

## IMPACT OF DEMOGRAPHIC TRENDS ON NEW BUSINESS MODELS IN BOSNIA AND HERZEGOVINA

Research Engineer Kamran Khan<sup>1</sup>

<sup>1</sup>Pakneftgaz, Saddozai House No.54/A, Dera Ismail Khan, Pakistan  
e-mail: kamrankhan.azerbaijan@gmail.com

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### **Abstract**

*The impact of demographic trends on new business models in Bosnia and Herzegovina is a subject of growing significance in the context of rapid social and economic transformations. Over the past few decades, the country has witnessed important shifts in its demographic landscape, including aging populations, urbanization, and changing migration patterns. These demographic changes have profound implications for the structure and dynamics of business models in the country. As the population ages and the youth demographic decreases, businesses must adapt by leveraging new technologies, embracing automation, and catering to evolving consumer needs. Moreover, the increasing trend of urbanization and migration from rural to urban areas has spurred demand for innovative services and products that cater to a more diverse and geographically concentrated population. This research explores how businesses in Bosnia and Herzegovina are responding to these demographic trends, particularly in sectors such as International recruitment, retail, technology, healthcare, and education. It examines the role of demographic factors in shaping market demand, consumer behaviour, and the adoption of innovative business practices. The study concludes that understanding and adapting to these demographic shifts is crucial for businesses aiming to thrive in a rapidly evolving market environment in Bosnia and Herzegovina.*

**Keywords:** *demographic trends, business models, Bosnia and Herzegovina, urbanization, International recruitment.*

**JEL classification:** *J11, J61, L26, O15, R23.*

## 1. INTRODUCTION

The socio-economic landscape of Bosnia and Herzegovina is undergoing profound transformation, shaped increasingly by demographic forces that extend far beyond the traditional parameters of post-conflict reconstruction and industrial transition. The country's demographic dynamics is marked by population ageing, declining fertility, sustained emigration, and intensifying urbanization which are reshaping the conditions under which businesses operate. These transformations are not merely quantitative shifts in population size or structure. But they represent qualitative changes that directly influence consumption behaviour, labour market composition, spatial economic patterns, and ultimately, the configuration of business models. In a context where demographic change intersects with technological diffusion, globalization, and institutional reform, the capacity of firms to innovate and adapt their business models has become a central determinant of competitiveness and long-term sustainability.

Demography has always been a key driver of economic and social change. However, in the case of Bosnia and Herzegovina, demographic trends are especially influential because they coincide with the nation's ongoing economic restructuring and its gradual integration into European and global markets. Following the dissolution of Yugoslavia and the subsequent war, Bosnia and Herzegovina experienced not only substantial human losses but also profound shifts in migration and fertility patterns. Since the early 2000s, the country has faced persistent negative natural population growth and outmigration of working-age individuals. According to the United Nations Economic Commission for Europe, the proportion of the population aged 65 and above is projected to rise steadily over the coming decades, while fertility rates remain among the lowest in South Eastern Europe. This combination of ageing and depopulation creates a shrinking domestic labour force and a contracting consumer base, both of which compel firms to redesign how they create, deliver, and capture value.

The interplay between demographic change and business models has become a focal point of research in recent years, particularly in contexts characterized by demographic stagnation and institutional transition. Business models which are conceptually defined as the logic by which firms create and sustain value (Osterwalder & Pigneur, 2010), are inherently dynamic systems. They are sensitive to changes in their external environment, including macroeconomic, technological, and demographic conditions. In Bosnia and Herzegovina, demographic realities are exerting pressure on firms across multiple sectors to rethink fundamental assumptions about their target markets, value propositions, and operational structures. For instance, the declining share of young people has implications for labour intensive industries such as manufacturing and retail, whereas the growing elderly population is stimulating demand for healthcare, wellness, and assisted living services. Similarly, urbanization and migration reshape geographic market concentration, driving demand for digital platforms, logistics services, and infrastructure investment concentrated in metropolitan areas like Sarajevo, Banja Luka, and Mostar.

These demographic transformations also interact with broader regional and global trends that redefine competitiveness. Bosnia and Herzegovina, as a small, open, and transition economy, faces a dual challenge. On the one hand, to maintain a viable domestic market in the face of demographic decline and on the other side, to leverage its human capital, diaspora networks, and technological potential to integrate more effectively into regional and global value chains. The result is a growing need for adaptive business models that can function within a reduced labour pool and an increasingly polarized population distribution.

Such models typically emphasize digitalization, automation, cross border service provision, and customer re-segmentation, thereby converting demographic constraints into strategic opportunities.

Population ageing is perhaps the most visible demographic process affecting business model transformation in Bosnia and Herzegovina. With a rising proportion of retirees and older adults, consumption patterns are shifting from goods based to service oriented expenditures, emphasizing healthcare, leisure, and convenience. Firms in sectors such as pharmaceuticals, telemedicine, and wellness are responding by introducing innovative service delivery mechanisms that prioritize accessibility and personalization. Moreover, the ageing of the workforce creates challenges for labour productivity and knowledge transfer, prompting firms to invest in automation and lifelong learning systems to maintain competitiveness. At the same time, declining fertility and youth emigration undermine the domestic availability of skilled labour, particularly in technical and digital sectors. This has encouraged the rise of new business models in international recruitment, remote work facilitation, and outsourcing, which allow firms to access global labour markets while retaining organizational bases within Bosnia and Herzegovina.

Urbanization and internal migration constitute another critical component of Bosnia and Herzegovina's demographic transformation. The concentration of population in urban areas creates both opportunities and risks for businesses. On the opportunity side, urbanization facilitates agglomeration effects, enabling greater efficiency in logistics, distribution, and consumer reach. It also supports the expansion of digital and e-commerce platforms, as urban consumers typically exhibit higher technological adoption rates. On the risk side, however, rural depopulation diminishes local markets and weakens agricultural and artisanal industries, creating regional inequalities that may threaten overall economic cohesion. For businesses, this spatial redistribution of population necessitates new approaches to supply chain management, retail strategy, and service delivery. Companies are increasingly turning to hybrid and decentralized models that combine digital interfaces with localized operations, allowing them to serve dispersed populations while optimizing resource allocation.

Migration, encompassing both emigration and diaspora engagement, further complicates the relationship between demographics and business in Bosnia and Herzegovina. Emigration continues to drain the domestic labour market, yet it also generates significant remittance flows and knowledge transfer opportunities. The estimated annual inflow of remittances is equivalent to nearly 14% of Gross Domestic Product. It constitutes an important driver of household consumption and investment. Businesses are learning to adapt their models to harness this transnational dimension of the Bosnian economy. For example, retail and real estate firms target diaspora consumers through online platforms and seasonal marketing strategies, while recruitment and technology firms develop hybrid models that link domestic expertise with international projects. This phenomenon illustrates how demographic "losses" in population can be partially offset by business models that integrate external economic actors, transforming migration from a purely negative demographic factor into a source of structural adaptation and innovation.

Understanding the impact of demographic trends on business models also requires attention to institutional and policy factors. Bosnia and Herzegovina's fragmented governance structure, divided between the Federation of Bosnia and Herzegovina and Republika Srpska, complicates policy coordination in areas such as labour, healthcare, and education. As a result, businesses often act as de facto agents of socio-economic adaptation, innovating in the absence of coherent demographic or economic policy frameworks. This situation highlights the need for private sector flexibility and entrepreneurial experimentation.

Firms that recognize demographic signals early and integrate them into strategic planning by adopting digital transformation, pursuing market diversification, and reconfiguring their products and services are more likely to achieve resilience amid demographic uncertainty.

From a theoretical perspective, demographic trends in Bosnia and Herzegovina can be interpreted through the lens of evolutionary economics and adaptive business model theory. Firms operate within a constantly changing selection environment, and demographic variables constitute a fundamental part of that environment. Shifts in age structure, fertility, and spatial distribution alter the "fitness landscape" in which firms compete, necessitating continuous adaptation. The diffusion of technology and internationalization processes act as mediating mechanisms, allowing businesses to navigate demographic pressures by creating new sources of value. For example, digitalization mitigates the constraints of a shrinking labour force by enhancing productivity, while international collaboration compensates for limited domestic demand by accessing global markets. Given the magnitude and persistence of demographic change in Bosnia and Herzegovina, the study of its impact on business models has both academic and practical importance. Academically, it contributes to the broader discourse on how demographic and structural transitions influence economic organization in post transition societies. Practically, it provides insights for entrepreneurs, investors, and policymakers who must design adaptive strategies in a demographically constrained environment. The overarching premise of this research is that demographic change should not be viewed solely as a threat to economic stability, but as a catalyst for innovation, efficiency, and reconfiguration of business practices.

This paper investigates how demographic trends in Bosnia and Herzegovina are influencing the evolution of business models, focusing particularly on sectors most exposed to demographic pressures, including international recruitment, retail, technology, healthcare, and education. It addresses three core research questions: (1) What are the major demographic trends affecting Bosnia and Herzegovina? (2) How do these trends influence market demand, consumer behaviour, and business model design? and (3) In what ways are businesses responding to these demographic shifts, and what are the implications for competitiveness and sustainability?

## **2. LITERATURE REVIEW**

### **2.1 DEMOGRAPHIC TRENDS AND THEIR ECONOMIC IMPACTS**

Demographic change has been widely recognised as a major driver of socioeconomic transformation (Ruhm, 2019). In the context of Bosnia and Herzegovina, several inter linked trends merit attention: population aging, low fertility, migration and urbanization. According to Kadušić, Suljić, and Smajić (2023), Bosnia and Herzegovina's age structure has shifted significantly over recent decades, with the ageing population emerging as one of the salient trends. They find that the average age increased and populations in many municipalities are declining sharply. Similarly, Pabrić and Robinson (2015) demonstrate that Bosnia and Herzegovina has experienced both reduced fertility and sustained emigration, which together contribute to demographic shrinkage and an older age profile. Migration is another critical factor. Kadušić and Suljić (2019) highlight that both forced migration during the war and subsequent voluntary emigration have deeply influenced the demographic structure and labor market of Bosnia and Herzegovina. Urbanization, meanwhile, leads to a concentration of populations in city centres, a trend observed across the Western Balkans. (Obhodaš & Jaganjac, 2019).

The ageing of the population notably affects public finances, for example, Vukić and Knežević (2014) show that pension system sustainability in the Federation of Bosnia and Herzegovina is heavily challenged by demographic change, with pension expenditures projected to rise sharply relative to gross domestic product unless reforms are enacted.

## **2.2 BUSINESS MODELS AND DEMOGRAPHIC CHANGE**

Business models describe how a firm creates, delivers, and captures value (Osterwalder & Pigneur, 2010). Demographic trends influence the value creation process by changing customer segments, consumption patterns, and labour supply. For instance, aging populations may increase demand for healthcare services, yet reduce the size of labour intensive sectors, prompting automation and technology adoption (European Commission, 2022). Urbanization and migration concentrate demand in cities, making digital platforms and logistics more relevant. Firms in countries experiencing demographic decline are often forced to innovate or scale down (Bloom, Canning & Fink, 2019).

In transitional economies, such as Bosnia and Herzegovina, business model innovation is further complicated by institutional and structural constraints (Ejdus & Bajec, 2021). Nonetheless, technology adoption, diaspora engagement, and niche service development are emerging pathways for firms to adapt (Ajanović et al., 2022). Thus, the intersection of demographic change and business model innovation is a fertile area for both theoretical and practical inquiry.

## **3. METHODOLOGY**

This research employs a descriptive and exploratory qualitative approach, relying on secondary data from academic articles, policy reports, and industry analyses. Key demographic data are drawn from national and international sources. To examine business model responses, sector specific reports and investment stories (e.g., DFC, Statista) were reviewed. The sectors selected were international recruitment, retail, technology, healthcare, and education. They were chosen because they represent both supply side and demand-side responses to demographic change in Bosnia and Herzegovina. Through thematic analysis of the literature, the paper identifies patterns of adaptation and innovation in business models, linking them to demographic drivers.

Limitations of the methodology include reliance on available published data, which may lag behind current events, and the absence of primary empirical interviews or surveys. Nevertheless, the approach allows for a grounded overview of how demographic trends are influencing business models in Bosnia and Herzegovina.

## **4. ANALYSIS & DISCUSSION**

### **4.1 DEMOGRAPHIC TRENDS IN BOSNIA AND HERZEGOVINA**

Bosnia and Herzegovina is experiencing pronounced demographic transformation. According to UNECE (2025), the proportion of population aged 65+ is rising, and by 2050 the share could surpass 11% in some forecasts (UNECE, 2025). Experts estimate that the country lost approximately 400,000 people between 2013 and 2024 due to negative natural growth and emigration, with the average age rising from 39.6 to 42.5 years (Sarajevo Times, 2024). Meanwhile, fertility remains low — Pabrić and Robinson (2015) report that the decline in fertility coupled with emigration of working age adults is shaping a shrinking labour base. These trends imply a diminishing pool of young consumers and employees, and growing segments of older adults.

Migration patterns compound the challenge. Kadušić & Suljić (2019) show that post war and economic emigration result in loss of working-age individuals, eroding human capital. Also, the shift from rural to urban settings intensifies spatial concentration of populations. The result: marketplaces become more urban centric, demand for services in metropolitan areas rises, and rural zones face depopulation and shrinking local markets.

## **4.2 BUSINESS MODEL RESPONSES IN SELECTED SECTORS**

### **4.2.1 INTERNATIONAL RECRUITMENT**

The demographic squeeze in Bosnia and Herzegovina, with fewer young workers available and emigration of professionals, has spurred new opportunities in international recruitment. Firms are developing business models that connect Bosnian talent including diaspora to international firms or remote work platforms. For example, diaspora linked enterprises have been supported by a guarantee scheme by the Development Finance Corporation (DFC) to expand financing for start-ups with diaspora ties (DFC, 2023). Similarly, Pakistan based company Pakneftegaz is proposing to the government of Bosnia and Herzegovina and Bosnian entrepreneurs to supply trained young manpower from Pakistan to various sectors of the Bosnian economy. This model leverages Bosnian human capital abroad, turning demographic "loss" into a business "bridge". It reflects a shift from local mass employment models to export oriented talent models.

### **4.2.2 Retail**

In the retail sector, demographic change affects both supply and demand. Urbanization concentrates consumption in cities, while aging populations change product mix and service expectations (e.g., accessibility, smaller-ticket items). At the same time, a diminished youth demographic reduces the size of mass-youth-oriented goods markets. Retailers in Bosnia and Herzegovina are responding by adopting e-commerce, omni-channel strategies, and tailoring product portfolios to older consumers (Statista, 2025). Also, diaspora remittances provide additional purchasing power for certain segments (DFC, 2023). Thus, new business models in retail must reconcile fewer younger customers with more affluent older or diaspora-connected customers.

### **4.2.3 Technology**

Technology offers a potent avenue for firms to adapt to demographic pressures. With labour shortages and an ageing base of workers, firms increasingly turn to automation and digital platforms. In Bosnia and Herzegovina, the IT consulting and implementation service market is growing, particularly in cloud computing and cyber security which is driven by a relatively young, tech-savvy population under 35 (Statista, 2025). While the youth demographic is shrinking, the remaining younger population is highly educated and oriented to technology, making business models based on high-value digital services viable. Moreover, national and international initiatives such as the digitalisation programme by the European Bank for Reconstruction and Development (EBRD) support SMEs to upgrade their digital business models, thereby aligning with demographic realities (Reuters, 2025).

### **4.2.4 Healthcare**

As the population of Bosnia and Herzegovina ages, demand for healthcare services, wellness programmes, and senior care options grows. Kadušić et al. (2023) note that participation in "Healthy Ageing Centres" is associated with higher life satisfaction and social/physical activity

among older adults in Bosnia and Herzegovina, indicating a receptive market for elder care services. Business models are emerging that target older consumers e.g., mobile health, tele-medicine, wellness centres, age-friendly living facilities. The Pakistan-based company Pakneftegaz is offering to deploy trained nurses from Pakistan to support the elderly population in Bosnia and Herzegovina. Firms are shifting from traditional acute care hospital models to preventive, wellness and home care models. This evolution is aligned with the demographic imperative of fewer young patients and more older clients.

#### 4.2.5 Education

Demographic shifts also impact educational services. Declining youth numbers reduce enrolments and place pressure on traditional models of "mass" education. Yet, migration and urbanization increase demand for lifelong learning, upskilling, and adult education, especially as older workers and returning diaspora seek retraining. Obhodaš and Jaganjac (2019) find that demographic change in the Federation of Bosnia and Herzegovina correlates with lower higher education enrolment. It also correlates with lower labour market participation. This implies a need for model innovation. Educational institutions are therefore creating modular, online and flexible learning models, focusing on adult learners or international audiences e.g., diaspora training. This reversal from youth centric schooling to lifelong learning platforms constitutes a response to the demographic environment. The Pakistan-based company Pakneftegaz is offering to develop lifelong learning and upskilling programs for older adults, persons with disabilities, marginalized groups, and students from socio-economically disadvantaged backgrounds.

### 4. 3 IMPLICATIONS FOR BUSINESS MODELS

The analysis above yields several cross cutting implications for how business models must adapt in Bosnia and Herzegovina:

- (i) **Segment re-definition:** Firms must re-segment customers not by traditional youth or mass rural markets, but by older cohorts, urban dwellers, and diaspora linked households.
- (ii) **Value creation redesign:** As supply of young labour constrains certain types of businesses, value creation shifts towards automation, digital platforms, or high skill services.
- (iii) **Delivery optimisation:** Urbanisation enables logistics and location based services, but rural depopulation requires more flexible delivery for example e-commerce, remote services.
- (iv) **Revenue model innovation:** With fewer large youth markets, firms may shift to subscription, service oriented, or international export models.
- (v) **Ecosystem alignment:** Business models increasingly rely on connecting with diaspora, leveraging remittances, and using international networks, as in the recruitment and technology sectors.

These adaptations reflect a broader trend. Demographic change is not just a macro challenge, but a micro business opportunity. Firms that recognise and incorporate demographic signals into their business model design may gain competitive advantage.

### 5. FINDINGS

Several findings emerge from the research:

- (i) Demographic trends in Bosnia and Herzegovina are deep and accelerating. These trends include population aging, declining fertility, migration, and urbanization. (Kadušić et al., 2023; Kadušić & Suljić, 2019; UNECE, 2025).

(ii) These demographic shifts are altering market demand. For example, there are more older consumers and fewer youth. They are also affecting labour supply, leading to a shrinking working-age population. Additionally, these shifts influence spatial patterns, such as urban concentration and rural decline.

(iii) Business models across sectors are adapting. Recruitment firms engage the diaspora. Retail firms adopt e-commerce and older-consumer-oriented offerings. Technology firms exploit a tech-savvy younger minority. Healthcare firms pivot to wellness and senior care. Education firms move towards lifelong learning and adult retraining.

(iv) The success of these business model adaptations depends on how well firms align with demographic realities. This involves re-segmenting customers, redesigning value creation, and leveraging new delivery channels.

(v) At a strategic level, firms in Bosnia and Herzegovina must be especially attentive to demographic indicators, because the demographic environment is comparatively volatile relative to many Western economies. For example, negative natural growth and emigration threaten workforce size and domestic market scale (Sarajevo Times, 2024).

## **6. CONCLUSION AND RECOMMENDATIONS**

In conclusion, demographic trends in Bosnia and Herzegovina represent both challenge and opportunity. For businesses in the recruitment, retail, technology, healthcare, and education sectors, the imperative is clear: adapt business models to reflect shifting population structures. Firms that ignore ageing populations, migration patterns, or urbanisation risk mis-positioning their offerings and wasting resources.

### **6.1 RECOMMENDATIONS FOR BUSINESS PRACTITIONER**

(i) Conduct demographic segmentation analyses internally (age composition, migration status, urban/rural location) and tailor products/services accordingly.

(ii) Prioritise digitalisation and automation to offset shrinking working age labour supply and to serve geographically dispersed customers including diaspora.

(iii) Explore partnerships with diaspora networks and export oriented models to overcome domestic market shrinkage.

(iv) For sectors affected by ageing, such as healthcare and consumer goods, develop age-friendly product and service lines. Focus on wellness and maintenance business models rather than one-off high volume goods.

(v) For education and training firms, pivot towards modular, online, flexible lifelong learning models targeting adult learners and returning diaspora.

### **6.2 RECOMMENDATIONS FOR POLICY MAKERS**

(i) Encourage data infrastructure and demographic monitoring, so firms can track and adapt to changes.

(ii) Support incentives for businesses that serve older consumers, rural-to-urban migrants, and diaspora linkages. For example, tax breaks, digital grants.

(iii) Facilitate public private partnerships that align business innovation with demographic policy. For example, digital health programmes, remote work hubs).

(iv) Support efforts to reverse negative demographic trends which will ultimately benefit business viability. For example fertility incentives, return migration programmes.

The case of Bosnia and Herzegovina illustrates how demographic change is not merely a background trend but a strategic force shaping business models. Firms that proactively integrate demographic insights into their design of value creation, delivery, and capture stand to thrive in a rapidly evolving environment.

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