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The role of artificial intelligence in the development of entrepreneurial initiatives among displaced persons: management of innovative social work practices

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Abstract The article focuses on the scientific, theoretical, and practical approaches to involving artificial intelligence in the economic and social spheres. The authors examined the main issues of intensifying the digitalization process in business activities worldwide. The paper highlights the extent of the actual and potential use of artificial intelligence in business as well as the involvement of specialists in the digitalization system. The authors described the advantages and drawbacks of using artificial intelligence in social work, particularly with displaced persons (DPs). The article also analyzed the dynamics of venture capital investment into artificial intelligence. The study summarized the results of market research on the impact of artificial intelligence on the development of business processes worldwide and in particular countries. The authors highlighted the experience of European countries in using artificial intelligence for the socioeconomic integration of refugees from Ukraine. In addition, they outlined the threats and opportunities of using artificial intelligence in business. The research focused on the main provisions of the territorial community work organization for developing entrepreneurship in Ukraine for displaced persons.

Keywords: artificial intelligence, digitalization, displaced persons, entrepreneurship, innovations, management, social work.

1. Introduction

The global introduction of artificial intelligence (AI) and its impact on business and society has reached a tipping point. Artificial intelligence is rapidly bringing new benefits and effectiveness to companies all over the world. Such benefits include new automation capabilities, increased ease of use and accessibility, and a wide range of proven use cases implemented as off-the-shelf solutions, such as virtual assistants, and integration into existing operations, such as IT processes (IBM, 2022).

Artificial intelligence-based e-commerce has a significant impact on the economic growth of the national economy, as its share in the GDP of countries is increasing (Verbivska, 2023). Digitization of business management is a necessary condition for ensuring competitive advantages in the market and sustainable development of companies in the conditions of modern challenges and threats (Kovtunenko, 2019). Digitization of social and economic processes allows to maximize the level of efficiency in the use of resource potential of companies (Roieva, 2023). Artificial intelligence creates a positive circular or "flywheel" effect, allowing businesses to operate more efficiently, generate more data (Ilzetzki, 2023), improve their services, attract more customers and offer lower prices, but it is also believed to lead to increased concentration and monopoly power of companies, as is already happening in the high-tech sector (Economist, 2018).

Virtual educational platforms and e-learning systems help displaced persons and retirees to acquire new skills and knowledge necessary for solving social issues and business management (Prokopenko, 2016), effectively solving the problems of unemployment and employment (Dyman, 2018), managing innovative projects (Prokopenko, 2022). An important role is played by artificial intelligence for the effective support of refugees (Emslie, 2022), the organization of volunteer work (TS2 SPACE, 2023), the transfer of social work innovations for vulnerable populations in Ukraine (Horemykina, 2020) and other

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countries of the world. The multifaceted nature of the use of artificial intelligence requires constant monitoring of its impact on the management of innovative practices.

2. Literature review

In the modern context of globalization and digitalization of economic processes, migration of the population in search of a safe living place and employment, studies of the impact of artificial intelligence on entrepreneurship development, and the formation of effective social policy are becoming increasingly relevant. The basic postulates for stimulating entrepreneurship in Ukraine by using innovative artificial intelligence technologies are set out in the Concept for the Development of Artificial Intelligence in Ukraine (Concept, 2020). Artificial intelligence technology is the latest way to improve the effectiveness of law enforcement. It allows for rational and legal decisions in practice and in real-time, which are most appropriate to the legal situation (Kryvytskyi, 2021).

A cohort of scholars has considered the improvement of public management of business processes, recommendations for organizing social and educational programs for young people, using artificial intelligence technologies, business intelligence systems, and the implementation of state transfer policy (Karpenko, 2021; Kibik, 2022). Prokopenko et al. (2022) investigated the role of social media in the innovation potential of both businesses and self-employed individuals. From a practical standpoint, this study is relevant to various stakeholders, especially companies, scientists, and consumers.

Digitalization was considered by Roieva and Oneshko, et al. (2023) as a way to use resource potential in the entrepreneurial sphere efficiently. In the context of European integration processes' development, the level of e-commerce influence on business processes was studied by Verbivska et al. (2023). The study on artificial intelligence by Georgieff and Hyee (2021) contributes to the OECD AI-WIPS program. This program aims to ensure the practical, helpful, and human-centered introduction of artificial intelligence into the labor market and its acceptance by the broad public.

However, in the context of demographic, economic, and political disruptions, less attention is paid to the study on the prerogatives of using artificial intelligence for employment and entrepreneurship among the migrant population, including displaced persons.

3. Methods

During the study, the authors employed the following general scientific and special methods:

- Monographic method (for systematizing the views of domestic and foreign scholars and generalizing the category and conceptual apparatus).
- Graphical method (for visualization of analytical and statistical materials and the results of the study).
- Economic and statistical methods (for analyzing the concentration of artificial intelligence specialists in certain world countries).
- Systematic approach (to substantiate strategic directions for improving the role of artificial intelligence in developing entrepreneurship among displaced persons in Ukraine).
- Abstract and logical analysis (for theoretical generalizations and formulation of the research outcomes).

4. Results

The global rate of artificial intelligence implementation is steadily growing. As of 2022, it reached 34%, which is four percentage points higher than a year before. In some industries and countries, applying artificial intelligence has become almost a way of life (IBM, 2022). Further confirming the importance of accessibility, 44% of enterprises are working to integrate AI into existing applications and processes (IBM, 2022) (Figure 1).

The main reason for the slow introduction of artificial intelligence in the past was the need to develop a strategy for its successful implementation and application to achieve business goals. Nowadays, many companies that have not yet started digitalizing their business, especially small and medium-sized enterprises, are trying to develop appropriate implementation strategies. Large companies are 60% more likely than small and medium-sized businesses to have a comprehensive strategy for using artificial intelligence in their operations. The majority of small businesses (41%) are currently looking for cost-effective alternatives to using artificial intelligence. Digitalization is transforming how many business companies operate. It helps to build competitive advantages, reduce costs, and increase their efficiency.

Artificial intelligence uses vast data to identify patterns in people's search behavior and provide more relevant information about their situations. As people increasingly use personal computers and as intelligent technologies (software) continue to improve, users will have more opportunities for customization. For small businesses, it is vital because they will find it easier to target a niche, more specific audience (Kondratieva et al., 2022).

Artificial intelligence is penetrating various fields, and social work is no exception. The impact of artificial intelligence on social work has the potential to revolutionize intervention planning and offer new approaches to increasing the efficiency and productivity of social work.

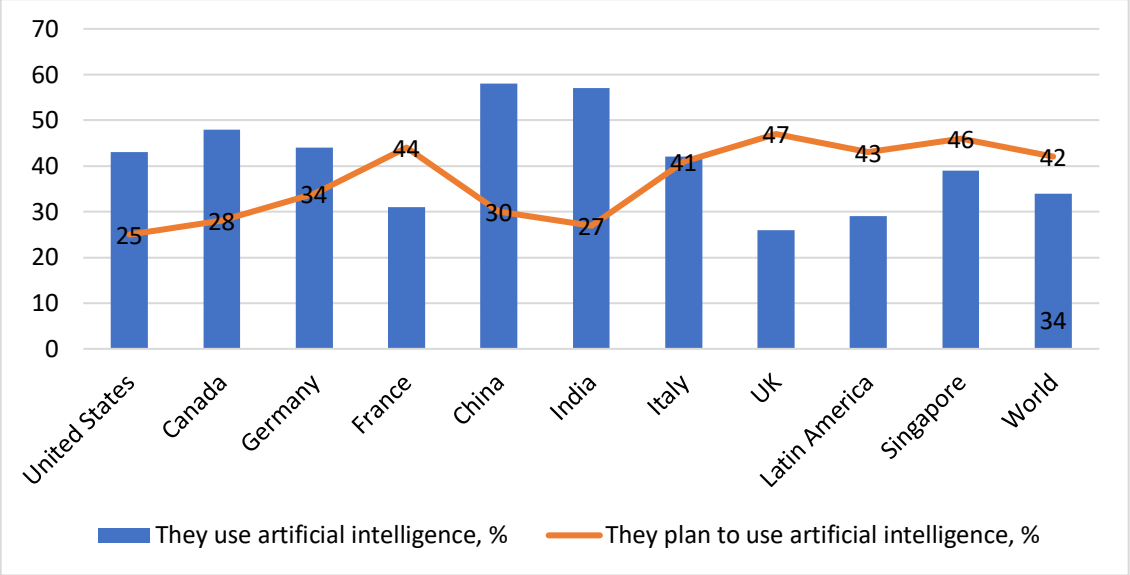

Figure 1 Actual and potential use of artificial intelligence by business companies, %.
Source: (IBM Global AI Adoption Index 2022).

Traditionally, social workers relied on their own knowledge and experience when planning client interventions. This process could be labor-intensive and subjective because it relied on the knowledge and judgment of individual social workers. With the advent of AI, social workers have access to a wealth of data and analytical tools that can inform and guide intervention planning.

One of the key advantages of artificial intelligence in social work is the ability to quickly and accurately analyze large volumes of data. Social workers can input various information about their clients into AI systems, including demographic data, social status, and previous interventions. The system then processes this data and generates insights that can be used for intervention planning. For example, artificial intelligence can identify patterns and trends in the client database. It allows social workers to adapt information for employment based on evidence-based practice (Bayev et al., 2022).

For social services, intelligent software helps identify potential risks and predict outcomes. By analyzing historical data and patterns, artificial intelligence systems can identify clients who may be prone to specific issues, such as substance abuse or domestic violence. This allows social workers to intervene at an early stage and provide targeted support to prevent further harm. In addition, artificial intelligence can quickly forecast the expected outcomes of social service activities in organizing entrepreneurship with a higher likelihood of success (Borodina et al., 2022).

Another significant advantage of using artificial intelligence in the work of social services is the organization of training for unemployed people. It focuses on specific, economically advantageous business segments in certain regions or communities. The use of intelligent programs helps analyze and shape a large volume of information, including cases, scientific papers, and best practices. This database assists employment services in forming a wide range of vacancies based on the experience of others to improve their intervention plans for entrepreneurship. In other words, artificial intelligence creates an informational and practical platform for sharing ideas, asking questions, and seeking advice in the field of practical business.

However, it is essential to note that digitization does not replace the human factor, as well as such unique skills as empathy, critical thinking, and creativity. Therefore, artificial intelligence should be considered not as a tool to replace the skills of social workers but rather as a tool that complements and improves the work of social workers.

The research by Accenture has shown that 84% of top-level executives believe that business strategy can only be implemented with the scaling of artificial intelligence. However, only 16% of them have moved from simple experiments to building a business based on the powerful capabilities of artificial intelligence (ACCENTURE, 2022). As a result, this small group of leaders has achieved nearly three times the return on investment in artificial intelligence compared to their less effective colleagues. Yet, there are concerns that artificial intelligence will eliminate old jobs faster than it creates new ones (ZN.ua, 2018). These barriers to technology access created by different levels of data and production ownership can lead to monopolization by a small number of firms in specific industries. The owners of non-technical businesses in many industries have begun to worry that artificial intelligence will destroy their companies and lure prospective young people to tech companies (Economist, 2018).

The dominant position in the global arena of artificial intelligence specialists is held by the United States (30.33% in 2018 and 25.04% in 2022). In addition, artificial intelligence is actively used in Europe (Germany, United Kingdom, France, etc.) and low-income countries (India and Brazil) (Figure 2).

In Ukraine, the process of digitalization has only begun to grow from 0.68% of AI specialists in 2018 to 0.39% in 2022. The outflow of specialists is related to migration due to job losses caused by COVID-19 and the Russian military aggression in

2022-2023.

One of the most critical impacts of artificial intelligence on business comes from its ability to automate repeated tasks. As a result, companies save time and money by improving accuracy and reducing errors. Over the past decade, the use of artificial intelligence in daily work has snowballed (Figure 3).

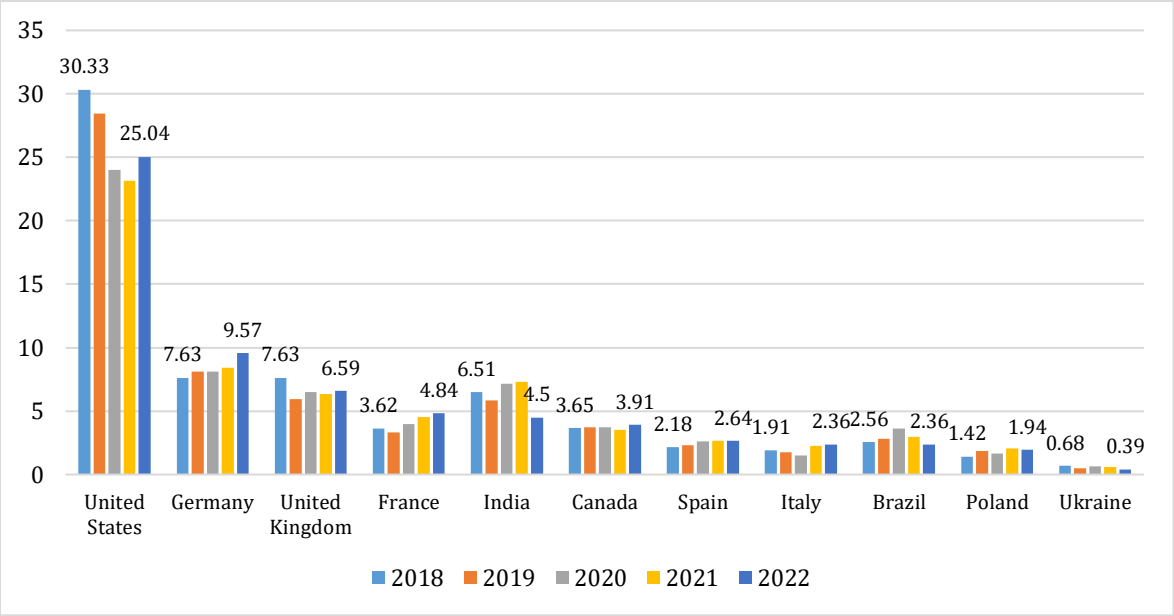

Figure 2 The share of AI specialists in selected world countries, 2018-2022, %.
Source: (OECD, 2023).

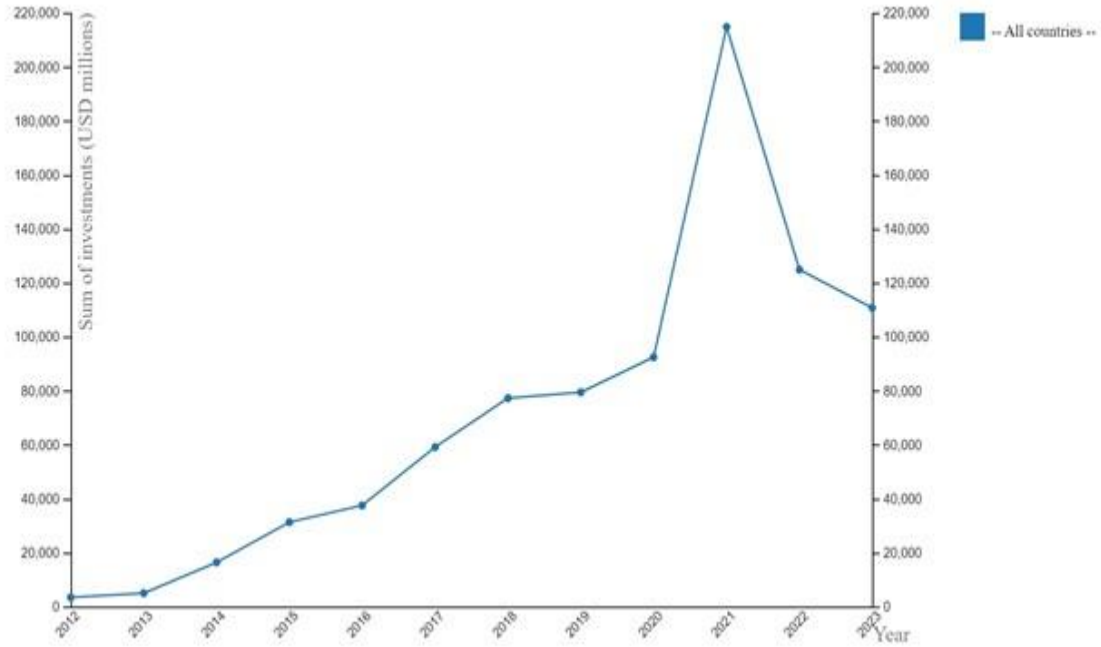

Figure 3 Venture capital investments into artificial intelligence worldwide, in USD million.
Source: (OECD, 2023).

In the CfM-CEPR survey conducted in May 2023, the European group members were asked to assess the impact on global economic growth and unemployment in high-income countries over the next decade. The majority of discussion participants believe that artificial intelligence will contribute to global growth at a rate of 4-6% per year (the average rate for the past few decades has been 4%). Most experts also believe that digitalization will not affect employment in high-income countries. Meanwhile, other respondents have split their opinion between growth forecasts and a decline in unemployment. It is worth noting that AI is still in its nascent stage. For this reason, most discussion participants expressed significant uncertainty in their predictions (Ilzetzki, 2023; Dudnik et al., 2020).

In May 2022, the United Nations (UN) reported that Ukraine had approximately 7.7 million refugees (UN, 2023). Meanwhile, the United Nations High Commissioner for Refugees (UNHCR, 2022) noted that over 5.9 million Ukrainian refugees had fled to various parts of Europe.

According to UNHCR, the humanitarian crisis in Ukraine at the end of 2021 is part of the global situation in which over 89 million people worldwide are "forcibly displaced" due to persecution, conflicts, violence, and human rights violations (UNHCR, 2022).

Displaced persons and refugees face many challenges, from poor living conditions and the loss of identity documents to long-term displacement, discrimination, and employment difficulties. Researchers and high-tech companies are working with humanitarian organizations, non-governmental organizations, and national governments to develop artificial intelligence-based solutions to assist displaced persons and refugees worldwide (Karen Emslie, 2022).

The Comprehensive Refugee Assistance Program in Ukraine aims to create favorable conditions for internally displaced persons in the region (Concept, 2020). This Comprehensive Program is designed to facilitate overcoming difficult life circumstances to ensure prompt coordination of measures to address refugee issues.

Internally displaced persons can access the following services online through the application form and the Diia portal:

- to obtain a displaced person certificate;
- to apply for assistance to cover living expenses;
- to cancel a refugee certificate.

The European Zone countries use a system of socioeconomic integration for refugees from Ukraine (Table 1).

Table 1 The experience of European countries in using artificial intelligence for the socioeconomic integration of refugees from Ukraine.

Country	Measures
Bulgaria, Hungary, the Republic of Moldova, Poland, Romania, and Slovakia	The regional digital website Digital Blue Dot was launched. The website contains a map of available Blue Dot digital centers and information on social assistance, employment, and other services.
Poland	The International Finance Corporation (IFC), along with Santander Polska Bank, has launched a pilot project to provide low-interest loans to refugees and displaced business owners. About $100 million in new loans will be provided to micro, small, and medium-sized enterprises in Poland run by refugees and displaced persons from Ukraine. At least 30% of all loans will be provided to Ukrainian refugee women. There are job fairs for Ukrainian refugees being organized in Polish cities. Both refugees and members of the host community can apply. The platform helps with employment issues, provides translation services, shares information about vacancies, and gives guidance on how to fill out application forms.
Bulgaria	On October 6, 2023, a roundtable on socioeconomic integration was held in Plovdiv. The roundtable was attended by 221 participants from local businesses, institutions, representatives of municipalities, and NGOs that support refugees. They discussed the possibility of launching a "Refugee Employment Platform" to facilitate job search among refugees and local companies willing to employ them.

Source: (UNHCR, 2023).

Thus, in the context of human displacement for various reasons, the main advantages of artificial intelligence include simplicity of use, expansion, and supplementation of knowledge, as well as employment opportunities according to preferences, requests, and options in real-time.

As part of implementing the Concept for the Development of Artificial Intelligence in Ukraine (Concept, 2020), the economic system is planned to stimulate the development of artificial intelligence entrepreneurship, as well as to introduce a state purchase order for artificial intelligence systems and IT specialists. For example, it can be stimulated by improving the business environment, ensuring a predictable tax regime, and developing IT infrastructure.

Furthermore, a project for the retraining of workers whose tasks may be automated within the next 5-10 years has already been prepared. Artificial intelligence plays a significant role in developing small and medium-sized businesses (Marshalok, Melnyk, et al., 2021).

Therefore, the impact of artificial intelligence on social work revolutionizes intervention planning in forming entrepreneurial activity. Artificial intelligence can help predict potential risks and outcomes. It allows social workers to intervene at an early stage and provide targeted support. Additionally, artificial intelligence can enhance cooperation and information exchange among social workers and improve the overall quality of employment intervention plans.

However, it is essential to remember that it cannot replace the unique skills of social workers and their professional experience (the human factor), which is an integral part of social work. With the right balance of artificial intelligence and human intervention, social work can evolve and adapt to better meet personal and societal needs (TS2 SPACE, 2023).

5. Discussions

Today, one of the biggest concerns about using artificial intelligence is its impact on the workplace. Some operational processes can be automated. Still, artificial intelligence plays a dual role: it creates threats and opportunities for businesses (Figure 4).

Under martial law, a significant part of the economically active population of eastern Ukraine migrated to safe territorial communities in the central and western regions of Ukraine. It requires a rational organization of refugee employment. By helping internally displaced persons to start their own businesses, the community will further develop the economic environment, create new jobs for the local population, and generate additional income. To this end, a step-by-step algorithm for organizing social work using artificial intelligence to develop entrepreneurship will be appropriate (Table 2).

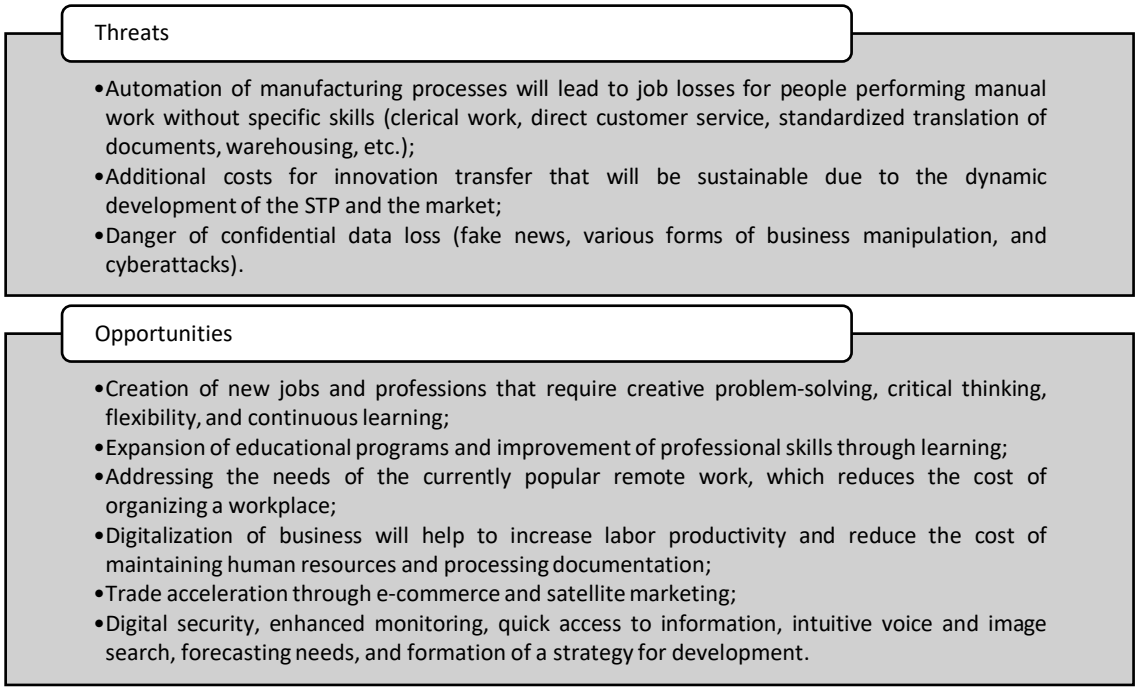

Figure 4 Threats and opportunities for using artificial intelligence in business.

Source: generalization by the authors.

Table 2 Organization of social work of the territorial community for the development of entrepreneurship among displaced persons.

Stage	Target purpose	Methods of realization
Getting familiar with displaced persons	Registration of refugees and identification of their professional skills, educational level, and business preferences	Sociological research through digital platforms: Passport Service centers, Diia, volunteer organizations, humanitarian aid headquarters
Communication with displaced persons	Identification of priority areas for business development within a particular community	Arranging webinars and trainings both offline and online (Zoom, Google Meet, Hopins, vFAIRS, Demio, etc.)
Formation of support programs for displaced people	Relocation of private entrepreneurs' business	Creation of national and international grant programs and business projects to support entrepreneurship

Source: generalization by the authors.

For communities that want to welcome IDPs and encourage them to start their own businesses, the first step can be to use the platforms that have been working with them since the first days of the full-scale occupation:

- Passport Service Centers.
- Diia.
- Volunteer organizations.
- Humanitarian aid headquarters.

It is essential to let people know which areas of entrepreneurship are niche and promising in the community. This can be done through meetings with internally displaced persons interested in developing their own businesses and preparing relevant illustrative materials. The availability of data on potential private entrepreneurs allows the community to create programs to support potential entrepreneurship (bankrupt enterprises, frozen real estate, uncultivated land plots) by providing tax breaks on taxes, property, land leases, etc., for such enterprises.

Particular attention should be paid to the creation of a community list of investment sites (investment proposals and investment passports). Such tools can also motivate displaced persons to start their own businesses with the help of the community where they live.

Targeted population groups can be organized to share experiences and promising projects, as well as regional development ideas to support commercial initiatives of communities in other parts of the country to boost employment and raise the level of refugees' interest in entrepreneurship. These ideas, if they fit the local context of the community, can be used to analyze refugees' visions of starting their own businesses and provide concrete opportunities and solutions.

Speaking about the development of entrepreneurship in society under martial law, it is necessary to consider financial support programs:

- State programs (eROBOTA, Vlasna Sprava, Unified Digital Interaction Platform to Assist Business Relocation).
- International grant opportunities (USAID Competitive Economy of Ukraine, UNDP Rapid Response to Socioeconomic Challenges of Internally Displaced Persons in Ukraine, and Socioeconomic Recovery of Donbas).

The first financial support option implies that the refugee community provides relevant programs and development goals, from the local budget to entrepreneurship.

The second option involves refugees using assistance programs for the region or local community. In this case, the community should provide potential entrepreneurs with information assistance (documentation, consultation, support, etc.).

Today, the creation of one's own business, development of vegetable growing, horticulture, and the provision of grants through the e-ROBOTA service is one of the most powerful government programs. A person can apply for membership through the Diia mobile application. It is possible to submit a business plan in any field of entrepreneurship and receive assistance of up to UAH 25 million. In the case of the horticulture or greenhouse business, the amount of state support is up to UAH 45 million and up to UAH 700 million, respectively. A very convenient and modern user can do anything by filling out an online application on the Diia portal and attaching a business plan along with all other necessary documents.

The support of Ukraine from international partners is vital today. In particular, there are many different options and opportunities for internally displaced persons. However, the social services of territorial communities, for their part, are responsible for helping to find such grants, as well as for applying for a grant. Digitalization of monitoring and information on state and international business support instruments facilitates the inflow of investment into entrepreneurship.

6. Conclusions

As a result, the ability to manage artificial intelligence systems, among other skills, is becoming increasingly important in the IT market. The priority is being given to such business qualities of employees as flexibility and creativity of thinking, stress resistance, and readiness for changes. Such prospects for the future are worrisome, yet they open up new opportunities. Artificial intelligence will put many people out of work. Still, it will provide society with new professions, specialties, and prospects for the development of artificial intelligence. This may result in a desire to develop new aspects of the digital revolution. In general, the threats and risks of digitalizing business operations can help to predict and overcome them accurately.

Artificial intelligence contributes to the entrepreneurship development among internally displaced persons, their adaptation to the economic environment, and socialization in the community.

The experience of other world countries in using artificial intelligence has a practical significance for its implementation in Ukraine. In particular, its relevance increases in the context of intensified internal displacement of persons due to the military aggression of the Russian Federation.

Ethical considerations

Not applicable.

Conflict of Interest

The authors declare no conflicts of interest.

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