing nations can better prepare for such pandemics in the future.

The literature on the economic repercussions of geopolitical conflicts such as the Russia-Ukraine war is evolving rapidly. Studies by the International Monetary Fund (IMF, 2022) and World Trade Organization (WTO, 2022) suggest that worldwide energy supplies have been affected by the war, leading to inflationary pressures, particularly in energy-dependent countries like Albania. The European Central Bank (2023) highlights the war's role in destabilizing global food markets, further intensifying inflation in import-dependent countries. Literature in this area emphasizes the vulnerability of small economies that rely on energy imports and have limited domestic production capacities. Given Russia's longstanding geopolitical, economic, religious, and ideological ties to former Yugoslavia and Albania, it is hard to escape its involvement in energy discussions, particularly in connection to BP (Terihati, 2024).

Digital transformation's role in mitigating economic uncertainty has received a lot of attention lately, particularly in response to the COVID-19 pandemic. Studies by Brynjolfsson and McAfee (2014) argue that digital transformation offers new avenues for economic resilience, particularly in times of crisis. According to Khan et al. (2015), pricing, dependability, speed, and ease of use are some of the factors that affect the adoption and use of digital technology in any given location. These factors determine the degree of digitization, which has been shown to have an impact on lowering unemployment, enhancing citizens' quality of life, and increasing their access to public services. In Albania, digital transformation accelerated during the pandemic, with businesses and public institutions increasingly adopting digital platforms to maintain operations. Among other things, COVID-19 has changed how businesses operate. Considering the changes it has caused to businesses across all industries, COVID-19 has been the primary force behind businesses' digital transformation, which is a process that businesses must undergo in order to remain competitive and relevant in the market (Klaudia & Harremi, 2022). Additionally, digital governance can lead to more effective crisis response, enhancing transparency and enabling better resource allocation during times of uncertainty (Mergel et al., 2020). Although there is a lot of data demonstrating the advantages of digital transformation, the literature also points out that the digital divide remains a significant barrier to fully realizing these benefits in developing countries like Albania (World Bank, 2021a; 2021b). This review will explore both the opportunities and challenges of digital transformation in Albania's journey toward economic resilience.

Case studies

Albania, after the disaster of the earthquake, like all the countries of the world, has been affected by another and even more serious disaster called COVID-19. Albania faced some significant difficulties in various sectors. The Bank of Albania estimates that around 75% of the estimated adverse effects of the COVID-19 outbreak during 2020 was concentrated in the sectors of Accommodation, Services and Manufacturing Industry. This strike is estimated to have mainly affected employment in the "Accommodation", "Manufacturing Industry" and "Other Services" activities. According to the size of the enterprises, the drop in employment is estimated to be distributed respectively, 39.6% in enterprises with over 50 employees, 39.5% in enterprises with 1-9 employees and 21% in small enterprises. Exports suffered the strongest blow, which fell by 40.6%. Meanwhile, the components of domestic demand, private consumption and investments have decreased respectively by 4.5% and 5.8% in annual terms (Institute of Statistics of Albania, 2020).

The speed and severity of the impact of the austerity measures taken negatively affected the confidence of consumers and businesses, increasing their uncertainty about the future. The economic sentiment indicator touched the lowest historical level throughout the year's second quarter. The Bank of Albania points out that consumers became more pessimistic about the future, mainly influenced by

negative expectations for employment, while increased caution in spending was reflected in their declining estimates for large purchases. According to INSTAT data in 2020, the final consumption of the population decreased by -2.34%, the lowest historical level in the data after the 1990s. The sector where the impact of the pandemic was estimated to be the lowest was agriculture, since the activity of farmers was not much affected by the austerity measures. The Bank of Albania has also carried out an assessment of the effect of the impact on employment, which is estimated at around -3% in average annual terms. Here are some of the affected sectors:

Economic impact

Economic recession: The pandemic caused a significant downturn in Albania's economy, leading to a recession. Key sectors like tourism, which is a major contributor to the economy, were severely hit due to travel restrictions and decreased global mobility. Albania's GDP contracted by approximately 3.31% in 2020 due to the pandemic. The recession was primarily driven by a sharp decline in key economic sectors such as tourism, services, and trade. At current prices, the GDP of the Albanian economy was projected to be 1,644,077 million ALL (13.3 billion euros) in 2020. In addition to being a valuable metric for comparing average living standards and economic well-being, GDP per capita is a significant measure of economic performance. GDP per capita was 579 thousand ALL (€4,681) in 2020.

Unemployment: Many businesses, particularly in the service and tourism industries, were forced to shut down or reduce operations, leading to job losses and increased unemployment rates.

Small and Medium Enterprises (SMEs): SMEs, which serve as Albania's economic foundation, faced severe financial strain, with many struggling to survive due to decreased consumer spending and disrupted supply chains. A significant portion of the population faced income reductions due to layoffs, reduced working hours, and pay cuts. Many people in Albania lack social safety nets as a result of the particularly severe impact on the informal sector, which makes up a sizable portion of the country's economy. (Leka, 2020).

Tourism sector: Tourism, a critical component of Albania's economy, suffered immensely. The sector experienced a drastic drop in visitors, which led to substantial revenue losses. In 2019, tourism contributed about 21.2% to the GDP, and the drastic reduction in international travel and local tourism heavily impacted this sector.

Health sector strain

Healthcare system overload: The health system was overwhelmed with COVID-19 cases, leading to resource shortages, including medical supplies, hospital beds, and healthcare personnel.

Mental health: Because of social isolation, economic instability, and health concerns, the epidemic generated widespread stress, worry, and despair. The increasing demand was difficult for mental health services to accommodate.

Social challenges

Education disruptions: Schools and universities were closed, and while online learning was implemented, it was not accessible to all students, exacerbating educational inequalities.

Poverty and inequality: The economic downturn pushed more people into misery and widened the distance between the wealthy and the impoverished, with marginalized communities suffering the most.

Infrastructure and logistics

Supply chain disruptions: Affected the availability of goods and services, impacting both businesses and consumers.

Digital infrastructure: The pandemic highlighted the need for better digital infrastructure to support remote work, online education, and digital services, areas where Albania needed significant improvements. This transformation is likely to have lasting effects on the economy, potentially leading to increased efficiency and new growth opportunities.

In summary, the epidemic of COVID-19 led to an important economic recession in Albania, characterized by a GDP contraction, increased unemployment, and substantial impacts on critical sectors like tourism. The government's response involved various fiscal measures to support the

economy, but the crisis also highlighted structural challenges that need to be addressed for sustainable long-term growth. Here are some key areas where digitalization played a crucial role:

1. Government services. E-Albania portal: The Albanian government expanded its e-Albania platform, which provided online access to various public services. This portal enabled citizens to perform administrative tasks, such as obtaining documents, registering businesses, and accessing health services, without needing to visit government offices in person.

2. Education. Online Learning: With schools closed in order to stop the infection from spreading, the Ministry of Education shifted to online learning. Platforms like Microsoft Teams and Google Classroom were widely used to conduct virtual classes, share educational materials, and communicate between teachers and students. During 2020 and 2021, the pandemic has exerted considerable pressure on the functioning of the educational system. To adjust to the new situation, the model was implemented in the distance learning process. Such a process is inevitably accompanied by difficulties in ensuring access to education, emphasizing also the need for intensifying the use of digital tools in this system. In the pre-university system, a variety of digital tools improved communication with students and students and ensured more accountability for a large number of students and teachers. Online services related to education are on the rise. Information Management System Pre-university enabled the electronic register of grades, absences, and student activation in the classroom restoring to a digital platform communication between the trinomial "teacher-parent-student". The system creates the digital, electronic register of grades, absences, and activation of students in class, while parents get to know children's progress through an application on their cell phone. This application is under implementation at the end of 2021 it is filled with 479,115 individual data belonging to the categories: employees (34,225); administrators (6,094); students (358,776); teachers (31,394); classes created (20,635); classes with implemented curriculum (17,061); class with open register (10,930). For the first time in 2021, the new student registration system, available through e-Albania, was introduced for first-grade students in schools across the main cities of counties, as well as for tenth-grade students throughout the country. Parents and legal guardians applied directly on the portal, without the need to be presented at different counters. Through this system, they were able to track online their application and the final decision of acceptance or rejection. For primary education there were a total of 10,569 applications submitted, out of which 8,183 students were accepted and registered in 183 schools, while 2,386 applications were rejected. For upper secondary education, there were 13,366 applications, with 12,088 students admitted and registered in 255 schools, and 1,278 applications rejected. In addition to the digitized pre-university system, The Ministry of Education, Sports, and Youth has set up The System of State Examinations for Professions e-Fixed, which is also accessible through e-Albania. This system provides an automated complete control procedure, distribution of candidates in the relevant premises of testing, as well as the development of the exam according to specific conditions. The system generates the thesis, and enables verification of exam results online, while the online history of the results guarantees complete transparency to the candidate process. This approach enhances reliability, shortens information access time, and ensures the integrity of the testing procedure, preventing any mismanagement of these processes. The system interface also allows for confirmation of the candidate's online payment prior to the test. Exam results are automatically generated and printed by the system, eliminating manual errors. Authorized institutions can directly access and download the results online from the system.

3. Health services. Telemedicine: Health services adapted by offering telemedicine options, permitting patients to consult with healthcare professionals via video calls or phone, thus minimizing the need for physical visits to hospitals and clinics. Online systems for COVID-19 testing registrations and results were also implemented. Despite the uncertainties surrounding the pandemic, a series of measures were implemented from the beginning, which significantly influenced the management and progression of the situation. In addition to rapid decision-making at the beginning of the crisis and planning the healthcare structures (including hospitals) dedicated to the management of the pandemic, successful implementation of digital health tools played a key role. This approach, which emphasized the role of the family doctors, had already begun prior to the pandemic. Despite the great pressure the pandemic placed on the healthcare system, it has significantly accelerated the digitization of this sector. Digital tools often play an important part in curbing corruption by enhancing various types of interactions between citizens and health authorities, serving as an essential mechanism for ensuring

greater accountability. The year 2021 marked significant progress in the healthcare system, even as it faced increasing challenges brought on by the COVID-19 outbreak. Together with the implementation of telemedicine methods (online consultations) and utilizing existing services on the e-Albania portal, health institutions effectively managed the COVID-19 crisis, ensuring the provision of health care and the reimbursement of medical prescriptions for patients. Digital Assurance of Care Services Health and Social Protection guarantees:

- Real-time monitoring of delivery services to citizens;
- Quality assurance in service provision;
- Improving access to the services health and social protection;
- Creation of an electronic database in processing the information necessary for decision-making.

Five key services are offered to citizens through the e-Albania government portal:- Contact / Registration with the Family Doctor(December 2020);- Health card with electronic seal (Feb2016);- Scheduling and Rescheduling of the date of receipt specialized medical service, through electronic referral system (January 2020);- COVID-19 Vaccination Certificate, as part integral of the system of certificates EU vaccination card, equipped with a QR code and electronic signature (January 2021);- Certificate of Recovery from COVID-19 (Dec2021). During 2021, over 3.9 million prescriptions were given electronically for over 410,000 patients, for diseases chronic and acute, issued by 1,500 doctors in the whole country, facilitating the process as a whole and increasing transparency. These prescriptions are signed electronically by doctors and pharmacists, a procedure subject to reporting, supervision and online transparency, guaranteeing the follow-up treatment protocols and reducing the possibility for abuse. The pharmacist executes the prescription alone after receiving the generated code validation from the system, during the visit by the family doctor. According to INSTAT, in Tirana, where vast majority of the nation's citizens (33%) resides, and where one-fifth of the professional corps of family doctors exercises their duties, about 27% of electronic prescriptions are issued.

4. Business and economy. E-commerce: There was a significant boost in e-commerce as businesses moved online to continue operations amid lockdowns. Many local businesses established online stores and offered delivery services to cater to customers staying at home. Digital payments: The use of these methods has increased, reducing the need for cash transactions and promoting contactless payments through mobile banking applications and online platforms.

5. Financial sector. During 2021, the financial sector has witnessed significant progress in digitization and the availability of online financial services introducing and implementing new mechanisms for to prevent informality, corruption and illegal financial flows, as well as to increase the overall resilience of the industry amid the COVID-19 pandemic and other factors that contribute to macro-economic stability country. Tax e-services Digitization in the tax sector has guaranteed service management success by completely eliminating the need for delivery of forms with requests in the information office and the need to interact personally with tax authorities. Since 2015, the administration tax has undergone a transformation in computerization of its systems, starting with implementation of the new information technology system C@TS. This system brought a revolution in tax registration for taxpayers. The system allows them to control fiscal declarations, modify and correct, to file tax documents on the road electronically, as well as submit all tax declarations including annual financial statements online. Such a transformation has also been promoted by the implementation of the services of the e-Albania government portal in October 2017, which initially offered only 9 services online. Services used during this period were primarily those related to the most frequent requests, such as certifications for taxpayers and citizen fiscalisation. Fiscalization is the most profound reform in the billing and monitoring system. The new invoicing system aims to digitize invoicing and monitoring, increasing transparency and accountability. The system has been in effect since the end of 2019, with the approval of the legislation and by-laws, as well as with the creation of the necessary supporting infrastructure. On January 1, 2021, the first phase of its implementation began, which focuses on cashless transactions between taxpayers (businesses) and public entities (B2G), by issuing fiscalized invoices. On July 1, 2021, the second phase for cashless transactions between businesses (B2B) began, while on September 1, 2021, the last stage for transactions between taxpayers or businesses and consumers (B2C) started. The system specifically aims to identify potential abusers and avoid inspections possible from the tax authorities that can hinder the regular operation of any business. Fiscalization enables supported controls only at possible risk and minimizes direct contact between the

tax administration and the taxpayer. It eliminates random or repetitive checks, focusing instead on taxpayers, who may be underreporting. Through this system and of other systems used by the administration the goal is to enable remote control by recording, comparing, and analyzing data from various sources.

6. Work and communication. Remote work: Many companies implemented remote work rules, enabling staff working from home to communicate and collaborate with platforms like Zoom, Microsoft Teams, and Slack. Digital communication: social media and messaging apps became even more critical for personal communication and for organizations to disseminate information quickly and effectively.

7. Public awareness and information. Online Information Campaigns: The government and health authorities used digital channels, including social media, websites, and SMS services, to provide timely updates on the pandemic, safety guidelines, and vaccination information. The Russia - Ukraine war had significant impacts both globally and specifically in Albania. Here's an overview (Monitor Magazine, 2022):

Global impact

- a) Economic consequences:
 - Energy prices: The conflict has disrupted global energy markets, causing spikes in oil and gas prices. Europe, heavily reliant on Russian energy, has faced significant challenges in securing alternative supplies.
 - Food security: Ukraine and Russia are major exporters of grains and fertilizers. The war has disrupted supply chains, leading to increased food prices and concerns about food security, especially in developing countries.
- b) Geopolitical shifts:
 - NATO expansion: In response to the conflict, NATO has strengthened its presence in Eastern Europe. Sweden and Finland have also sought NATO membership, shifting the balance of power in the region.
 - Sanctions: Western countries have imposed severe sanctions on Russia, targeting its economy and political elite. These sanctions have also affected global businesses and economies connected to Russia.
- c) Humanitarian crisis:
 - Refugee flows: Millions of Ukrainians have fled their homes, seeking refuge in neighboring countries and beyond. This has created one of the worst refugee crises in modern times, straining resources and support systems in host countries.
 - Casualties and destruction: The war has resulted in significant loss of life and destruction of infrastructure in Ukraine, leading to a dire humanitarian situation.

Impact on Albania

- a) Economic effects:
 - Inflation: Albania, like many other countries, has experienced inflationary pressures due to rising energy and food prices linked to the war. In Albania, this crisis has mainly influenced the increase in the price of cereals and oil.
 - Trade disruptions: The conflict has affected trade routes and economic relationships, causing disruptions in the supply of certain goods.
- b) Energy security:
 - Diversification efforts: Albania has had to explore alternative energy sources and strategies to mitigate its dependence on Russian energy. This has included looking into renewable energy projects and regional cooperation.
- c) Political and security considerations:
 - NATO Member: As a NATO member, Albania has supported the alliance's stance on the conflict and participated in joint efforts to strengthen regional security.
 - Diplomatic actions: Albania has aligned with EU and NATO policies, including condemning Russian aggression and supporting sanctions against Russia.
- d) Humanitarian response:

- Refugee support: Albania has offered support to Ukrainian refugees, providing shelter and assistance to those fleeing the conflict.
- e) Broader implications
- Global supply chains: The disruption of supply chains has emphasized the need for countries to diversify their sources and reduce dependency on any single region, particularly in critical sectors like energy and agriculture.
 - Strengthening alliances: The war has reinforced alliances and prompted countries to reevaluate their defense and foreign policies, leading to increased defense spending and stronger regional cooperation.
 - International relations: The conflict has strained relations between Russia and many Western countries, potentially leading to a long-term shift in international relations and global power dynamics.

In summary, the Russia-Ukraine war has had wide-reaching effects, influencing global economics, politics, and humanitarian conditions. Albania, while not directly involved, has experienced economic and security impacts and has participated in international efforts to respond to the crisis.

To address the political, economic, and humanitarian issues brought on by the conflict between Russia and Ukraine, Albania has implemented a variety of actions. The Albanian government and institutions have made the following significant actions:

1) Economic measures

a) Energy diversification:

- Renewable energy investments: To improve energy security and lessen reliance on imported energy, Albania has increased its investments in renewable energy sources including wind, solar, and hydropower.
- Regional cooperation: Strengthening ties with neighboring countries to create a more resilient regional energy grid and secure alternative energy supplies.

b) Inflation mitigation:

- Price controls and subsidies: Implementing temporary price controls on essential goods and offering subsidies to vulnerable populations to ease the burden of rising costs.
- Support for farmers: Providing financial assistance and resources to local farmers to increase domestic food production and reduce reliance on imports affected by the war.

c) Trade adjustments:

- Diversifying trade partners: Seeking new trade partners and markets to replace disrupted trade routes and dependencies on goods from Russia and Ukraine.
- Enhancing local production: Encouraging and supporting local businesses to boost production of goods that have become scarce or expensive due to the conflict.

2) Political and security measures

a) NATO collaboration:

- Enhanced military cooperation: Increasing participation in NATO exercises and initiatives to bolster national and regional security.
- Defense spending: Allocating more funds to defense and security to ensure readiness and resilience against potential threats.

b) Diplomatic actions:

- Sanctions and condemnations: Aligning with EU and NATO sanctions against Russia and publicly condemning the invasion of Ukraine.
- Support for Ukraine: Providing political support and solidarity with Ukraine through diplomatic channels and international forums.

3) Humanitarian measures

a) Refugee assistance:

- Shelter and aid: Offering shelter, food, medical care, and other forms of assistance to Ukrainian refugees arriving in Albania.
- Integration programs: Implementing programs to help refugees integrate into Albanian society, including language courses, job placement services, and educational opportunities.

- b) Humanitarian aid:
 - Sending aid to Ukraine: Contributing financial and material aid to support humanitarian efforts in Ukraine.
 - Coordination with NGOs: Working with non-governmental organizations and international partners to deliver aid efficiently and effectively.
- 4) Public communication and support
 - a) Information campaigns:
 - Public awareness: Running campaigns to inform the public about the economic and humanitarian impacts of the war and the measures being taken to address them.
 - Community engagement: Engaging with community leaders and organizations to ensure coordinated and effective responses to local needs.
 - b) Economic relief packages:
 - Support for businesses: Providing financial relief and incentives to businesses affected by supply chain disruptions and increased costs.
 - Household support: Offering direct financial assistance to households facing economic hardships due to inflation and other war-related economic impacts.

These measures reflect Albania's efforts to mitigate the multifaceted challenges posed by the Russia-Ukraine war, emphasizing economic stability, security cooperation, and humanitarian support.

3. Methodology and data

This research uses a combination of approaches to investigate the impact of various disasters on Albania's economy and society, and the role of digitalization as a key solution to enhance resilience and recovery. The paper focuses on major disasters that have affected Albania, including natural disasters (such as earthquakes and floods), geopolitical upheavals (like the Russia-Ukraine war) and worldwide health catastrophes (like the COVID-19 pandemic). The analysis integrates quantitative & qualitative data collected through a structured questionnaire on digitalization and a review of secondary sources for disaster-related information.

Data sources:

- Earthquake (2019): Data on the magnitude of the earthquake, number of casualties, and economic losses are drawn from government reports (e.g., Albanian Institute of Statistics, Ministry of Reconstruction) and international organizations (e.g., UNDP, World Bank).
- COVID-19 Pandemic: Health authorities, national economic assessments, and international organizations like WHO and IMF are the sources of information on the socioeconomic effects of the epidemic.
- Russia-Ukraine War: The paper incorporates data on how the war has affected energy prices, supply chains, and food security, particularly in the context of Albania. These data are based on reports from (WTO), (ECB), and national statistics on inflation and economic indicators.

Secondary data sources were used (Ministry of Reconstruction, 2020; World Health Organization, 2021; World Trade Organization, 2023).

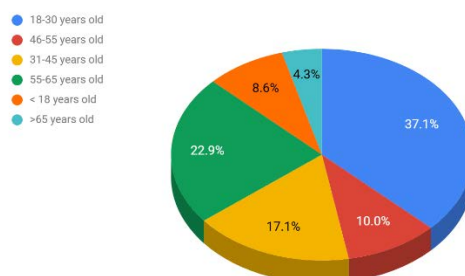
Survey design: The questionnaire was designed with the following key sections:

- Demographics: Age, gender, education level to understand patterns of digital service use across different population groups.
- Access and use of digital services: Frequency of use, types of services accessed (e.g., tax filing, healthcare), and the devices used (smartphones, computers, etc.) to measure the extent of digital engagement.
- Challenges and difficulties: Specific barriers encountered by users, such as technical issues, internet access, or usability problems, particularly focusing on older adults (aged 55+).
- Perceptions and satisfaction: Overall satisfaction with digital services, perceived benefits (e.g., time-saving, convenience), and areas for improvement, especially in relation to service accessibility and ease of use.

4. Research results and comments

According to a questionnaire made on the use of online platforms for public services, each answer will be analyzed for the age groups of the respondents.

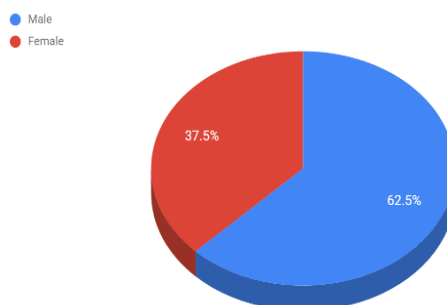
Figure 1. The distribution of respondents by age group



Source: Author's own representation.

This questionnaire was completed by 70 persons of different age groups. The age group which has the highest share is 18-30 years old, representing 37.1% (Figure 1), but the aim is to analyze in detail the age group 55-65 years old, which represents 22.9% of the respondents. From this age group, 37.5% are women and 62.5% are men (Figure 2).

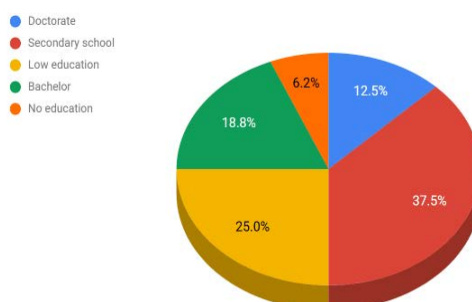
Figure 2. The distribution of respondents in the 55–65 age group by gender



Source: Author's own representation.

The level of education that covers this age group of respondents is mainly secondary education, which is the highest % of respondents with 37.5% (Figure 3).

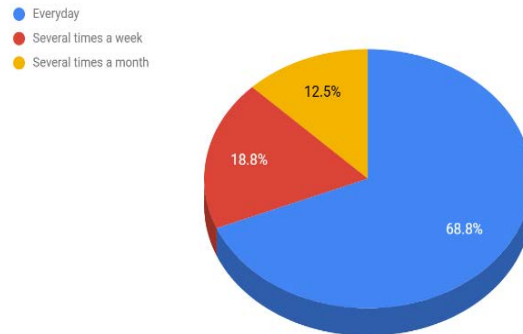
Figure 3. The distribution of respondents in the 55–65 age group by education level



Source: Author's own representation.

According to the responses of the targeted age-group, all the respondents indicated they use a smartphone. Among them, almost 68.8% use it every day (Figure 4). At this point it seems that this age group is familiar with technology and the use of the phone and applications.

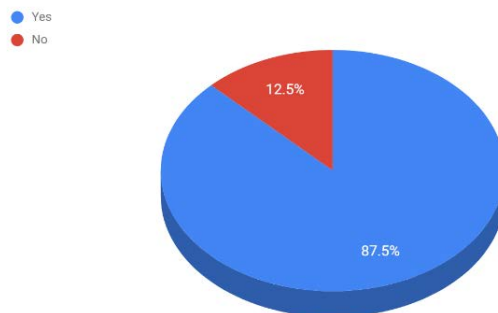
Figure 4. The breakdown of responses to the question: How often do you use the Internet?



Source: Author's own representation.

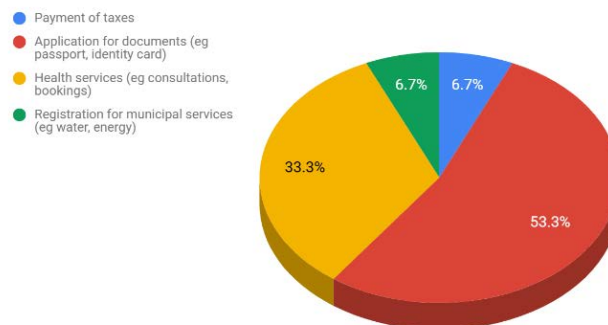
Of course, almost 87.5% of them (Figure 5) used online applications to receive public services, mainly the requests (Figure 6), 53.3% were for passport documents and identity cards, 33.3% of them for medical services, 6.7% for health services and 6.7% for payment of taxes.

Figure 5. The breakdown of responses to the question: Have you ever used online applications to receive public services? (e.g. paying taxes, applying for documents, health services)?



Source: Author's own representation.

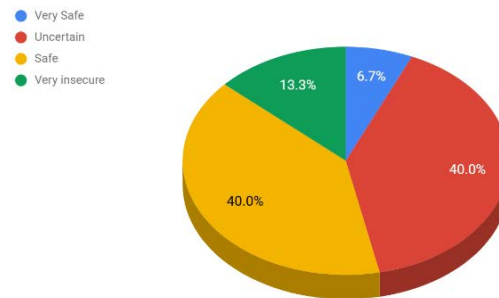
Figure 6. The breakdown of responses to the question: If yes, which of the following services have you used online?



Source: Author's own representation.

Figure 7 highlights the breakdown of the responses to the question related to the level of confidence of the respondents regarding the security of their data on these online platforms. There is an equal percentage between the respondents who feel safe vs. those who feel uncertain (40%). It should be emphasized that there is another category (13.3%) which feels very insecure about personal data and the other part 6.7% which feels very safe.

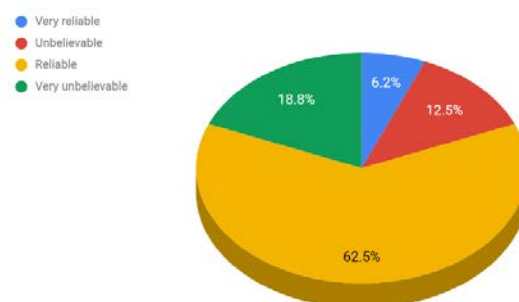
Figure 7. The breakdown of responses to the question: How confident do you feel about the security of your personal data on the public services online platform?



Source: Author's own representation.

Figure 8 displays the distribution of the responses to the questions regarding how efficient and serious is the process of receiving public services online. It seems that there is a difference in the results, as 62.5% of the respondents perceive this process as serious, regardless of the result above, only 40% felt safe from online information. Here we see that regardless of the fear that this age group feels from information on online platforms (Fear from cyber attacks), they are aware that this modernized and advanced method is efficient and serious.

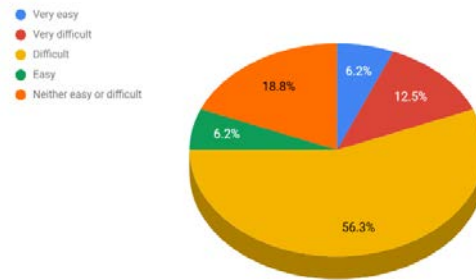
Figure 8. The breakdown of responses to the question: Do you trust that the services provided by this platform are reliable and efficient?



Source: Author's own representation.

In Figure 9, which depicts the distribution of the responses to the question on how easy this online use is for the respondents, it can be noticed that most of them (56.3%) have difficulty using it, 12.5% of them consider it very difficult, 18.8% are intermediate, 6.2% think that the program is very easy to use and 6.2% considerate it easy.

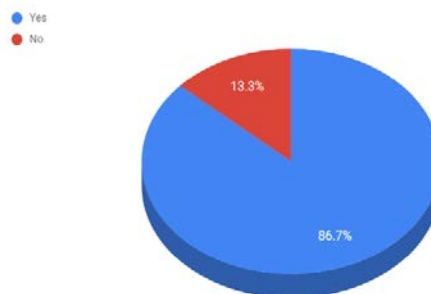
Figure 9. The breakdown of responses to the question: How easy was it for you to use online applications for public services?



Source: Author's own representation.

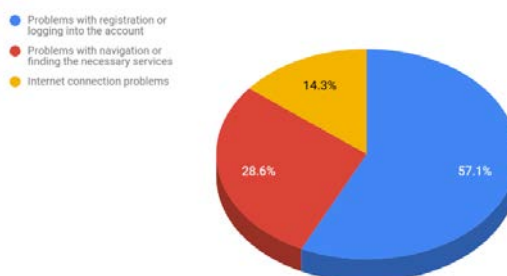
Next, the respondents were asked if they had encountered technical problems and which were these problems. According to the results, the large majority of them experienced technical problems (86.7%, Figure 10). Among this category, 57.1% of the respondents encountered problems with the registration and login (Figure 11). This is very easy to understand, since recently the online platform has changed the login process by sending a unique code to the user's email or phone number, which is generated after 100 seconds. A share of 14.3% of the respondents encountered difficulties in connecting to the Internet, while 28.6% faced challenges in finding the right services. The difficulty for the last category may be that business and citizen services are included together and not separated. This can lead to confusion in finding documents.

Figure 10. The breakdown of responses to the question: Have you ever encountered technical issues while using these apps?



Source: Author's own representation.

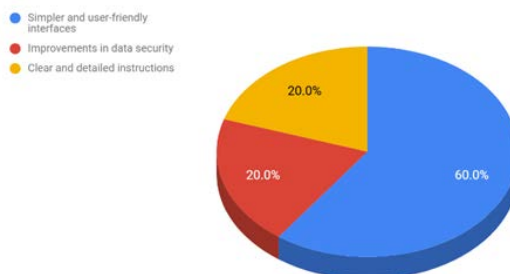
Figure 11. The breakdown of responses to the question: If so, what technical problems did you encounter?



Source: Author's own representation.

Figure 12 illustrates the breakdown of the respondents as regards their opinion related to the areas where the online platform of public services should be improved. It appears that 60% of the respondents want this platform to be made easier to use. The rest is divided into 20% that require improvements in data security and 20% willing for more clear and detailed instructions.

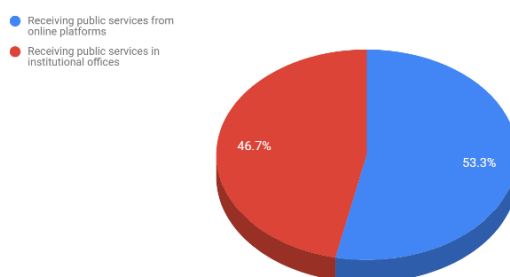
Figure 12. The breakdown of responses to the question: What improvements do you think would make these apps more suitable for you?



Source: Author's own representation.

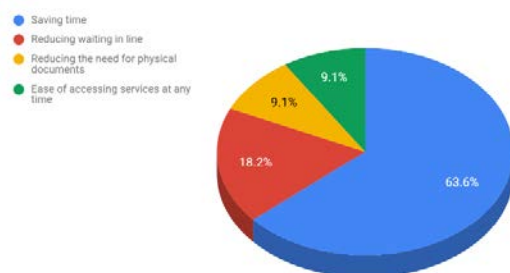
When asked about their preference, about 53.3% of the respondents would like to receive public services online (Figure 13), while 46.7% want to receive public services in institutional offices. For the first category, which holds the largest share, in addition to the difficulties they may encounter and the confidence they have in improving the platforms, they state that this method saves them time (63.6% of them) (Figure 14). The other category, which prefers to receive services in the institution, feels safer with physical documents and of course they receive information verbally from office employees for any ambiguity they have.

Figure 13. The breakdown of respondent's preference regarding the method of receiving public services



Source: Author's own representation.

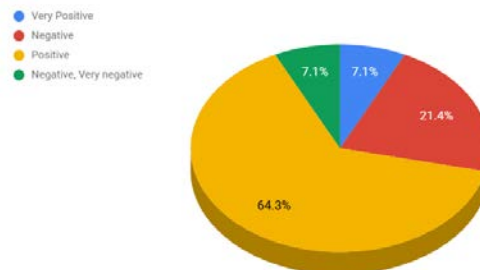
Figure 14. The breakdown of responses to the question: What facilities gives you the online public service?



Source: Author's own representation.

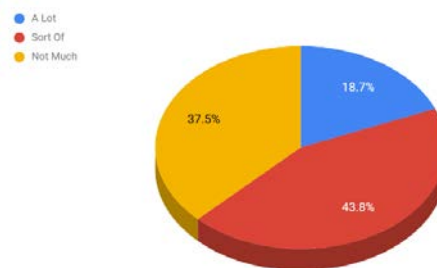
As evidenced by the findings of the questionnaire, the implementation of online services has a significantly positive impact (Figure 15), contributing to the overall enhancement of service quality (Figure 16) by streamlining processes, increasing accessibility, and improving user satisfaction.

Figure 15. The breakdown of responses to the question: How do you rate the impact of using online services on your daily life?



Source: Author's own representation.

Figure 16. The breakdown of responses to the question: Do you think online services have improved the quality of public services?



Source: Author's own representation.

Cyberattacks are one of the reasons why respondents can be afraid of the services offered by internet platforms. Cyber security is essential to the information technology industry. Cyber security is the first thing that springs to mind when an assault takes place. Online data protection has grown to be a top priority. The vast number of digital devices linked to the network has grown quickly in recent years, surpassing 50 billion by the end of 2021, which raises the number of devices that are at risk. The future of intelligent cyber security systems and services depends on "data security" as businesses are changing to rely on telecommunication network technology for data interchange. Public services were created on the e-Albania platform because internet platforms were created during the COVID-19 epidemic. Due to the recent implementation of this electronic system, hackers from a variety of service sectors have periodically targeted it, creating hours-long service outages, downloading and releasing all sensitive data. Following many minor attacks, the full system was attacked in July 2022, resulting in a multi-day blackout of the system and its services. e-Albania was the target of a severe cyberattack by cyber attackers known as "Homeland Justice" that rendered websites and services inaccessible. According to an investigation, cybercriminals first got access to the victim's network around 14 months prior to the disastrous cyberattack, which featured malware that erased drives and encoded files in the manner of ransomware. For over a year, the actors had constant access to the network and would periodically view and take use of the email content. Home Land Justice's social media accounts showed a recurring pattern from late July to mid-August 2022 of promoting Government of Albania information for publication, asking respondents to choose which government information they would like Home Land Justice to publish, and then publishing the information in the form of a zip file or a video of a screen capture with the documents displayed. This cyberattack purposefully hurt the nation and the

future growth of this industry while causing social issues, financial losses, and harm to e-Albania's brand (Basholli, 2022).

5. Conclusion

The main conclusions are summarized as follows:

1. Technical and Usability Issues: The high incidence of technical problems, such as slow loading times and frequent crashes, indicates that the infrastructure supporting online services in Albania requires significant improvement. Users face difficulties navigating complex websites and understanding instructions, which suggests a need for more user-friendly design and better information dissemination.

2. Accessibility challenges: The disparities between urban and rural areas in accessing online services highlight a critical issue. Expanding digital infrastructure to rural areas is essential to ensure equal access to services. Additionally, the limited support for people with disabilities indicates a gap in inclusive service design, necessitating targeted efforts to make digital services accessible to all citizens.

3. Privacy and security concerns: Despite the benefits of online services, concerns about data privacy and security are prominent. This underscores the importance of implementing robust data protection measures and educating citizens about how their data is managed and protected.

4. Perceptions and satisfaction: While there is a general appreciation for the convenience and time-saving aspects of online services, the mixed satisfaction levels indicate that there is room for improvement. Enhancing technical reliability and user-friendliness, along with addressing privacy concerns, can significantly boost user satisfaction.

5. Economic impact: The results reflect the broader context of economic uncertainty in Albania. Effective digital services can contribute to economic resilience by improving efficiency and access to essential services, particularly during times of crisis. However, the current challenges in digital service delivery could hinder these potential benefits.

6. Policy implications: Policymakers should prioritize investments in digital infrastructure and service design, focusing on inclusivity and security. By addressing the identified challenges, Albania can enhance its digital transformation efforts, supporting sustainable development and economic stability.

This research paper analyzes the economic issues and uncertainties affecting both domestic and global economies, and identifies the critical decisions necessary to support digital transformation and ensure sustainable growth. In conclusion, dealing with economic uncertainties requires an integrated approach that includes sustainable economic policies, strategic investments, and a strong focus on education and innovation. Digital transformation is a key component to achieve sustainable development and ensure long-term prosperity. Only through close cooperation between governments, the private sector and the international community can the complex economic challenges of today and tomorrow be successfully addressed.

References

- Ahmetaj, A. (2022). Decision No. 370, dated 1.6.2022 Digital Agenda of Albania 2022–2026. Retrieved from <https://akshi.gov.al/wp-content/uploads/2022/06/vendim-2022-06-01-370.pdf> (Page 5)
- Albala-Bertrand, J. M. (1993). Natural disaster situations and growth: A macroeconomic model for sudden disaster impacts. *World Development*, 21(9), 1417-1434.
- Baldwin, R., & Di Mauro, B. W. (2020). Economics in the time of COVID-19: A new eBook. *Vox CEPR Policy Portal*, 2(3), 105-109.
- Banushi, B., & Sulaj, I. (2020). Economic impacts of an earthquake disaster and COVID-19 in Albania. *Scientific Bulletin-Economic Sciences/Buletin Stiintific-Seria Stiinte Economice*, 19(2).
- Barro, R. J., Ursúa, J. F., & Weng, J. (2020). The coronavirus and the great influenza pandemic: Lessons from the “Spanish flu” for the coronavirus’s potential effects on mortality and economic activity (No. w26866). National Bureau of Economic Research.

- Basholli, F. (2022, December). Cyber warfare, a new aspect of modern warfare. In VI International Scientific Conference on Security „CONFSEC“ (pp. 52-54).
- Bughin, J., Catlin, T., Hirt, M., & Willmott, P. (2019). "The catalyst for economic resilience: Digital transformation." *McKinsey Quarterly*, 55(3), 78-89.
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company.
- Cavallo, E., Galiani, S., Noy, I., & Pantano, J. (2013). Catastrophic natural disasters and economic growth. *Review of Economics and Statistics*, 95(5), 1549-1561.
- European Central Bank (ECB). (2023). "The economic impact of the Russia-Ukraine conflict on the Euro Area." *ECB Economic Bulletin*, Issue 2. Retrieved from <https://www.ecb.europa.eu/press/economic-bulletin/html/eb202302.en.html>
- Institute of Statistics (INSTAT). (2020). Gross domestic product. INSTAT. Retrieved from <https://rb.gy/bnp5ad>
- International Monetary Fund (IMF). (2022). *World Economic Outlook: War Sets Back the Global*. Retrieved from <https://www.imf.org/en/Publications/WEO/Issues/2022/04/19/world-economic-outlook-april-2022>
- Khan, S., Khan, S., & Aftab, M. (2015). Digitization and its impact on economy. *International Journal of Digital Library Services*, 5(2), 138-149.
- Klaudia, L. I. P. I., & Harremi, M. (2022, September). Analysis of the economic development of Albania, before and after the pandemic COVID-19. In *Book of Proceedings* (p. 305).
- Knight, F. H. (1921). *Risk, uncertainty and profit*. Hart, Schaffner and Marx.
- Krugman, P. (1991). *Geography and trade*. Cambridge, MA: MIT Press.
- Lazimi, L. (2021). Tourism sector in Albania: Post-pandemic challenges require new mindsets. *European Scientific Journal ESJ*, 17(11), 35-49.
- Leka, B. (2020). An overview of the pandemic impact in the economy of Albania. *Romanian Economic Journal*, 23(78), 2-12.
- Mergel, I., Edelman, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36(4), 101385.
- Ministry of Reconstruction. (2020). *Post-Earthquake Damage Assessment Report*. Tirana: Government of Albania.
- Monitor Magazine. (2022). Retrieved from <https://monitor.al/lufta-rusi-ukraine-ndikimet-kryesore-ne-tregun-shqiptar-te-cmimet-e-grurit-dhe-naftes/>
- Rodriguez-Oreggia, E., De La Fuente, A., De La Torre, R., & Moreno, H. A. (2013). Natural disasters, human development and poverty at the municipal level in Mexico. *The Journal of Development Studies*, 49(3), 442-455.
- Stiglitz, J. (2002). *Globalization and neoliberalism*. New York: WW Norton.
- Terihati, E. (2024). Energy security in Albania – towards energy self-sufficiency 2030. *Jus & Justicia*.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations, New York, NY, USA.
- United Nations Development Programme (UNDP). (2020). *Survey of household damages due to the earthquake*. Retrieved from https://www.undp.org/albania/publications/survey-household-damages-due-earthquake?utm_source=chatgpt.com
- World Bank. (2021a). *Economic recovery and resilience in Albania*. Retrieved from <https://documents1.worldbank.org/curated/en/099845001312232607/pdf/P1752090e8141b05a08afc06ea6bc385da3.pdf>
- World Bank. (2021b). As economy rebounds, Albania has opportunity to build a more sustainable growth model. Retrieved from <https://www.worldbank.org/en/news/press-release/2021/10/21/as-economy-rebounds-albania-has-opportunity-to-build-a-more-sustainable-growth-model>
- World Health Organization (WHO). (2021). *Impact of COVID-19 on public health systems in the Western Balkans*. WHO Regional Office for Europe.
- World Trade Organization (WTO). (2022). *The crisis in Ukraine: Implications of the war for global trade and development*.

World Trade Organization (WTO). (2023). Global economic impact of the Russia-Ukraine conflict. Geneva: WTO.

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