Submission Date:
22.10.2024
Acceptance Date:
20.01.2025
Publication Date:
28.03.2025

To cite this article: Tayeh, A. & Balcı, Y. (2025). Fostering innovative entrepreneurship for sustainable economic development in Türkiye by transforming education and social attitudes. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi İnovasyon ve Girişimcilik Özel Sayısı, 24*(Special Issue), 1-28. doi: 10.46928/iticusbe.1571687

FOSTERING INNOVATIVE ENTREPRENEURSHIP FOR SUSTAINABLE ECONOMIC DEVELOPMENT IN TÜRKİYE BY TRANSFORMING EDUCATION AND SOCIAL ATTITUDES

Research

Adel Tayeh
Corresponding Author
Independent Researcher
adel.tayeh@me.com
Yusuf Balcı
İstanbul Ticaret University
ybalci@ticaret.edu.tr

Adel Tayeh is a telecommunications professional with a strong entrepreneurial record. He holds degrees in Electrical Engineering (B.Sc.), Neuroscience (M.Sc.), and Economics (MA-OG). He is an alumnus of Harvard Business School's OPM program. He is experienced in integrating technology across various industries and fostering innovation.

Yusuf Balcı is Professor of Economics and the Director of the Centre for Leadership and Entrepreneurship at İstanbul Ticaret University. In addition to academic work, he is currently the Chairman of the Board of the Turkish Trade Bank and Member of the European Committee of Social Rights (Council of Europe).

Fostering Innovative Entrepreneurship for Sustainable Economic Development in Türkiye by Transforming Education and Social Attitudes

Adel Tayeh
adel.tayeh@me.com
Yusuf Balcı
ybalci@ticaret.edu.tr

Abstract

This paper investigates the root causes of Türkiye's persistent economic challenges, focusing on the interplay between historical events, social dynamics, and structural barriers to innovation. Using data from the Global Entrepreneurship Monitor (GEM), it explores Türkiye's reliance on low-value goods, dependence on foreign capital, and slow transition to an innovation-driven economy. Drawing on Schumpeter's theory, which links low innovation to low-profit goods, the study analyzes barriers to innovative entrepreneurship, particularly in education and cultural norms. The study employs the GEM framework to assess Türkiye's 13 Entrepreneurial Framework Conditions (EFCs). Using GEM's Adult Population Survey (APS) and National Expert Survey (NES), it examines entrepreneurship stages, finance, policy, infrastructure, education, and cultural attitudes. Data from GEM, academic research, and government sources provide insights into barriers that hinder innovation and economic growth. Findings inform strategic recommendations for fostering an innovation-driven economy in Türkiye. Türkiye ranks low in global innovation and entrepreneurship indices, placing 39th out of 132 countries in the Global Innovation Index (GII, 2023) and 35th out of 50 in the GEM National Entrepreneurship Context Index (NECI, 2021). Weaknesses in Entrepreneurial Education at the School Stage (2.06/9) and Cultural and Social Norms (3.68/9) highlight gaps that hinder innovation. This produces low-value goods production, limited domestic savings, and high foreign capital dependence. This study uniquely applies GEM's EFCs to identify structural barriers to entrepreneurship in Türkiye. By linking historical, economic, and social factors, it offers a novel perspective beyond short-term policy fixes. It provides insights for policymakers and stakeholders seeking to foster a resilient, innovation-driven economy.

Keywords: Entrepreneurship, innovation, economic development, education, social values.

JEL Code: M13, L26, O310, O10, I25, A13

Türkiye'de Sürdürülebilir Ekonomik Kalkınma İçin Eğitim ve Sosyal Tutumları Dönüştürerek Yenilikçi Girişimciliğin Teşviki

Özet

Bu çalışma, Türkiye'nin süregelen ekonomik sorunlarının temel nedenlerini araştırmakta; tarihsel gelişmeler, toplumsal dinamikler ve yenilikçiliğe yönelik yapısal engeller arasındaki ilişkiye odaklanmaktadır. Global Girişimcilik Monitörü (GEM) verileri kullanılarak, Türkiye'nin düşük katma değerli ürünlere ve yabancı sermayeye bağımlılığı ile yenilik temelli bir ekonomiye geçişte yaşadığı yavaşlatıcı faktörler analiz edilmektedir. Schumpeter'in kuramından hareketle, düşük yenilik kapasitesinin düşük kârlı ürünlerle ilişkisi ortaya konmakta; özellikle eğitim sistemi ve kültürel normlar çerçevesinde yenilikçi girişimciliğin önündeki engeller incelenmektedir. Çalışma, Türkiye'nin 13 Girişimcilik Çerçeve Koşulu'nu (Entrepreneurial Framework Conditions – EFC) değerlendirmek amacıyla GEM çerçevesini kullanmaktadır. GEM'in Yetişkin Nüfus Araştırması (APS) ve Ulusal Uzman Araştırması (NES) verileri üzerinden girişimcilik aşamaları, finansmana erişim, politika, altyapı, eğitim ve kültürel tutumlar analiz edilmektedir. GEM verileri, akademik ve resmi kaynaklarla birlikte kullanılarak, yenilikçiliği ve ekonomik büyümeyi sınırlayan yapısal faktörler ortaya konmaktadır. Bulgular, Türkiye'de yenilik odaklı bir ekonomi inşası için stratejik öneriler geliştirilmesine katkı sağlamaktadır. Türkiye, küresel inovasyon ve girişimcilik endekslerinde orta-ön sıralarda yer almaktadır. Küresel İnovasyon Endeksi'nde (GII, 2023) 132 ülke arasında 39'uncu; GEM Ulusal Girişimcilik Bağlam Endeksi'nde (NECI, 2021) ise 50 ülke arasında 35'inci sıradadır. Okul düzeyindeki girişimcilik eğitimi (2,06/9) ile kültürel ve toplumsal normlar (3,68/9) alanlarındaki zayıflıklar, yenilikçiliği engelleyen temel eksiklikleri yansıtmaktadır. Bu durum, düşük katma değerli üretimi, sınırlı yurtiçi tasarrufları ve yüksek düzeyde yabancı sermaye bağımlılığını beraberinde getirmektedir. Bu çalışma, GEM'in çerçeve koşullarını Türkiye bağlamında kullanarak yapısal girişimcilik engellerini ortaya koymakta ve bu yönüyle özgün bir yaklaşım sunmaktadır. Tarihsel, ekonomik ve toplumsal unsurları bütüncül biçimde ele alarak kısa vadeli politika çözümlerinin ötesine geçmekte; yenilik temelli ve dirençli bir ekonomi için politika yapıcılar ile paydaşlara yönelik kapsamlı çıkarımlar sunmaktadır.

Anahtar Kelimeler: Girişimcilik, inovasyon, ekonomik kalkınma, eğitim, sosyal değerler.

JEL Kodu: M13, L26, O310, O10, I25, A13

Introduction

Joseph Schumpeter, in his seminal work "The Theory of Economic Development," emphasized that entrepreneurs are key to driving innovation in businesses, making them more competitive and profitable. This innovation helps the economy grow and develop by introducing new products, methods, and structures. Entrepreneurs who succeed may move up in society and improve their status (Schumpeter, 1934). Entrepreneurs need to innovate to survive; otherwise, they risk failure, leading to more competition. Businesses adapt better to innovation and create jobs, boost productivity, and economies that support innovation entrepreneurship and changes improve people's lives (OECD, 2015). Although governments have many challenges, entrepreneurs who start successful businesses contribute to a more prosperous and sustainable future. Entrepreneurial innovation has a crucial positive impact on the national competitive advantage, as economist William Baumol (2002) highlighted. Innovations like the electronic calculator, the turbojet engine, and biotechnology are examples of how breakthroughs have shaped industries and improved competitiveness over time. However, the level and type of entrepreneurial innovation can vary significantly depending on the country or region. This means that context, such as the economic environment, government support, or cultural factors, strongly influences how and where entrepreneurial activities thrive (Autio, 2014). Despite the difficulties, entrepreneurship has the power to bring new business models and ways of living that help both individuals and society (GEM, 2022). Türkiye is currently transitioning from an economy focused on efficiency to one driven by innovation, according to the WEF's GCR (Schwab, 2013). This shift marks a move towards more advanced economic practices that rely on new technologies, creativity, and innovation (GEM, 2019). However, Türkiye's competitiveness is ranked at 61st among 140 countries, according to the World Intellectual Property Organization GII (WIPO, 2023), showing a gap in commitment to fostering global innovation practices that are needed for this transition. The paper looks at Türkiye's position in global entrepreneurship rankings and introduces the GEM model. According to the GEM (2022) report, Türkiye ranked 35th out of 50 countries in different countries. To understand the environment and conditions for entrepreneurship in NECI (2021), this index measures the innovative entrepreneurship ecosystem and its context in Türkiye; this study will use the GEM,

which stands as the world's most comprehensive and ongoing study of entrepreneurial dynamics. The findings from these extensive surveys have a crucial impact on entrepreneurship policy development in Türkiye. This data-driven approach ensures that entrepreneurship-supporting policies are both effective and adaptive to local and global challenges.

Evaluation of Türkiye's Economic Growth Stage

GDP per capita is the most popular and simple indicator of growth that will be useful and functional in terms of the subject of the paper. Türkiye's GDP per capita reached $11,938.8 in 2023 according to the World Bank data (World Bank, 2024). Given this data, we can benefit from the classification and evaluation of the development stages of Schwab. Schwab (2013) has developed an approach that adopted a move from an efficiency-based phase to one driven by innovation for the classification of development. His approach categorizes countries into three stages of economic growth: "factors-driven economies," "efficiency-driven economies," and "innovation-driven economies," with two transitions between stages. In the first stage, "factors-driven economies," countries compete by producing raw materials or simple products that don't add much value. In the second stage, countries enhance their production processes and train workers to use new technologies, enabling them to grow by producing more at lower costs and targeting larger markets. At this stage, foreign investments increase, and entrepreneurship decreases as individuals prefer stable employment in large companies. In the final stage, "innovation-driven" economies, support for entrepreneurship becomes crucial, particularly in technology and communication sectors. Numerous small and medium-sized businesses emerge, focusing on innovation and high growth potential (Schwab, 2013). This paper presents strategies to accelerate Türkiye's transition to an innovation-driven economy with reliance on foreign investment. Key areas include better entrepreneurial education and evolving social norms to create a culture of innovation and a supportive ecosystem vital for Türkiye's economic change.

Türkiye's Competitiveness Rank

Türkiye's WEF Global Competitiveness Index ranking of 61st among 140 countries (GCR, 2019) highlights the nation's position in the global competitiveness landscape.

Prior to 2018, the GCI assessed countries based on 12 key factors, emphasizing institutions, infrastructure, macroeconomic environment, health, primary education, efficiency, and market size. In 2018, the WEF updated the GCI to "GCI 4.0," shifting focus to innovation, business sophistication, and the adoption of information and communication technologies (ICT). This updated framework reflects the increasing importance of technological advancements and digital transformation in driving economic growth and competitiveness. Türkiye's lower ranking underscores the need for significant improvements in areas such as innovation, technological readiness, and business sophistication. To achieve these goals, Türkiye should prioritize innovative entrepreneurship, entrepreneurial education, and social norms and attitudes that foster a culture of risk-taking, creativity, and innovation. By promoting innovative entrepreneurship, Türkiye can encourage the development of new businesses, products, and services that drive economic growth and create jobs. Entrepreneurial education should be integrated into the education system to equip young people with the skills and knowledge needed to start and run successful businesses. Additionally, fostering positive social norms and attitudes towards entrepreneurship can help to reduce barriers to entry and encourage individuals to pursue entrepreneurial ventures (GCR, 2019).

Table 1. GCI Sub-indices

Factors-driven economies - Basic	Efficiency-driven economies	Innovation-driven economies
1-Institutions	5-Health	11-Business Dynamism
2- Infrastructure	6-Skills	12- Innovation Capability
3-ICT Adoption	7-Product Market	
4-Macroeconomic Stability	8-Labor Market	
	9-Financial System	
	10-Market Size	

Table 1 outlines the key factors emphasized by the new version of the GCI. These factors include the adoption of Information and Communication Technologies (ICT), skills development, and innovation capabilities. By prioritizing these areas, countries can better adapt to the rapidly changing technological and economic landscape of the 21st century.

Türkiye's Global Competitiveness Index (GCI) ranking

By 2019, Türkiye ranked 61st among 140 countries in the GCI ranking published by the WEF. From 2008 to 2019, Türkiye's GCI ranking fluctuated significantly, as shown in Fig. 1. In 2009, Türkiye reached an all-time high of 63 in the GCI rankings, indicating a decline in competitiveness. However, in 2013, Türkiye achieved a record-low ranking of 43, signaling its highest competitiveness. These fluctuations reflect the dynamic economic and political landscape in Türkiye during this period. Factors such as economic reforms, political stability, and technological advancements have significantly impacted the country's competitiveness.

To improve its global competitiveness, Türkiye should prioritize policies that foster innovation, entrepreneurship, and human capital development. By investing in education, research, and infrastructure, Türkiye can enhance its technological capabilities and attract foreign investment. Additionally, implementing structural reforms to improve governance, reduce corruption, and streamline regulations can create a more conducive business environment. By addressing these challenges and capitalizing on its strengths, Türkiye can improve its global competitiveness and achieve sustainable economic growth.

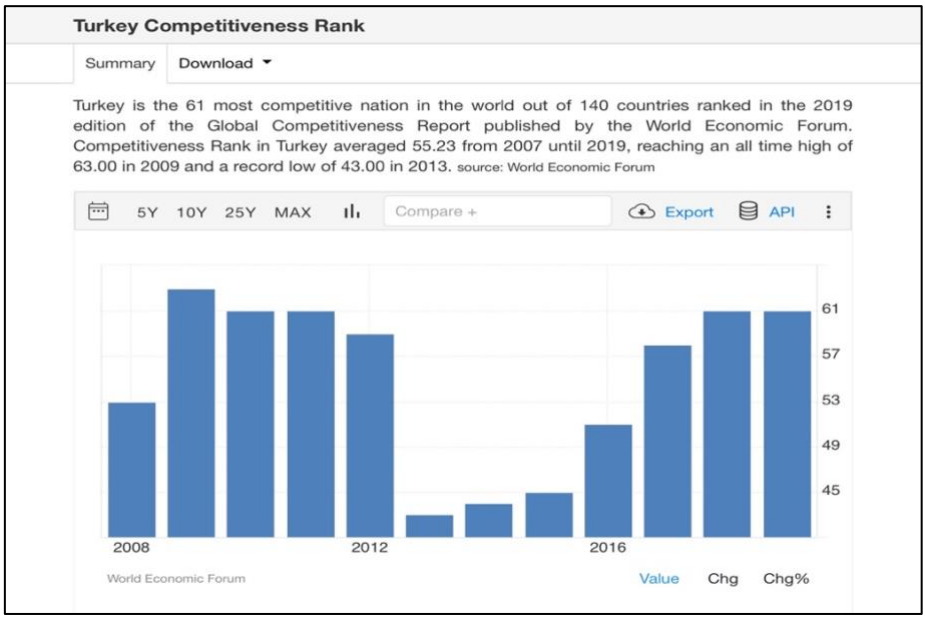

Figure 1. Türkiye Competitiveness Rank
Source: GCR (2019)

Figure 1 illustrates Türkiye's fluctuating GCI ranking between 2008 and 2019. In 2019, Türkiye secured the 61st position among 140 countries. The peak of competitiveness occurred in 2013 at rank 43, while the lowest point was reached in 2009 at rank 63.

Türkiye's Innovation Rank

Türkiye ranks 39th out of 132 countries in the WIPO Global Innovation Index GII (2023). This comprehensive index assesses countries based on their innovation capabilities and outputs, encompassing two primary components: the Innovation Input Sub-Index and the Innovation Output Sub-Index. For more detailed information, refer to Fig. 2 for more details.

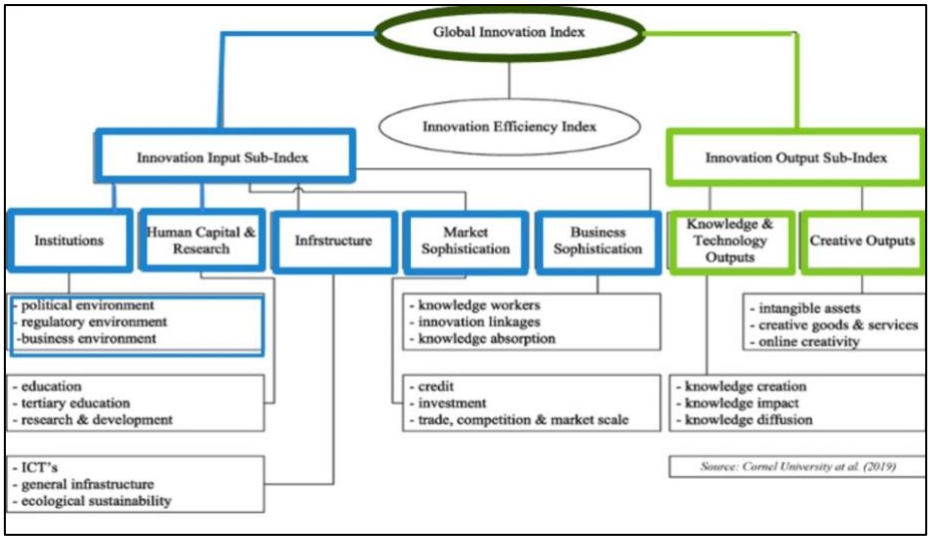

Figure 2. Global Innovation Index Details
Source: Cornell University (2019)

Figure 2 shows The Global Innovation Index (GII) components. It is divided into two main sub-indices: the Innovation Input Index and the Innovation Output Index. The Innovation Input Index includes Institutions, Human Capital and Research, Infrastructure, Market Sophistication, and Business Sophistication. The Innovation Output Index includes Knowledge and Technology Outputs, and Creative Outputs. Each of these pillars comprises various indicators that comprehensively assess a country's innovation capabilities and performance. This structure allows for detailed analysis and comparison of innovation ecosystems across different countries.

Türkiye's NECI 2021 Entrepreneurship Rank

Türkiye was ranked 35th out of 50 countries in the (NECI, 2021), which evaluates the entrepreneurial context in various nations. This ranking highlights the challenges Türkiye faces in fostering entrepreneurship, particularly in education and social norms. To understand the factors affecting and hindering Türkiye's entrepreneurial capacity, a deeper analysis is needed. Utilizing frameworks like the GEM provides a data-driven method to identify barriers and opportunities within Türkiye's entrepreneurial ecosystem. By addressing these areas with targeted policies, Türkiye can create an environment that supports entrepreneurs and stimulates economic growth. The next chapter will explore the GEM modeling process and its data collection methodology, offering insights into how these tools can enhance Türkiye's entrepreneurial context (NECI, 2021).

The GEM Modelling and Surveys

The GEM is the most thorough and ongoing study of entrepreneurship worldwide. GEM gives important insights into entrepreneurship, from the early stages to established companies. This research is a valuable tool for policymakers, educators, researchers, and business leaders who want to understand their national entrepreneurial contexts. A detailed overview of its components is in the following paragraphs.

Adult Population Survey (APS) and National Expert Survey (NES)

GEM's approach includes two key national surveys each year. The first one, APS, randomly selects over 2,000 adults in each country to gather essential data on entrepreneurial participation, business activities, attitudes, motivations, and skills. The second one, the NES, looks at broader economic, social, cultural, and political conditions that influence entrepreneurship. These surveys help GEM understand what encourages or hinders entrepreneurship in each country. The results are important for creating policies to support entrepreneurship and help stakeholders make informed decisions to boost entrepreneurial growth in various environments (GEM, 2022).

GEM Entrepreneurial Processes and Cycle

GEM categorizes entrepreneurs based on their stage of business development:

Nascent Entrepreneurs: Individuals who have invested resources to start a business but have not yet paid wages for three months.

New Business Owners: Entrepreneurs who have paid wages for at least three months but less than 42 months.

Established Business Owners: Business owners who have been operating their businesses and paying salaries for at least 42 months. (GEM, 2022).

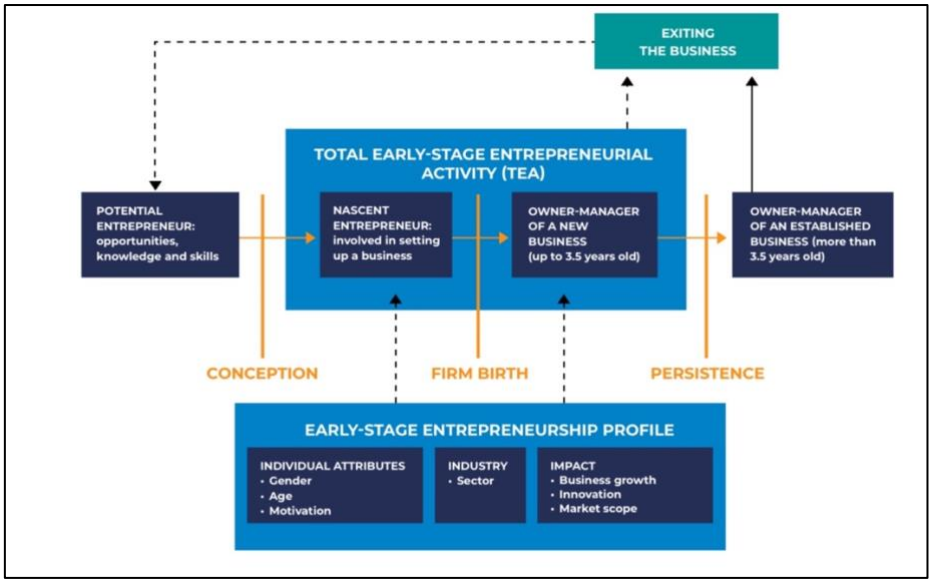

Figure 3. GEM Entrepreneurial Processes and Cycle
Source: GEM Report (2021/2022)

The main measure of GEM is Total Early-stage Entrepreneurial Activity (TEA). This shows the percentage of adults who are starting or running a new business, including both Nascent Entrepreneurs and New Business Owners (GEM, 2022).

GEM Entrepreneurial Framework Conditions EFCs

GEM identifies 13 National Entrepreneurial Framework Conditions (NEFCs) that can either enhance or hinder new business creation in each economy. These conditions are crucial for understanding the entrepreneurial environment and are used to assess the ease or difficulty of starting new businesses. Each condition represents a distinct component in the model, showcasing its role and impact on the entrepreneurial ecosystem. Together, these conditions provide a comprehensive overview of the

environment in which entrepreneurs operate, highlighting areas of strength and potential improvement (GEM, 2022).

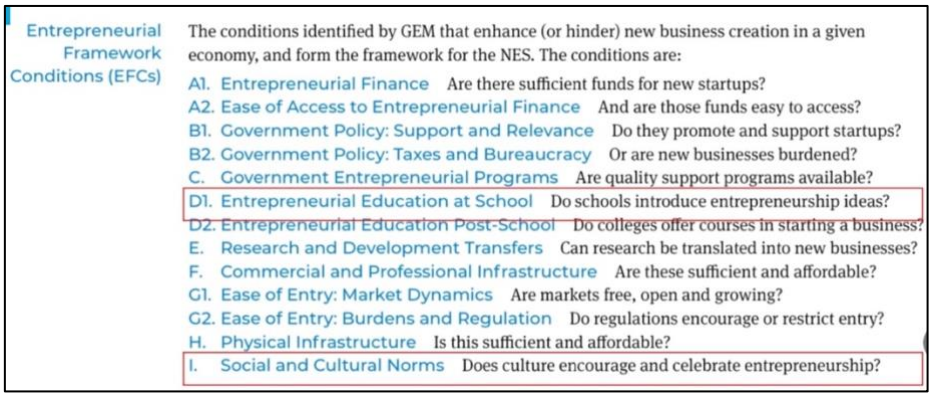

Figure 4. GEM Entrepreneurial Framework Conditions EFCs
Source: GEM Report (2022/2023)

Figure 4 illustrates the 13 NEFCs identified by the GEM as crucial factors influencing the creation and growth of new businesses within an economy. These conditions include A. Entrepreneurial Finance, B. Government Policies, C. Government Entrepreneurship Programs, D. Entrepreneurial Education at both the School and Post-School Stages, E. R&D Transfer, F. Commercial and Professional Infrastructure, G. Internal Market Dynamics, Internal Market Openness, H. Physical Infrastructure, I. Cultural and Social Norms, Social and Cultural Support (GEM, 2022).

The GEM Conceptual Framework

The GEM Conceptual Framework underscores the complex interplay between an entrepreneur's social environment, personal attributes, entrepreneurial activities, and business outcomes. Societal norms, networks, and institutional support systems are pivotal in shaping the entrepreneurial landscape, guiding entrepreneurs' actions, and influencing their social context. For instance, cultures that foster risk-taking behavior can encourage innovation and entrepreneurship, while risk-averse cultures may suppress entrepreneurial spirit and reduce new business formation. The social environment also dictates how entrepreneurial activities are carried out. Cultures prioritizing collaboration and teamwork can provide a supportive community that encourages resource-sharing and knowledge exchange, vital for startups. Conversely, environments emphasizing individual achievement may impede business growth due

to limited access to critical resources like expertise and financial support. Additionally, the broader social context influences key entrepreneurial decisions, including industry choice, innovation level, and overall ambition. Societal needs or market conditions may drive entrepreneurs toward innovation and high-growth opportunities, while cultural preferences for traditional models may limit creativity and disruptive innovation. Societal attitudes toward entrepreneurship play a crucial role in encouraging high-impact ventures or conservative business models. These social, cultural, and institutional factors significantly impact business outcomes, shaping metrics like job creation, income generation, and overall economic value. A thriving social environment that fosters innovation and collaboration can lead to high-growth startups contributing substantially to the economy and creating a higher socioeconomic impact (GEM, 2022).

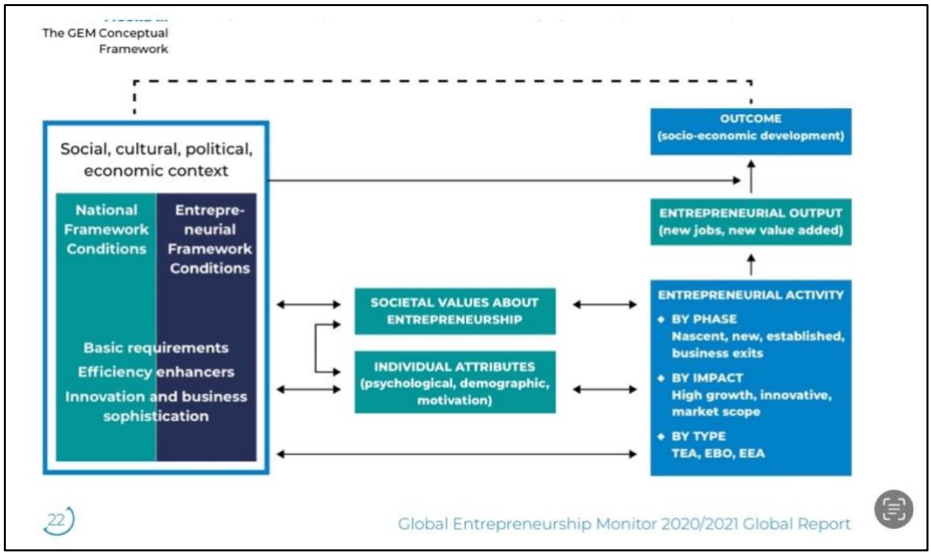

Figure 5. The GEM Conceptual Framework
Source: GEM Report (2021/2022)

Figure 5 shows the GEM Conceptual Framework that highlights the interconnectedness of the social environment, individual attributes, entrepreneurial activities, and business outcomes. Societal norms, networks, and institutional support systems shape the entrepreneurial landscape and influence the level of entrepreneurial output (GEM, 2022).

Method and Data Collection

This study uses the GEM framework as the methodology to assess Türkiye's entrepreneurial ecosystem and context. The GEM EFCs will evaluate factors such as national policies, finance access, and cultural attitudes. The GEM Entrepreneurial Process and Cycle will measure entrepreneurial activities at different stages, from nascent to established businesses. Data will be sourced from recent GEM reports, academic research, and government publications to ensure a comprehensive analysis of the entrepreneurial landscape (GEM, 2022).

Method

To assess the GEM ecosystem in Türkiye, this study will use the GEM Entrepreneurial Process and Cycle, GEM EFCs, and the GEM Conceptual Framework. The methodology involves several crucial steps:

We will look at the EFCs to understand the factors impacting entrepreneurship in Türkiye. These factors include national policies, financial support, education and training, market dynamics, and cultural attitudes toward entrepreneurship. By examining these conditions, we can pinpoint the strengths and weaknesses of the entrepreneurial environment.

To assess entrepreneurial activity levels in Türkiye as per the GEM Entrepreneurial Processes and Cycle, the study will focus on Total TEA using GEM's processes and cycles. This includes Nascent Entrepreneurs starting new businesses and New Firm Entrepreneurs managing businesses for over three months but less than 42 months. The analysis will also look at Established Business Ownership (EBO), where businesses are over 3.5 years old, and will recognize individuals exiting businesses as a key phase in the entrepreneurial journey. This approach aims to provide insights into the dynamics of entrepreneurship in Türkiye and identify factors influencing success at different stages (GEM, 2022).

Data Collection

Data collection will primarily involve the most recent GEM reports derived from the APS and NES, which offer both quantitative and qualitative insights into entrepreneurial activities, attitudes, and behaviors in Türkiye. These surveys will

provide up-to-date data on the factors influencing entrepreneurship, including societal norms, market dynamics, and government support. Additionally, secondary data from academic research and governmental reports will be incorporated to offer a historical perspective on the challenges faced by entrepreneurs in Türkiye. This combined approach will help identify the root causes of barriers in the entrepreneurial ecosystem, enabling a deeper understanding of the factors hindering progress and offering actionable steps and policies for future improvement.

Root Cause Analysis

To identify the root causes of issues affecting the entrepreneurial ecosystem in Türkiye, the study will delve into existing literature and research papers that address the barriers to entrepreneurship. This analysis will include examining the EFCs with low scores. The goal is to identify structural barriers and provide actionable insights for creating effective policies to nurture entrepreneurship in Türkiye.

Findings

The spider chart for Türkiye's (2021) GEM EFCs reveals the factors shaping the country's entrepreneurial ecosystem. The highest score is for "Internet market dynamics," indicating strong Internet accessibility for entrepreneurs. In contrast, "Entrepreneurial Education at the School Stage" and "Cultural and Social Norms" received low scores, showing gaps in early entrepreneurship education and societal support. These insights highlight the need for targeted improvements in these areas to enhance Türkiye's entrepreneurial environment (NECI, 2021).

Türkiye's GEM 13 Entrepreneurial Framework Conditions – (2021) Spider Chart

Figure 6's spider chart shows the different factors affecting Türkiye's entrepreneurial ecosystem, with scores for areas like finance, government policies, education, and infrastructure. The best score is in "Internet market dynamics," meaning that Internet access is very good for entrepreneurs in Türkiye. The lowest scores are in "Entrepreneurial Education at the School Stage" (2.06 out of 9), showing that entrepreneurship education in schools is lacking, and "Cultural and Social Norms" (3.68 out of 9), indicating that societal attitudes may not fully support entrepreneurship. These areas need improvement to create a stronger entrepreneurial environment in the country (NECI, 2021).

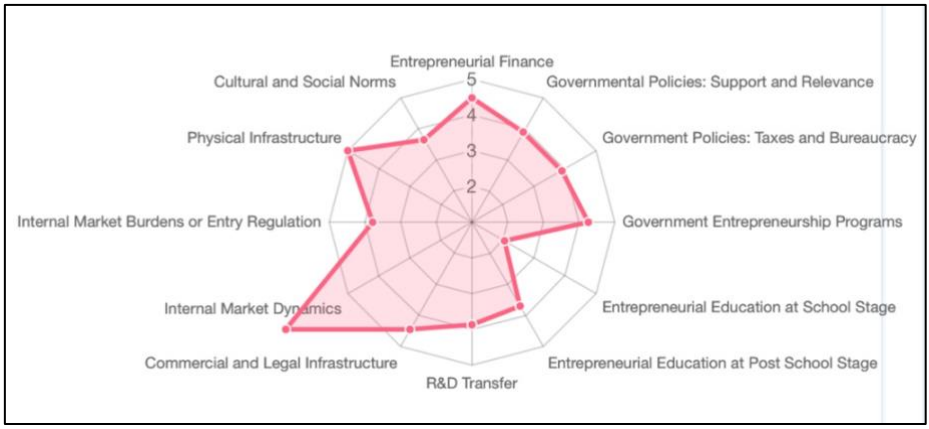

Figure 6. Türkiye's EFCs- 2021 Spider Chart
Source: GEM Report (2021/2022)

Figure 6's spider chart illustrates the various factors influencing Türkiye's entrepreneurial ecosystem, displaying scores across key areas such as finance, government policies, education, and infrastructure.

Levels of Entrepreneurial Activity in Türkiye Before and After COVID-19

Table 3 shows changes in entrepreneurial activity in Türkiye before and after the COVID-19 pandemic, based on the GEM APS 2021 report. Nascent entrepreneurship rose from 7.4% in 2018 to 10.8% in 2021, suggesting more people started businesses in the post-pandemic era due to economic challenges and market shifts. However, new business ownership dropped from 7.1% to 5.4%, indicating fewer businesses could sustain operations long-term. Total TEA slightly increased from 14.2% to 15.7%, showing an overall rise in entrepreneurial efforts. Established business ownership (EBO) rose from 8.7% to 11.0%, implying some businesses transitioned to stable stages despite challenges. The business exit rate increased from 5.2% to 8.0%, indicating more business closures likely due to the pandemic's economic impact (GEM, 2022).

Table 2. Levels of Entrepreneurial Activity in Türkiye Before and After COVID-19

Table 3.1. Levels of Entrepreneurial Activity in Turkey Before and After COVID-19 (%)

Phases Of Entrepreneurship in Adult Population (%)	Before Covid-19 2018	After Covid-19 2021
Nascent Entrepreneurship Rate	7,4	10,8
New Business Ownership Rate	7,1	5,4
Total early-stage Entrepreneurial Activity (TEA)	14,2	15,7
Established Business Ownership (EBO)	8,7	11,0
Business Exit Rate	5,2	8,0

Source: GEM APS 2021

Table 2 highlights the changes in entrepreneurial activity in Türkiye before and after the COVID-19 pandemic, as reported in the GEM APS (2021).

TEA Rate and GDP per capita

Figure 7's graph shows the link between the Total TEA rate and real GDP per capita for various countries in 2021. Türkiye, highlighted on the chart, has a TEA rate of around 15% and a GDP per capita of roughly $33,000 (in PPP terms). This indicates Türkiye has a relatively high entrepreneurial activity compared to its economic output per capita. Similar GDP per capita countries, like Italy and Portugal, have lower TEA rates, suggesting Türkiye's entrepreneurial ecosystem is more dynamic than many of its peers. However, despite the high TEA, challenges may exist in converting this activity into long-term economic growth, especially higher GDP outputs, as seen in countries with lower TEA but higher GDP per capita. This gap highlights areas for improvement in supporting and sustaining new business ventures in Türkiye (GEM, 2022).

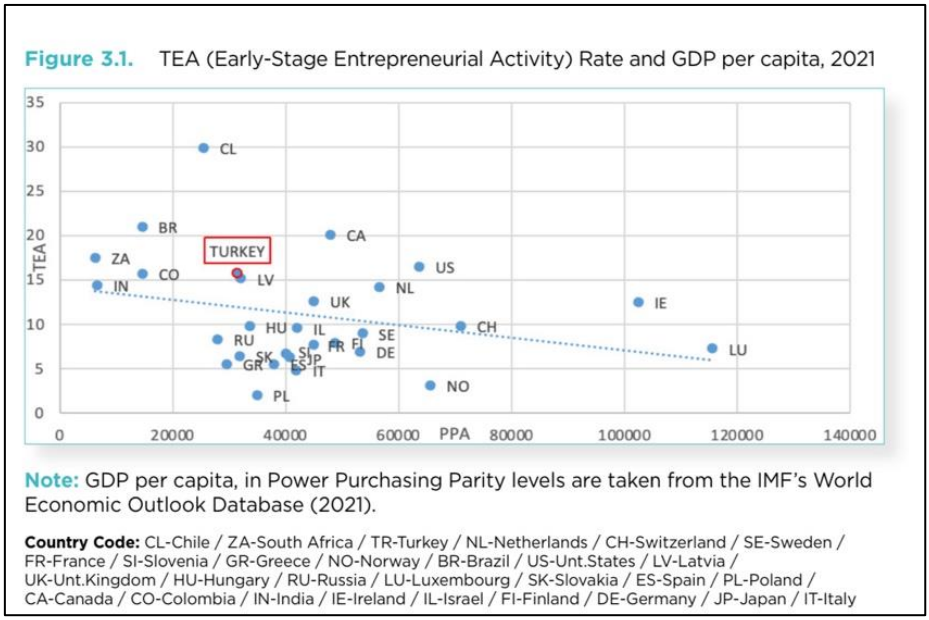

Figure 7. TEA Rate and GDP per capita
Source: GEM Report (2021/2022)

Figure 7 illustrates the relationship between the Total TEA rate (Total Early-Stage Entrepreneurial Activity rate) and real GDP per capita for various countries in 2021.

Türkiye's Innovative Entrepreneurship Challenges: Entrepreneurial Education at School Capacities and Hindering Social and Cultural Norms

Entrepreneurship, like labor and capital, is a valuable yet limited resource in the economy, driven by cultural and financial influences. Globally, Türkiye ranks average in entrepreneurship, a trend that extends to innovation and innovative entrepreneurship. Despite being part of the world's rich GDP, Türkiye scores poorly in innovation capacity (Kalayci et al., 2021).

This review paper on innovative entrepreneurship in Türkiye will use the GEM EFCs and the GEM Conceptual Framework. These tools will help analyze the impact of entrepreneurial education and social and cultural norms on innovative entrepreneurship. By examining these crucial factors, we aim to understand how education, societal norms, and cultural dynamics shape Türkiye's entrepreneurial landscape, providing insights into the elements that drive innovative business ventures.

Social and cultural norms that hinder innovative entrepreneurship

Two factors that hindered entrepreneurship development in Türkiye are the increasing individual wealth based on individual property and a strong preference for state jobs (civil service) (Kalayci et al., 2021).

Historical reasons for negative social and cultural norms.

Following the 1923 population exchange agreement between Türkiye and Greece, approximately 1.2 million Greeks left Anatolia. This migration facilitated the rise of a Muslim-Turkish bourgeoisie aligned with the new regime, which acquired much of the wealth and businesses left behind. Supported by nationalist policies of the Young Turk government, some entrepreneurs benefited from properties vacated by Greeks and Armenians. Despite these advantages, their influence, largely through small and mid-sized businesses, remained modest until after 1950 (Pamuk, 2018).

The departure of Greek and Armenian communities had profound societal impacts. Before the war, these groups were vital to the economy, with their farmers, artisans, traders, and financiers linking Anatolia's rural areas, coastal cities, and European markets. After their exit, the emerging Muslim-Turkish business class, though bolstered by nationalist policies, had limited economic impact until the mid-20th century (Pamuk, 2018).

The Republic sought to create its own entrepreneurial class in the early years of its founding. During this period, there was a concentrated effort to build a self-sufficient economy and industrial base, along with nurturing homegrown entrepreneurs. In 1923, the İzmir Economy Congress laid the foundation for a nationalistic economic approach, encouraging private enterprise with protective policies. The state took steps to ensure the development and support of Turkish entrepreneurs, shifting the focus from minority groups to native citizens. As part of this initiative, the Republic allocated state resources to the emerging elite through government contracts, state partnerships, low-interest loans, access to intermediate goods from public enterprises, and foreign exchange. Between 1923 and 1930, 178 new incorporated companies were created as a result of these efforts (Kalayci et al., 2021).

Entrepreneurial Education at School Capacities

In the NECI (2021), Türkiye received its lowest score in "Entrepreneurial Education at the School Stage," which is 2.06 out of 9. This indicates that the current education system is a significant barrier to fostering innovation and entrepreneurial activity in the country.

The lack of focus on entrepreneurship in early education is seen as a primary factor limiting students' capacity to develop the critical skills needed for innovation and business creation. To address this, it is crucial to implement targeted policies aimed at integrating entrepreneurial thinking and practical skills into the school curriculum, thereby promoting an environment that nurtures innovation from an early stage. Developing such educational reforms would contribute to a more dynamic and competitive entrepreneurial ecosystem in Türkiye.

OECD PISA 2018: Student Performance in Türkiye in Math and Science.

The Programme for International Student Assessment (PISA) is a survey done every three years, checking what 15-year-old students know and how well they can use that knowledge. It looks at their skills in reading, mathematics, and science, and includes an innovative area (like global competence in 2018). PISA also considers the well-being of students, assessing how they feel about themselves and their lives (OECD, 2019) and (PISA, 2018).

Students in Türkiye didn't perform as well as the average students from other countries in reading, math, and science. In math, about 63% of Turkish students reached at least Level 2 proficiency, which means they can understand and apply math concepts in simple situations. However, only 5% of students scored at Level 5 or higher, showing a lower proficiency compared to the average. In science, around 75% of Turkish students reached at least Level 2 proficiency, where they can understand explanations for common scientific phenomena. However, only 2% were top performers at Level 5 or 6, demonstrating a lower proficiency compared to the average. This means that Turkish students may need more support to reach higher levels of proficiency in these subjects (OECD 2019) and (PISA 2018).

How to Develop Entrepreneurial Education at School Capacities: 4C and ACARA Models as Examples

Entrepreneurial education will be explored on the 4C model, “Communication, Collaboration, Critical Thinking, and Creativity”, (Erdisna, Ridwan & Syahputra, 2022). In Australia, the ACARA model emphasizes these skills as essential for students to become successful and independent learners (ACARA, 2012).

4C Learning Model Study

The 4C learning model, as explored in the research by Erdisna (2022), is designed to develop key entrepreneurial competencies in students, especially in digital contexts. The 4C framework focuses on fostering four core skills: Communication, Collaboration, Critical Thinking, and Creativity. These competencies are crucial for success in entrepreneurship and are integrated into educational settings to prepare students for the digital economy.

In their research, the authors implemented the 4C model in an Information System Design Analysis course. The goal was to fulfill academic criteria and motivate students to apply these skills in digital entrepreneurship. A common problem was students developing software to meet course requirements without considering its entrepreneurial potential. To combat this, they employed a 4-D development model—Definition, Design, Development, and Dissemination—proving the 4C model's effectiveness in encouraging digital entrepreneurship. The model received high usability and practicality scores, with 87% of students satisfied, showcasing its success in preparing students to launch IT ventures. By encouraging the development of Communication, Collaboration, Critical Thinking, and Creativity, this model provides a comprehensive approach to preparing students for entrepreneurial success (Erdisna et al., 2022).

The Australian Curriculum, Assessment, and Reporting Authority (ACARA)

The Australian Curriculum, Assessment, and Reporting Authority (ACARA) shown in Figure 8 focuses on developing students' critical and creative thinking skills through a national curriculum. This model integrates these skills across various subjects, emphasizing the need for students to generate, assess, and explore ideas. The curriculum encourages active participation, particularly in open-ended investigations

in subjects like mathematics, which enhances students' problem-solving capabilities. Teachers serve as facilitators, guiding discussions and fostering a learning environment where students feel secure to take risks, think creatively, and engage deeply with content. Ultimately, this approach aims to prepare students for lifelong learning and adaptability (Lucas, 2022).

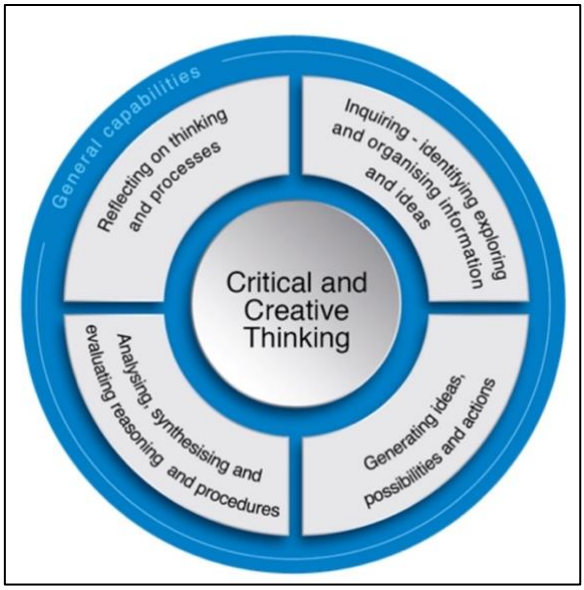

Figure 8. ACARA Model
Source: Lucas (2022)

In summary, a constructivist teaching perspective has the potential to help students develop critical and creative thinking skills, preparing them for lifelong learning beyond the classroom (Sarah Sanders, 2016).

Conclusions and Recommendations

This chapter summarizes the findings and provides practical recommendations based on the analysis of Türkiye's entrepreneurial ecosystem. The conclusions highlight the importance of innovative entrepreneurship for sustainable economic growth, the challenges from deep-rooted social norms and oligopolies, and the shortcomings in Türkiye's educational system in developing entrepreneurial skills. The recommendations focus on promoting cultural norms supporting entrepreneurship and entrepreneurial educational reforms to include essential entrepreneurial skills.

Conclusions

The conclusions section sums up key points about Türkiye's entrepreneurial EFCs from the GEM data. It stresses that innovative entrepreneurship is crucial for sustainable economic growth, especially through disruptive tech advancements and higher productivity. It also notes that social norms and wealth concentration limit wider economic participation and entrepreneurial growth. Plus, it points out that Türkiye's education system lacks in developing essential entrepreneurial skills like critical thinking, creativity, and collaboration. These findings suggest a need for specific efforts to support entrepreneurship and long-term economic growth.

Conclusion point 1: Innovative entrepreneurship plays a crucial role in driving economic sustainable growth

Innovative entrepreneurship is key to driving economic growth by enhancing productivity and creating new opportunities. It helps reduce the balance of payments deficit, making the economy more self-sufficient and attractive to foreign investments on favorable terms. By leveraging disruptive technologies like AI, autonomy, and digital advancements, economies can accelerate development, transforming potential negative impacts into growth engines. This strategic use of innovation ensures long-term, sustainable economic growth. Innovative entrepreneurship boosts the technology parameter A(t) in the Solow model, promotes knowledge-driven growth in the Romer model, improves the balance of payments by increasing exports and attracting FDI, and supports sustainable growth by driving high profitability and reinvestment. These models show that innovation not only enhances short-term economic performance but also ensures long-term, sustainable development.

Conclusion point 2: Entrepreneurship Hindering Social Norms and oligopoly problem

In Türkiye, as in many economies, those who inherit substantial property can grow their wealth more easily through ownership. This creates an oligopoly where a small group controls a large portion of wealth, perpetuating inequality and limiting broader economic participation. Conversely, individuals without inherited property often pursue secure civil service careers, seen as stable and prestigious. While these jobs provide economic security, they may deter individuals from engaging in entrepreneurial

activities essential for innovation and growth. This dual dynamic, with property inheritance enabling wealth accumulation for some and civil service employment deterring entrepreneurship for others, poses a challenge in fostering a culture of innovation and business creation. It underscores a significant issue in developing entrepreneurial skills across various socio-economic groups.

The situation in Türkiye deteriorated due to the deliberate and abrupt formation of a Muslim bourgeoisie class. This transition was created by the establishment of a new regime after the collapse of the Ottoman Empire, along with the mass exodus of 1.2 million Greeks from Anatolia. Additionally, the nationalist policies pursued by the Young Turk government played a crucial role in reinforcing this shift, creating a new socio-economic layer.

Conclusion point 3: Türkiye's education system's contribution to developing entrepreneurial attitudes and skills

According to the GEM APS (2021) survey, Türkiye's education system's contribution to developing entrepreneurial skills remains limited, with a score of 2 out of 9. This indicates that schools are not effectively fostering entrepreneurship among students. One key reason is the lack of integration of critical thinking, creative thinking, and other essential skills for entrepreneurship. Without these crucial elements embedded in the curriculum, students are not adequately prepared to think innovatively, work collaboratively, or develop the problem-solving skills necessary for successful entrepreneurship. This gap highlights the need for educational reform to incorporate these competencies and better equip students for entrepreneurial pursuits.

Recommendations

The recommendations section suggests strategies and policies to improve Türkiye's entrepreneurial landscape, drawing on GEM analysis findings. It emphasizes the importance of cultural norms that promote individual responsibility, creativity, and risk-taking, which are essential for cultivating an innovative and entrepreneurial society. The chapter also calls for a thorough entrepreneurial education initiative, incorporating vital skills like communication, collaboration, critical thinking, and creativity into the curriculum.

Develop cultural and social innovative entrepreneurial norms

To create a culture that fosters entrepreneurship and innovation, it's crucial to develop social norms that promote individual responsibility for growth. People should be encouraged to take charge of their development and seek out opportunities instead of waiting for collective efforts. Valuing entrepreneurial risk-taking, creativity, and innovation boosts economic progress. Additionally, encouraging self-reliance and autonomy help individuals pursue their goals independently. Recognizing and celebrating achievements made through personal effort nurtures a mindset of independence and initiative, creating an environment where innovation and entrepreneurship thrive as respected paths to personal and societal growth.

Examples of Strategies for Developing Cultural and Social Innovative Entrepreneurial Norms.

a. National Awareness Campaigns: Launch national campaigns emphasizing the importance of entrepreneurship and innovation for economic growth. These campaigns should highlight successful entrepreneurs and their positive societal impacts, featuring relatable role models to shift societal values towards viewing entrepreneurship as a prestigious career path.

b. Community-Led Entrepreneurial Workshops: Local governments can organize workshops and events bringing together entrepreneurs, students, and the community. These events should focus on hands-on projects that emphasize risk-taking, creativity, and problem-solving, embedding entrepreneurial thinking at the grassroots level.

c. Policy Support for Startups: Provide favorable conditions for startups through policy support such as tax incentives, grants, and mentorship programs for first-time entrepreneurs. Access to financial support and expert advice will foster a culture valuing independence and innovation.

d. Incorporating Entrepreneurship in Social Norms: Leaders from both business and political spheres should champion entrepreneurship as essential to self-reliance. By promoting entrepreneurship in public discussions and policies, society can begin to value individual responsibility, autonomy, and creativity. Acknowledging and celebrating successful ventures can further reinforce this cultural shift.

Develop a successful entrepreneurial education initiative

To create a successful entrepreneurial education program in Türkiye, the government and schools need to focus on teaching key skills like communication, teamwork, critical thinking, and creativity, as outlined in the 4C model. This will be a long-term project, possibly taking over 12 years, and should start by gradually updating the school curriculum to encourage entrepreneurial thinking from a young age. Training teachers is also important so they can inspire students to be innovative and take risks. Partnering with businesses and providing real-world projects will help students use these skills practically. Regular reviews and feedback will ensure the program stays useful and adapts to changing needs.

Examples of Strategies for a Successful Entrepreneurial Education Initiative.

a. Curriculum Overhaul: Redesign the education system by integrating entrepreneurship into every stage of schooling. Introduce entrepreneurial concepts in primary schools and expand them into middle and high schools, with the 4C model (Critical thinking, Communication, Collaboration, and Creativity) as a central theme.

b. Teacher Training and Capacity Building: Implement continuous professional development programs for teachers to equip them with the tools to teach entrepreneurship, innovation, and risk-taking. Encourage fostering a growth mindset in students and creating classroom environments that celebrate experimentation and learning from failure.

c. Partnerships with the Private Sector: Collaboration between schools and the private sector is essential. Businesses can offer mentorship, internships, and practical project opportunities where students can apply their entrepreneurial skills in real-world situations. Private sector input on curriculum development ensures alignment with industry needs.

d. Create a national school entrepreneurship framework to promote entrepreneurship at all school levels, emphasizing digital literacy, creativity, and problem-solving for the future digital economy. Continuously assess its impact and include feedback for improvement. Use online platforms and tools to provide additional resources, like

virtual labs, online mentorship, and global networks, to widen access, especially in remote areas.

Future Outlook

Transforming education and social norms is essential for unlocking innovative entrepreneurship and driving sustainable economic growth in Türkiye. Innovative entrepreneurship can propel the country toward greater self-sufficiency by fostering the creation of high-value products, boosting profitability, and increasing savings. This would, in turn, help Türkiye reduce its dependence on foreign investment, which has long been a challenge to the nation's economic stability.

By cultivating a culture of entrepreneurship through entrepreneurial education reforms and shifting social norms to encourage risk-taking and innovation, Türkiye can better position itself for sustained economic growth. While this transformation will take time, particularly in reshaping attitudes and fostering entrepreneurial mindsets, it is critical for long-term competitiveness. Leveraging models like the GEM will provide essential insights and frameworks, guiding efforts to strengthen the entrepreneurial ecosystem and achieve sustainable success on the global stage.

Disclaimer

The authors declare that the study received no funding. The authors hereby declare that there was no conflict of interest in conducting this research.

References

Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation: The importance of context. *Research Policy, 43*(7), 1097-1108. https://doi.org/10.1016/j.respol.2014.01.015

Baumol, W. J. (2002). *The free-market innovation machine: Analyzing the growth miracle of capitalism*. Princeton University Press.

Cornell University, INSEAD, & World Intellectual Property Organization (WIPO). (2019). https://www.wipo.int/global_innovation_index/en/2019

Schumpeter, J.A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. (R. Opie, Trans.). New Brunswick and London: Transaction Publishers.

Doran, J., McCarthy, N., & O'Connor, M. (2018). The role of entrepreneurship in stimulating economic growth in developed and developing countries. *Cogent Economics & Finance, 6*(1), 1442093. https://doi.org/10.1080/23322039.2018.1442093

Erdisna, E., Ridwan, M., & Syahputra, H. (2022). Developing Digital Entrepreneurship Learning Model: 4-D Competencies-Based for Millennial Generation in Higher Education. *Utaxmax: Journal of Ultimate Research and Trends in Education, 4*(2), 84-100. https://doi.org/10.31849/utamax.v4i2.10081

Farinha, L., Ferreira, J. J. M., & Nunes, S. (2016). Linking innovation and entrepreneurship to economic growth. *Competitiveness Review: An International Business Journal, 28*(4), 451-475. https://doi.org/10.1108/CR-07-2016-0045

Global Entrepreneurship Monitor. (2022). *Global Entrepreneurship Monitor 2021/2022 Global Report*. Retrieved from https://www.gemconsortium.org/report/gem-2021-2022-global-report

Kalayci, I., Aytekin, B., & Soylu, A. (2021). Innovative entrepreneurship in Turkey: Micro and macro perspectives. In C. Cobanoglu, & V. Della Corte (Eds.), *Advances in Global Services and Retail Management* (pp. 1–8). USF M3 Publishing. https://doi.org/10.5038/9781955833035

Kim, J., Castillejos-Petalcorin, C., Park, D., Jinjarak, Y., Quising, P., & Tian, S. (2022, August). *Entrepreneurship and economic growth: A cross-section empirical analysis*. Asian Development Bank. http://dx.doi.org/10.22617/WPS220399-2

Lucas, B. (2022). *A field guide to assessing creative thinking in schools*. https://doi.org/10.13140/RG.2.2.24010.03529

OECD. (2015). *The Future of Productivity.* OECD Publishing. https://doi.org/10.1787/9789264248533-en

OECD. (2019). *PISA 2018 Results (Vol. I): What Students Know and Can Do.* OECD Publishing, Paris.

Schwab, K., & World Economic Forum. (2013). *The Global Competitiveness Report 2013–2014 Full Data Edition.*

Solow, R.M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics, 70*, 65–94.

Stoica, O., Roman, A., & Rusu, V. D. (2020). The Nexus between Entrepreneurship and Economic Growth: A Comparative Analysis on Groups of Countries. *Sustainability, MDPI, 12*(3), 1-19. https://ideas.repec.org/a/gam/jsusta/v12y2020i3p1186-d317512.html

World Bank Data. (2024). https://www.worldbank.org/en/country/turkey/overview

World Economic Forum. (2019). *The Global Competitiveness Report 2019.* Retrieved from https://www.weforum.org/reports/the-global-competitiveness-report-2019

World Intellectual Property Organization. (2023). *Global Innovation Index 2023.* Retrieved from https://www.wipo.int/global_innovation_index/en/2023