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ECONOMICS AND MANAGEMENT

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KEY QUALITIES OF MANAGERS IN MODERN BUSINESS MODELS

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Abstract. *Purpose.* This paper explores the essential qualities of managers that determine the success and adaptability of modern business models in a rapidly changing environment. The study aims to highlight how managerial characteristics–such as emotional intelligence, adaptability, communication, and decision-making–serve as core factors influencing strategic direction and corporate development. Special attention is given to the growing role and impact of female managers.
Design/methodology/approach. The article employs a conceptual approach based on a review of relevant literature and theoretical perspectives. It provides a structured analysis of how different managerial traits contribute to business model optimization and organizational performance in modern economic contexts.
Findings. The analysis confirms that personal qualities of managers are key to achieving operational efficiency, long-term sustainability, and cultural development within organizations. Furthermore, the inclusion of female managers enhances the diversity of leadership styles, enriches business strategies, and enables enterprises to better respond to multifaceted market demands.
Originality. The study contributes to the discourse on business model development by emphasizing the underexplored yet central role of managerial personality traits. It also adds to gender-focused research by illustrating the unique value that women bring to contemporary leadership and strategic innovation.
Key words: personal quality of managers, business model, decision-making power, emotional intelligence, communication ability, adaptability.

Introduction

With the intensification of global digitalization and market competition, the modern business environment has become more complex and diverse. Traditional business models are often based on relatively stable market structures and relatively predictable consumer behaviors. However, in today's society, technological updates, rapid changes in consumer preferences, and policy changes have exposed enterprises to a high degree of uncertainty. In such an environment, the personal qualities of managers have become the key for enterprises to cope with challenges and seize opportunities.

In the field of management research, the study of managers' personal qualities has always been a area that attracts much attention and exploration. For many years, several key aspects have been the focus of extensive investigations. First of all, emotional intelligence has become an important research field. Gorman hypothesized that emotional intelligence, including self-awareness, self-regulation, motivation, empathy and social skills, plays a crucial role in management effectiveness (Teece,1997). Research in this field indicates that managers with higher emotional intelligence can handle complex interpersonal relationships better and deal with stress during the decision-making process, thus making it possible to make more optimized decisions. This article aims to discover and identify the key management qualities that are significantly related to the process of establishing a business model. Among these qualities, emotional intelligence is a key factor.

Decision-making ability is the ability of managers to quickly and accurately analyze the situation, weigh the advantages and disadvantages, and make

the best decision from a variety of alternatives in the face of many uncertain factors and complex problems in a complex and changeable business environment. This ability not only reflects the manager's ability to collect, analyze and judge information, but also reflects the manager's strategic vision, risk awareness and decisive decision-making. Simon emphasizes the rational aspect of decision making, which relies heavily on the analytical skills of managers. In today's data-rich environment, research is increasingly focusing on how managers use their analytical skills to make sense of large amounts of information and make informed decisions (Hambrick,2007).

In the modern business environment, communication ability has become an important indicator to measure the success of a leader. (Kahneman& Tversky,1979) Effective communication not only affects team cooperation and organizational efficiency, but also directly determines an enterprise's position in the market competition. Within the enterprise, managers need to coordinate different departments to ensure the smooth transfer of information and avoid execution errors caused by miscommunication. Outside the enterprise, managers need to communicate effectively with investors, customers, and partners to maintain the stability of the enterprise ecosystem.

The role of managers' adaptability in the establishment of business models is also a key factor that cannot be ignored. It is mainly reflected in the rapid response to market changes, technology iterations or customer demand fluctuations, and timely correction of the value proposition, channel or cost structure in the business model to avoid rigid failure. Anticipate potential threats (such as policy changes and increased competition), and enhance anti-risk capabilities by flexibly designing multi-scenario business models. Identify new needs or disruptive opportunities amid uncertainty (such as emerging technologies) and drive business model innovation (such as opening up new revenue streams or collaboration ecosystems). Redeploy resources (human, financial, data) in response to changes in the environment to ensure that the core components of the model continue to operate efficiently. The essential role is to transform the business model from a static framework to a dynamic system, and to achieve long-term competitiveness through continuous learning and adaptive iteration (Schein,1985).

Founded in 2010, Xiaomi was founded by founder Lei Jun's deep insight and vision for the smartphone industry. Looking back to 2010, Lei Jun, in collaboration with several industry elites who had been deeply involved in the technology field for many years, officially established the Xiaomi brand in Beijing. Since its establishment, the brand has set its sights on the goal of focusing on the research and development of smartphones that combine outstanding quality with extremely high cost performance. It is committed to bringing cutting-edge scientific and technological achievements into the lives of the general public in a more accessible way, enabling more consumers to enjoy the convenient experience of the intelligent era. At that time, the Chinese smartphone market was entering a period of rapid development, with the market size growing explosively. This era opportunity provided an ideal industry stage for Xiaomi's start-up and development.

Relying on a differentiated business operation model and in combination with a highly forward-looking product innovation strategy, Xiaomi achieved a rapid breakthrough. In just a few years, it has not only established a firm foothold in the domestic Chinese market but also gradually expanded its overseas territory, emerging as an important force that cannot be ignored in the global technology industry landscape, profoundly influencing the industry pattern and market trends.The development process of millet can be summarized into three stages: the initial stage, the rapid growth period and the diversified development period. In the initial period (2010-2013), Xiaomi focused on the development and production of smart phones, launched the first Xiaomi mobile phone, and quickly opened the market with cost-effective and innovative Internet marketing strategies. The rapid growth period (2014-2017) saw Xiaomi's rapid expansion, as the company not only gained a significant position in the domestic market, but also began to expand into overseas markets. At the same time, Xiaomi began to lay out the ecological chain, investing and incubating a series of intelligent hardware enterprises. In the diversified development period from 2018 to now, Xiaomi has vigorously developed IoT and smart home products while consolidating its smartphone business, and actively explored Internet services, forming a diversified business pattern.

Literature review

In previous studies, scholars have gradually realized that there is a close relationship between the personal quality of managers and the effectiveness of modern business models. Many studies focus on the influence of managers' strategic thinking quality on business models. Grant (2016) emphasizes that managers with forward-looking strategic thinking can ac-

curately perceive market trends and lead enterprises to build innovative business models.

There are still some inadequacies in the existing research. In terms of research content, although the relationship between the various dimensions of managers' personal quality and the effectiveness of business models has been discussed to some extent, the research is not systematic and in-depth. For example, there is a lack of comprehensive and detailed analysis of the specific function mechanism of managers' qualities such as moral cultivation and communication ability in the process of business model implementation. In terms of moral cultivation, the research on how managers' sense of integrity and responsibility affect the trust relationship between enterprises and partners and customers, and thus affect the stability and sustainability of business models is relatively weak. In terms of communication ability, relevant studies need to be further strengthened on how managers integrate internal resources and promote cooperation among various departments through effective communication and coordination, so as to improve the operation efficiency of business models (Barney,1991).

In terms of research methods, most of the current research uses qualitative analysis and case studies, while quantitative research is relatively rare. Although qualitative analysis and case studies can deeply analyze the situation of individual enterprises, they lack the support of large-scale data, and the universality and representativeness of research results are limited to some extent. Through the collection and analysis of large-scale sample data, quantitative research can more accurately reveal the strength and action path of the relationship between managers' personal qualities and the effectiveness of business models. However, due to the difficulty of data collection, it is not easy to obtain multidimensional data related to the personal quality of managers and the effectiveness of business models, resulting in the relatively insufficient application of quantitative research in this field.

From the perspective of research, the existing research mainly discusses the influence of managers' personal qualities on business models from the inside of enterprises, and rarely considers the moderating effect of external environmental factors. The complexity and dynamic nature of the business environment make the business model of enterprises face many uncertainties. External environmental factors such as market competition situation, changes in policies and regulations, technological innovation, etc., may have an important impact on the relationship between the personal quality of managers and the effectiveness of the business model. For example, in an environment of fierce market competition, managers' adaptability and decision-making speed are more critical to the effectiveness of business models. In the event of major adjustment of policies and regulations, managers' ability to interpret policies and awareness of compliance is particularly important. However, at present, there is a lack of research on how these external environmental factors regulate the relationship between the two, which leaves a broad space for follow-up research.

The influence of managers' personal quality on business model innovation

The innovation of modern business models is usually not only used in technological breakthroughs, but also includes how managers understand the market, motivate the company team and drive company changes. The personal qualities of managers play a decisive role in the process of business model innovation.

The effective operation of a business model requires managers to shape a corporate culture that encourages innovation and tolerates failure. Good managers often have a high level of leadership and are able to motivate team members to challenge traditional models and explore new business opportunities. At the same time, the values and behaviors of managers will profoundly affect the corporate culture, thus affecting the overall innovation atmosphere of the organization

In the modern business environment, decision-making ability is one of the core abilities of enterprise managers to construct, optimize and adjust business models. A successful business model not only requires innovative thinking, but also must achieve the best allocation of resources through precise decision-making to ensure the sustainable development and competitiveness of the enterprise. One of the key roles of decision-making ability in establishing a business model, identifying market opportunities The establishment of a business model begins with the identification of market opportunities. Decision makers need to use market research, competitive analysis, and trend forecasting to determine which business opportunities are worth investing in. For example, Xiaomi found the model of "cost-effective + Internet direct sales" in the smart phone market, and decisively adopted this strategy and achieved success. Resource allocation and strategy execution, decision-making ability affects how enterprises allocate resources, such as capital investment, talent

management, supply chain construction and so on. A good business model must not only be well designed, it must also be continuously optimized in its execution. Sailing in the treacherous sea of the business world, building and navigating the ship of business models has never been an easy task. The policy direction is like an unpredictable monsoon. One moment it brings the warm breeze of supportive policies, and the next it stirs up huge waves of supervision due to the adjustment of regulations. Market competition is just like a surging torrent under the undercurrent. The strategic games among peers and the impact of new entrants constantly threaten the survival space of enterprises. Technological progress is more like a sudden storm, and disruptive innovation may instantly destroy the original business foundation.

Every change in policy is like the crustal movement that reshapes the business landscape. Enterprises need to develop a sharp sense of perception that can see the big picture from small details and a prompt response speed in order to quickly change course when the rules are rewritten. The market environment is never stagnant. Consumer preferences rise and fall like the tide, and competitors' moves are unpredictable. All these are constantly testing the adaptability of enterprises. Not to mention that technological iterations are advancing at an unprecedented pace, and every breakthrough may disrupt the existing competitive balance, To move steadily and far in this business sea full of uncertainties, enterprises must establish a flexible and efficient decision-making system. Just like an experienced helmsman, he should calibrate the business model's course in real time based on market trends and hydrological changes, constantly refine and optimize it, so that the enterprise's ship can steadily move forward in the stormy waves and reach the shore of development.

Emotionally intelligent managers are keenly aware of employees' emotional changes and act as a bridge in team collaboration. Modern enterprises rely more and more on cross-functional team cooperation. Whether managers can balance the interests of different teams and ensure efficient communication within the organization is one of the keys to the implementation of the business model. In addition, emotionally intelligent managers are able to stabilize their morale in the face of crisis and change, ensuring that their teams remain creative and execute in stressful situations. For example, when an enterprise is faced with a crisis such as declining market share and negative public opinion about its products, a manager with high EQ can understand the anxiety of employees, pool team strength through effective communication and incentive measures, and jointly find solutions to problems to push the enterprise out of difficulties (Goleman, 2017).

In the process of business model design and implementation, the market environment often does not develop according to the preset path, so the adaptability of managers is particularly important. Managers with keen market insight, able to identify market changes in a timely manner and quickly adapt their business models to new needs. For example, many traditional retail companies have failed in the digital wave, often not because the technology is lagging behind, but because managers have failed to adjust their strategies in time to adapt to the shift in consumer online spending habits. On the other hand, the managers of enterprises like Amazon, with their keen market insight, have laid out their e-commerce business early and continuously expanded their business fields, extending from online retail to cloud computing and logistics, etc., successfully adapted to market changes and built a huge business empire (Stone, 2014).

Methodology

This study adopts the case analysis method to systematically explore the influence mechanism of managers' personal qualities on the construction of modern business models, and takes Xiaomi Company as a typical case for analysis. The specific research design is as follows:

Case selection basis

The choice of Xiaomi as the core case is based on the following considerations. Xiaomi has risen from a start-up to the Global 500 in more than a decade, and its success is closely related to the strategic decision-making ability and leadership style of its managers, which is in line with the research theme of "management quality drives business model innovation". As a listed company, Xiaomi's publicly disclosed financial statements, prospectus, executive public speeches and media reports provide rich firsthand information for the research. The proportion of female managers in Xiaomi has increased year by year (reaching 36% in 2022), which provides an empirical scenario for analyzing the impact of gender equality on business model diversification.

Data collection and processing. Analyze Xiaomi's 2018-2023 annual report and ecological chain white paper to extract the associated data of managers' decision logic (such as changes in R&D invest-

ment ratio) and business model adjustment (such as IoT business expansion). Systematically combing Lei Jun's public speeches and internal letters, analyzing the impact of his leadership characteristics (such as the advocacy of "engineer culture") on corporate culture. In-depth reports on Xiaomi's management team from authoritative media such as China Business News and Caixin were collected to verify the role of female managers in cross-departmental collaboration and product design.

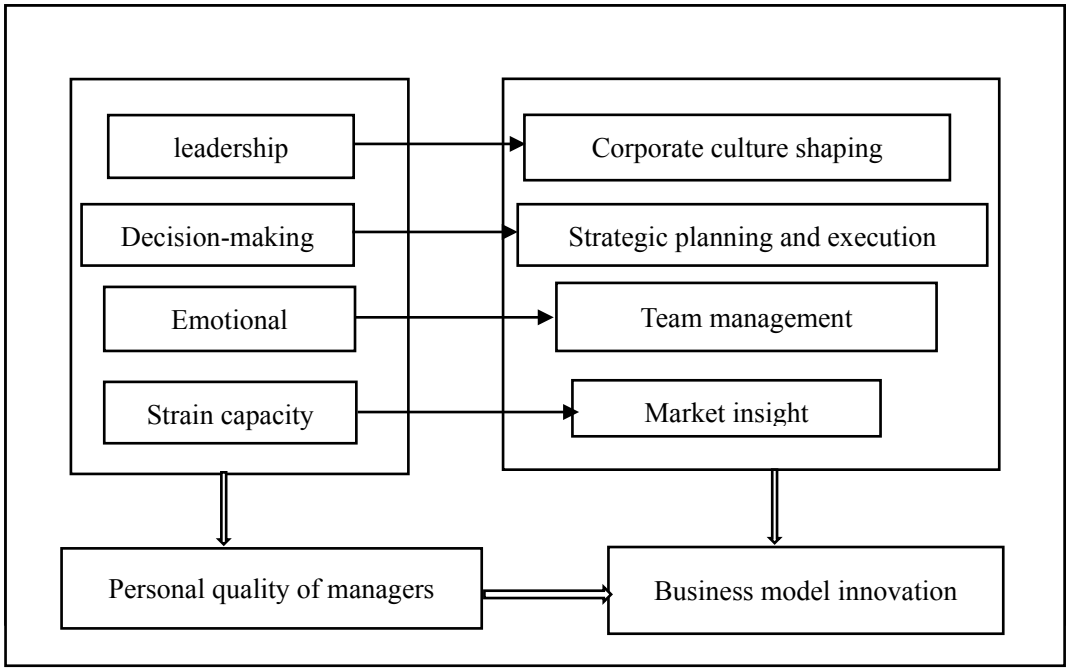

Figure 1 – Conceptual framework of the study

Figure 1, based on the research focus, aims to understand the impact of managers' personal qualities on the establishment of modern business models, and to verify the relationship between key factors in managers' personal qualities on business models. Therefore, four hypotheses are formulated to understand the direction of the research objectives as follows:

H_1: There is a positive correlation between leadership and corporate culture shaping

H_2: There is a positive correlation between decision-making ability and strategic planning and execution

H_3: Emotional intelligence is positively correlated with team management

H_4: There is a positive correlation between adaptability and market insight

Female managers and business model innovation

In the context of an increasingly diverse global business environment, the rise of female managers has not only driven a change in corporate culture, but also played an important role in business model innovation. With their unique leadership style, risk management approach, and decision-making logic, women managers bring new perspectives and opportunities to the organization (McKinsey & Company, 2021).

In terms of diversified decision-making methods, female managers are more inclined to collaborative decision-making and can integrate multiple viewpoints to avoid the deviation caused by a single perspective. In terms of risk management, female managers are usually more cautious and can balance short-term returns and long-term development. With the enhancement of consumer insight, it is easier for female managers to understand the needs of female consumers, thus promoting the innovation of products and services. In terms of marketing, female managers are more empathetic and have a better understanding of consumer experience. Organizational culture and team building: Female managers are more inclusive and open than men in Company team management. Such qualities can enhance employee satisfaction and creativity. Companies led and managed by women perform better in

terms of employee loyalty and teamwork (McKinsey & Company, 2021).

In terms of product and service innovation, female managers have a keen insight into the demands of the consumer market and can guide innovative products that are closer to consumers' needs. Many companies led by women have made breakthroughs in fields such as health, beauty, and domestic services.

In terms of digital transformation and technological innovation, female managers have a long-term perspective in formulating digital strategies and developing in personalized directions. Female executives also play a significant role in areas such as e-commerce, social media marketing, and data-driven decision-making.

Results and discussion

Xiaomi, as a very representative technology enterprise in China, has made remarkable achievements in just over a decade. The success of its business model is closely related to the personal quality of its managers. Meanwhile, the positive influence brought by the increase of female managers under the concept of gender equality is fully reflected in the development process. Analysis of the data given in Table 1.

Table 1 – Case study of Xiaomi Company

Data type	Concrete data	analysis
Market share data	The list of domestic mobile phone activation volume in the 13th week of 2025 has been released. Xiaomi ranked second with a share of 17.20%, just one step away from the leader Huawei's 18.00%. Its share increased by 1.5 percentage points compared with the same period last year, with a growth rate of 10%. In the first quarter of 2025, Xiaomi's domestic market share rose to 17.10%, expanding by 1.8 percentage points year-on-year. Its ranking jumped from sixth in 2024 to second, demonstrating an outstanding performance.	The competitiveness of Xiaomi mobile phones in the domestic market has been rising steadily and the growth momentum is rapid. This stems from the management's precise grasp of the market, meeting diverse demands by launching differentiated products, and achieving rapid brand development.
Financial data	In 2010, the total revenue of Xiaomi Group reached 365.9 billion yuan, an increase of 35.0%. The revenue of smart phone business was 191.8 billion yuan, an increase of 21.8%, and the shipments of 168.5 million units, an increase of 15.7%, and the global market share was 13.8%, ranking among the top three in the world; IoT and consumer products business revenue exceeded 100 billion yuan for the first time, reaching 104.1 billion yuan, an increase of 30%. The smart electric vehicle business revenue was 32.8 billion yuan, of which the automotive revenue was 32.1 billion yuan, 136,900 SU7 series were delivered in the year and 69,700 were delivered in the fourth quarter, and the gross margin increased to 20.4%	Xiaomi has achieved remarkable results in synergistic development in multiple business areas. The steady growth of mobile phone business provides the foundation and support for other businesses; IoT and consumer products business become new growth drivers, reflecting managers' accurate judgment and advance layout of smart home market trends; Although the intelligent electric vehicle business is in the early stage of development, it is growing rapidly and the gross profit margin is increasing, which shows the management's ability to explore new fields and the correctness of decision-making
User satisfaction data	The overall satisfaction of Mi SU7 is 9.05 points, and the net recommendation value (NPS) is 78.66%, second only to Model 3 in the new energy vehicle market. Users' satisfaction with appearance, power, control, safety, quality and configuration exceeds 9 points, and the satisfaction rate exceeds 90%, but the satisfaction rate is only 74% in terms of space, and there are problems such as insufficient after-sales service outlets and not timely response	In the creation of intelligent electric vehicle products, some aspects of Xiaomi have been highly recognized by users, reflecting the managers' attention and grasp of user needs in product development. Make good decisions and actions in product optimization and service improvement

To analyze from the leadership level and lead the strategic direction of the enterprise, Xiaomi started from the mobile phone business and gradually expanded to the IoT and consumer products business and intelligent electric vehicle business. Under the leadership of the manager, the enterprise has made clear the strategic direction of diversified development. By formulating clear strategic goals, managers lead all employees to work in a common direction, so that the enterprise has achieved excellent results in different business areas, and promoted the continuous evolution and improvement of business models.

To motivate the team to achieve the goal, the rapid development of Xiaomi's various businesses cannot be separated from the leadership of managers. Taking the smart electric vehicle business as an example, 136,900 SU7 series were delivered throughout the year, and 69,700 units were delivered in the fourth quarter, which is a team effort behind such results. Through effective incentive mechanisms and leadership methods, managers can stimulate the enthusiasm and creativity of employees, so that the team can overcome various difficulties and achieve business goals efficiently, which provides a strong guarantee for the implementation of the business model.

Analyze from the decision-making level, accurately grasp the market trend. In the mobile phone business, the manager makes accurate decisions and launches mobile phone products with different positioning according to the market demand, so that the market share of Xiaomi mobile phone continues to increase. In the ranking of China's mobile phone activation volume in the 13th week of 2025, Xiaomi ranked second with a share of 17.20%, with a small gap with the first place, and a significant year-on-year growth. This reflects that managers have keen market insight and decisive decision-making power, can accurately grasp the market trend, make the right product decisions, and lay the foundation for the success of the business model. Reasonable layout of multiple businesses, millet's successful layout in multiple business areas highlights the excellent decision-making power of managers. The manager decided to develop the IoT and consumer products business and the smart electric vehicle business, and these businesses have achieved remarkable results. For example, in 2024, the business revenue of IoT and consumer products will exceed 100 billion, and the business of intelligent electric vehicles will grow rapidly and the gross profit margin will increase, which shows that managers can comprehensively consider many factors such as enterprise resources and market opportunities when making decisions, rationally distribute diversified businesses, build a synergistic business model, and enhance the enterprise's anti-risk ability and profitability.

From the perspective of emotional intelligence, team cooperation and communication can be promoted. From the coordinated development of Xiaomi's various businesses, it can be seen that managers have high emotional intelligence, can create a good team atmosphere, and promote cooperation and communication between departments. For example, the mobile phone business, IoT and consumer products business and intelligent electric vehicle business support each other and develop in synergy, which requires managers to have high emotional intelligence, coordinate the relationship between different business teams, so that everyone works towards a common goal, thus laying the foundation for the establishment of multi-business collaboration business model. To understand the emotional needs of users, Mi SU7 has been highly recognized by users in many aspects such as appearance and power, which reflects that managers have high emotional intelligence and can understand their emotional needs from the perspective of users. In the process of product development, pay attention to the user's feelings on all aspects of the product, make the product more in line with user expectations, improve user satisfaction and loyalty, and help establish a user-centered business model.

From the perspective of adaptability, in response to changes in market competition, in the highly competitive environment of the mobile phone market, Xiaomi can rise from the sixth place in 2024 to the second place in the first quarter of 2025, which reflects the adaptability of managers. In the face of changes in market share and pressure from competitors, managers timely adjust strategies and product strategies, launch products that meet market demand, enhance product competitiveness, thus occupying a favorable position in market competition and ensuring the stability and adaptability of business models. To solve business development problems, in view of Xiaomi SU7's low spatial satisfaction rate and insufficient after-sales service outlets, managers need to have the ability to respond to changes and take timely measures to solve them. For example, optimizing product design to improve spatial satisfaction, strengthening after-sales service system construction to improve service quality, these measures help improve user experience, maintain corporate image, avoid negative impact on business model, but also accumulate experience for future business expansion and model optimization.

Lei Jun's leadership and Xiaomi's corporate culture

As the founder and leader of Xiaomi, Lei Jun, with his outstanding leadership skills and profound understanding of the technology industry as well as a long-term strategic vision, has established the brand vision of "making technology accessible to the general public". Under this guidance, he successfully established an innovative business model centered on high cost performance and deeply integrated with Internet thinking, laying a solid foundation for the rise of Xiaomi. In terms of shaping corporate culture.

Lei Jun encourages innovation and risk-taking, creating an open and inclusive working atmosphere. He advocated engineer culture and attached importance to technology research and development, attracting a large number of outstanding technical talents to join Xiaomi. Millet's "popcorn" activity is an innovative measure taken by Lei Jun to encourage users to participate in product improvement and enhance user stickiness. This activity not only makes users feel valued, but also stimulates the innovation vitality of the team, making millet products more suitable for user needs (Xiaomi Ecological Chain Barn Academy.,2017).

Lei Jun advocates a management concept centered on team collaboration and based on a flat structure. In Xiaomi's organizational system, the management hierarchy is streamlined, and communication between employees and managers is efficient and smooth. This not only significantly enhances execution efficiency but also creates fertile ground for the exchange of innovative thinking. This management model fully stimulates the potential of employees, enabling everyone to deeply participate in the development of the enterprise and gradually shape the unique cultural genes of Xiaomi.

The rise of female managers in Xiao Mi and teamwork

With the development Xiaomi. More and more female managers have emerged in the company, which not only reflects the concept of gender equality in Xiaomi, but also brings new vitality and perspective to the company. In the team management of Xiaomi, female managers play an important role in coordinating team relations and promoting team cooperation with their delicate emotional perception and good communication skills.

There are many excellent female managers in Xiaomi's human resources department. They are well aware of the needs and pain points of employees, and fully consider the situations of different employees when formulating talent training plans and employee welfare policies, so as to provide employees with a good career development path and a comfortable working environment. In the project team, female managers are good at listening to different opinions, and can better balance the interest relationship among team members, resolve conflicts, and improve the cohesion and cooperation efficiency of the team. In the process of Xiaomi's international business expansion, female managers have established good cooperative relations with teams from different countries and regions by virtue of their excellent cross-cultural communication skills, making important contributions to Xiaomi's opening up of the international market (Song, 2020).

Managers' adaptability and millet's market adaptation

Xiaomi's managers have shown great adaptability and market insight. In the increasingly fierce competition in the smartphone market, Xiaomi not only has a firm foothold in the low-end market with cost-effective products, but also keenly aware of the potential of the high-end market, by constantly improving product quality, increasing research and development investment, launched a series of high-end flagship models, and successfully entered the high-end market. For example, the launch of Mi 10 series mobile phones has been comprehensively upgraded in terms of configuration, performance and appearance design, meeting high-end users' demand for mobile phone quality and performance (Gartner,2025), and enhancing the competitiveness of Xiaomi brand in the high-end market (Mobile China,2020).

With the rise of the smart home market, Xiaomi quickly adjusted its strategy to build a huge smart home ecosystem with mobile phones as the core. Xiaomi's managers recognize the consumer demand for intelligent life scenes, through investment, cooperation and other ways, integrate all kinds of smart home equipment manufacturers, launched a series of smart home appliances products, such as smart speakers, smart cameras, intelligent sweeping robots. The success of Xiaomi's smart home ecosystem not only enriches Xiaomi's product line, but also expands its business model and brings new profit growth points for the company (China Electronics News,2021).

Product diversification under equality between men and women

Driven by the concept of gender equality, the company has more female managers, which has a positive impact on product development and design, making products more diversified and better suited to the needs of the public. In the past, many technology products tend to be more male-oriented in design and function, but Xiaomi fully considers the needs and preferences of female users in the product development process.

In terms of mobile phone design, Xiaomi has launched a variety of colors and styles of mobile phones to meet the aesthetic needs of users of different genders. For example, Millet Civi series mobile phones, in the design of the use of thin body, exquisite technology and soft color scheme, more in line

with female users' preference for mobile phone appearance. At the same time, in terms of mobile phone functions, some special functions for female users have been added, such as beauty photography, beauty makeup mode, etc., to improve the user experience of female users (Communications World, 2021).

In the field of smart home products, female managers have participated in the design of a series of products that are more in line with family habits by virtue of their delicate understanding of family life scenes. For example, Xiaomi's intelligent air purifier is more simple and beautiful in appearance design, and can be integrated into various home styles; The operation interface of the intelligent sweeping robot is designed to be more simple and easy to understand, which is convenient for family members of different ages to use. The success of these products reflects that Xiaomi fully considers the differences between male and female users in the process of product development, realizes the diversified development of products, and better meets the needs of the public (Design Art Research,2020).

Conclusion

The personal quality of managers has a significant impact on the effectiveness of establishing business models. Cognitive ability helps managers to identify market opportunities and find the right direction for business model construction; Innovative thinking mode promotes business model innovation and enhances enterprise competitiveness; Cooperation ability to promote resource integration, ensure the smooth implementation of business models; Values guide the evolution of business models towards sustainability. Under the trend of gender equality, the increase of female managers has brought diversified perspectives and ways of thinking to enterprises, promoted the diversified development of business models, and made products better meet the needs of the public.

When selecting managers, enterprises should comprehensively consider their personal qualities such as cognitive ability, thinking mode, cooperation ability and values, pay attention to gender balance, give full play to the advantages of female managers, and ensure the selection of managers with the ability to promote the effective establishment of business models. Enterprises should attach importance to the training and development of managers and provide diversified training courses and learning opportunities, including leadership training, emotional intelligence improvement courses, market insight analysis training, etc., to help managers constantly improve their personal quality to adapt to the changing market environment.

Managers themselves should also establish the concept of lifelong learning, constantly learn new knowledge and new skills, and strengthen their own quality. At the same time, managers should pay attention to cultivating team spirit, especially in cross-departmental and cross-gender team cooperation, and give full play to the advantages of different members. In addition, managers should also pay attention to social development trends, such as the in-depth promotion of the concept of gender equality, and integrate it into enterprise management and product research and development to promote the sustainable and healthy development of enterprises.

In the modern business environment, the success of a business model depends not only on technological innovation, capital operation or market size, but also on the personal quality of managers. In the near future, with the continuous progress of science and technology and the continuous development of society, the business environment will be more complex and changeable. Managers need to continuously improve their comprehensive quality, especially in the context of the rapid development of emerging technologies such as artificial intelligence and big data, managers should have digital leadership and be able to use new technologies to optimize enterprise management and business models.

At the same time, under the social trend of pursuing gender equality, enterprises should further strengthen the training and appointment of female managers, and fully tap the potential of female managers. Future studies can further explore how to establish a more perfect training system for female managers, and how to better promote the cooperation between male and female managers in enterprises, so as to jointly promote the innovation and development of business models. In addition, the research on the relationship between management quality and business model of enterprises of different industries and different sizes needs to be further deepened in order to provide enterprises with more targeted management suggestions.

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ANALYSIS OF BANK INVESTMENT ACTIVITIES IN THE SECURITIES MARKET

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Abstract. *Purpose.* The article examines the investment activities of second-tier banks in the Republic of Kazakhstan's securities market during 2022–2024, with a special focus on the strategy and operations of JSC "Bank CenterCredit" (BCC). It aims to analyze the dynamics of BCC's securities portfolio, its structure, and its role in the bank's overall profitability.
Design/methodology/approach. The study analyzes changes in BCC's securities investments across 2022–2023 in the context of macroeconomic developments and strategic shifts in asset allocation. It also considers broader sector-wide trends in the banking system's use of government bonds and National Bank notes.
Findings. In 2022, BCC significantly increased its investments in government and other debt securities amid high interest rates and the acquisition of another bank's assets. In 2023, the bank partially redirected liquidity into lending, reducing the share of its securities investments. Kazakhstani banks overall rely heavily on securities as key sources of income and liquidity, but their high yields have drawn regulatory attention.
Originality. The article offers practical recommendations for balancing lending and investment strategies in commercial banks, managing interest-rate risks, and enhancing the development of Kazakhstan's securities market. The findings are relevant for both commercial banks and financial market regulators.
Key words: bank investments, securities, bonds, stock market, liquidity, Bank CenterCredit, Kazakhstan.

Introduction

Investments by banks in non-credit assets, primarily in securities, constitute an important component of the banking sector's operations. In the Republic of Kazakhstan, as of the end of 2023, investments in bonds and other securities accounted for approximately 23% of the total assets of banks, second only to loan portfolios. Second-tier banks (STBs) regularly allocate excess liquidity to government and corporate bonds, notes issued by the National Bank of Kazakhstan (NBK), and other instruments, ensuring stable interest income and diversification of their asset base. Since 2016, the banking system has experienced a liquidity surplus, which has yet to be fully redirected toward lending to the real economy. Under these conditions, investment in the securities market has become a key mechanism for the placement of funds (National Bank of Kazakhstan, 2023).

The period from 2022 to 2024 has been marked by significant external and internal changes that have influenced banks' investment activity. First, the tightening of monetary policy amid rising inflation and geopolitical tensions in 2022 led to an increase in the base rate to 16.75% per annum (as of December 2022), which, in turn, raised the yields on government bonds. This created strong incentives for banks to increase their allocations to high-yield and reliable instruments such as government securities and NBK notes, although this also increased the risk of portfolio revaluation (ARDFM, 2023).

Second, in 2022, several foreign participants exited Kazakhstan's securities market, while the presence of domestic institutional investors intensified. For instance, on the primary market for corporate bonds, the share of banks amounted to 14.5% of total placements in 2022, while other institutions (primarily pension funds) accounted for 74.4% (KASE, 2023). Third, regulatory bodies (ARDFM) and the market infrastructure supported the influx of retail investors: the number of brokerage accounts grew by 149% in 2022, exceeding 550,000, largely due

to the fact that major Kazakh banks began offering brokerage services to the general public (ARDFM, 2023).

All of these factors confirm the relevance of studying and analyzing the investment activity of banks in the securities market.

Special attention should be given to the experience of JSC Bank CenterCredit (BCC) – one of the largest banks in Kazakhstan (top-3 by total assets). In 2022, BCC significantly expanded its operations in the securities market while also carrying out a strategic transaction: the acquisition of 100% of the shares of the subsidiary Alfa-Bank Kazakhstan for approximately 50 billion KZT. This acquisition, completed in May 2022, not only expanded BCC's client base and loan portfolio, but also generated a one-time gain of about 84 billion KZT due to the difference between the fair value of the assets and the purchase price. As a result, BCC's net profit for 2022 increased sevenfold, reaching 145.1 billion KZT (Bank CenterCredit, 2023). This case illustrates how large-scale transactions and changes in macroeconomic conditions can influence the financial performance and asset structure of banks, including their investment portfolios.

The purpose of this article is to conduct an in-depth practical analysis of the investment activity of Kazakhstan's second-tier banks in the securities market during the period 2022–2024. The study focuses on both quantitative and qualitative indicators, with particular emphasis on the case of one of the most active market participants – JSC Bank CenterCredit (BCC). The article aims to identify key trends, influencing factors, and risks associated with bank investments in capital market instruments under conditions of macroeconomic and regulatory volatility.

As the informational and statistical foundation of this study, official sources covering the period from 2022 to 2024 were used. Primarily, aggregated statistical data published by the Agency of the Republic of Kazakhstan for Regulation and Development of the Financial Market (ARDFM), the National Bank of the Republic of Kazakhstan (National Bank of Kazakhstan, 2023), the Kazakhstan Stock Exchange (KASE, 2023), as well as rating and investment-analytical agencies such as RAEX (Expert RA) and Halyk Finance, were applied. The data on trading volumes, portfolio structures, interest rate dynamics, inflation levels, and key indicators of banks' financial performance were obtained from publicly available publications and official IFRS-based financial statements posted on the websites of banks and the stock exchange.

For the case of Bank CenterCredit, the analysis relied on its audited financial statements for 2022 and 2023, disclosed via the Kazakhstan Stock Exchange (KASE, 2023) and the bank's official website (Bank CenterCredit, 2023). The most recent developments in 2024 were tracked based on interim financial reports and sectoral reviews (Halyk Finance, 2024; RAEX, 2024).

Literature review

The investment activity of banks in the securities market has long been the subject of academic and professional research, particularly in the context of developing financial systems and evolving regulatory frameworks. A comprehensive review of the literature helps contextualize Kazakhstan's experience within global trends and provides a theoretical foundation for analyzing second-tier banks' behavior.

One of the foundational works in this domain is the research by Mishkin and Eakins (2021), which explores the functions of financial institutions and the role of securities investments in liquidity management. They argue that in markets characterized by limited lending opportunities or elevated uncertainty, banks often reallocate capital toward government bonds and other liquid instruments. This framework is relevant for Kazakhstan's case, where investment in sovereign debt instruments has become a dominant strategy.

Allen and Carletti (2013) emphasize the trade-off between liquidity and risk in banks' portfolios, showing how regulatory policies such as liquidity coverage ratios (LCRs) and capital adequacy requirements affect banks' asset allocation decisions. This is reflected in Kazakhstan's regulatory landscape, where prudential norms shape the structure of second-tier banks' investments, as confirmed by empirical studies from ARDFM (2023).

In emerging markets, the nexus between monetary policy and bank investment behavior is of particular interest. According to Becker and Ivashina (2014), in periods of monetary tightening, banks shift toward fixed-income instruments with higher yields, especially government securities. Kazakhstan's experience during 2022–2023, marked by high base rates and elevated inflation, aligns with this phenomenon, as second-tier banks substantially increased their holdings in NBK notes and sovereign bonds.

Local studies also contribute to the understanding of Kazakhstan's banking investment dynamics. Yessenzhulov et al. (2021) analyze the evolution of bank portfolios in the post-crisis period and highlight the

growing importance of securities as a buffer against credit risk. They conclude that, given the stagnation in long-term lending and limited depth of the equity market, fixed-income instruments will likely remain a core component of bank strategies.

Furthermore, Koshkinbayeva and Tuleshova (2022) explore the integration of ESG (Environmental, Social, and Governance) criteria into bank investment decisions in Kazakhstan. While still nascent, ESG-aligned bond placements and green instruments are beginning to influence institutional investor behavior, including banks. This trend is expected to expand in the coming years, shaping new asset classes in banks' portfolios.

Finally, the interaction between retail investment and institutional bank activity has been investigated by Rakhmetova (2023), who notes the increasing digitalization of brokerage services offered by Kazakhstani banks. The rise of retail investor participation, facilitated by mobile banking and integrated trading platforms, has created feedback effects on banks' portfolio strategies and market-making roles.

Together, these studies offer a multidimensional view of bank investment activity and provide an essential backdrop for assessing Kazakhstan's banking sector in the context of its macroeconomic and regulatory transitions.

Methodology

The study is methodologically based on quantitative and comparative analysis methods. A horizontal analysis of the dynamics of banks' investment volumes in securities by year and a vertical analysis of banks' asset structures (the share of securities) were conducted. For clarity, the data are presented in the form of graphs and tables. The analysis considered macroeconomic conditions (interest-rate dynamics, inflation), regulatory constraints (liquidity norms, prudential requirements), and one-off events (bank mergers and acquisitions). The experimental part of the study involves aggregating statistical indicators and interpreting them through the lens of these factors.

Experimental Section.

To ensure a comprehensive quantitative and qualitative assessment of the scale of investment activity by second-tier banks (STBs) of the Republic of Kazakhstan in 2022–2024, a dynamic evaluation of the aggregate securities portfolio held by the banking sector was conducted. The analysis indicates that in 2022, the total volume of bank investments in debt instruments reached approximately 9.95 trillion KZT, representing a 4.7% increase compared to 2021. This growth was primarily driven by investments in government bonds and short-term notes issued by the National Bank of Kazakhstan, which were regarded by banks as the most secure and profitable instruments amid rising base rates and ongoing macroeconomic uncertainty (National Bank of Kazakhstan, 2023; KASE, 2023).

In 2023, the growth rate of the investment portfolio accelerated, reaching 11.6 trillion KZT – a 16.7% increase year-on-year. This can be attributed to the persistent liquidity surplus in the banking system and the limited demand for long-term lending from the real economy. The sustained interest of banks in fixed-income instruments confirms that such assets serve as a form of "safe haven" for deploying excess liquidity (ARDFM, 2023).

Preliminary results for 2024 indicate that the total portfolio volume grew to an estimated 12.5 trillion KZT (+7.8% year-on-year). Although the annual growth rate moderated, this figure confirms that investment activity remains elevated. Overall, the cumulative growth over the three-year period exceeded 25%, underscoring the critical role of securities in managing bank profitability, liquidity, and capital adequacy (RAEX, 2024).

An analysis of the portfolio structure shows that throughout the study period, more than 80% of investments were allocated to government securities and NBK notes. These instruments offer high liquidity, negligible credit risk, and attractive yields – particularly amid elevated policy rates. For instance, the yield on 12-month NBK notes in 2022 reached 14–15% per annum, making them especially attractive relative to corporate bonds (National Bank of Kazakhstan, 2023). Conversely, the share of corporate bonds remained moderate – in the range of 10–15% – due to lower liquidity and higher risk profiles.

It is important to note that the share of investment securities in total banking assets remained stable at 22–25% throughout 2022–2024, highlighting the strategic role of these instruments in the balance sheets of second-tier banks. This also indicates that, alongside lending, investments in securities are a core driver of operating income and financial resilience amid a volatile macroeconomic environment (Halyk Finance, 2024).

Despite the moderate deceleration in growth during 2024, investment activity on the capital market remained strong. This strategy reflects the adaptability of Kazakhstan's banking sector to external shocks

and demonstrates its ongoing commitment to balancing risk and return. In an environment of moderate credit demand and continued external uncertainty, banks are choosing to prioritize low-risk, highly liquid instruments (RAEX, 2024).

Figure 1 illustrates the dynamics of the investment portfolio of JSC Bank CenterCredit (BCC) from the end of 2021 to early 2024. As shown in the chart, the highest portfolio volume was recorded at the end of 2022, followed by a decline in 2023. However, in the first quarter of 2024, the portfolio resumed growth.

A more detailed analysis reveals that BCC's investment strategy is marked by flexibility and the ability to adapt to evolving market and macroeconomic conditions. In 2021, the volume of the bank's investment portfolio amounted to 0.48 trillion KZT. In 2022, it rose sharply to 0.91 trillion KZT – an 89.6% increase (Bank CenterCredit, 2023). This spike was driven by several key factors.

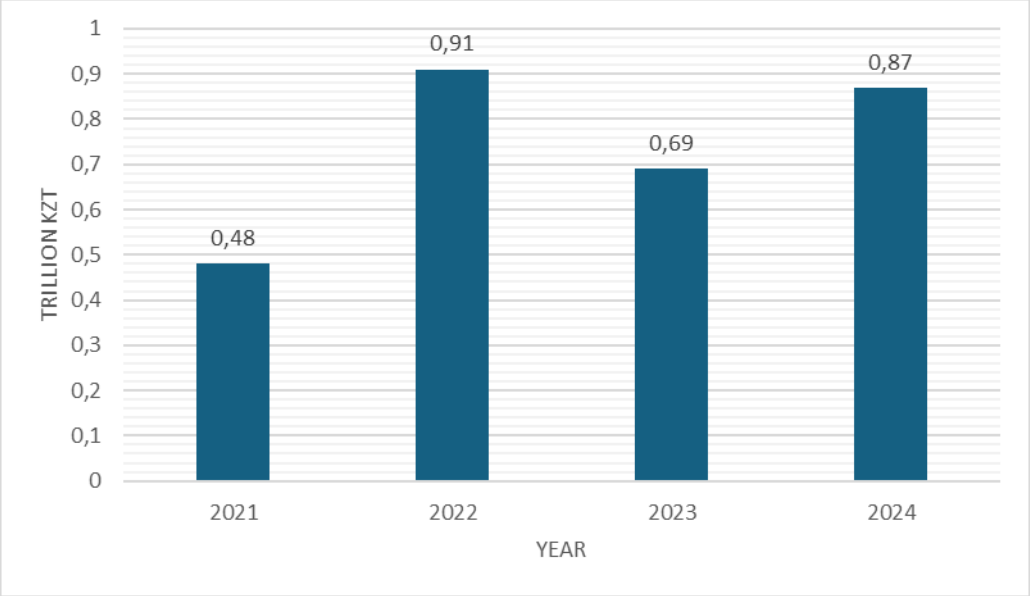

Figure 1 – Dynamics of the investment securities portfolio of JSC Bank CenterCredit (2021–2024), in trillion KZT at nominal value
Note – compiled by the author based on Bank CenterCredit's financial statements

Firstly, amid the tightening of monetary policy and the increase in the base rate to 16.75% in December 2022, the yield on government securities and NBK notes rose significantly. This made them particularly attractive for placing excess liquidity. Secondly, in 2022, BCC completed the acquisition of the subsidiary Alfa-Bank Kazakhstan, which ensured an inflow of assets and capital. The deal significantly expanded the client base, thereby increasing income flows and freeing up resources for investment activities (KASE, 2022).

In 2023, with the stabilization of interest rates and relative saturation of the investment segment, the portfolio volume slightly decreased. However, by the end of Q1 2024, a new growth cycle began: the portfolio reached KZT 0.87 trillion, which is 26.1% more compared to the end of 2023 (Bank CenterCredit, 2024).

The projected volume for the end of 2024 is about KZT 0.95 trillion, a year-on-year increase of 37.7%. This growth indicates a renewed strategic interest in securities investments, especially amid uncertainty over future base rate trends. It is expected that the share of floating-rate instruments and shorter-duration assets in the portfolio will increase, helping to reduce interest rate risk while maintaining income in the medium term (Halyk Finance, 2024).

In terms of investment structure, Kazakhstani banks traditionally prioritize government securities (G-secs), especially Ministry of Finance bonds and NBK short-term notes. These instruments constitute the bulk of banks' investment portfolios, due to their high reliability, favorable tax treatment – particularly the exemption of coupon income from taxation – and virtually zero credit risk (National Bank of Kazakhstan, 2024).

According to the National Bank and KASE, the volume of government debt traded on KASE increased by 13.2% in 2024, reaching KZT 27.0 trillion, a significant portion of which was purchased by the banking sector alongside the Unified Accumulative Pension Fund (UAPF) (KASE, 2024). Exchange trading in government securities for the same period amounted to KZT 8.0 trillion. Banks actively participated in both primary auctions by the Ministry of Finance and the secondary market, including using reverse repo operations secured by G-secs to manage short-term liquidity (ARFR, 2024).

Alongside government instruments, the share of non-government (corporate) securities in banks' investment portfolios also showed positive dynamics during the review period. As of the end of 2023, 346 bond issues by 83 issuers, including private companies and quasi-sovereign entities, were listed on KASE (KASE, 2023). Banks played a visible role in financing the corporate sector, particularly by subscribing to bonds issued by national holdings and infrastructure companies.

In 2022, corporate bond placements rose by 30.5%, reaching KZT 1.5 trillion. Analysts estimate that banks purchased at least 15% of this volume, focusing on issuers with high credit ratings and guaranteed yields (RAEX, 2023). Nevertheless, the largest holders of corporate debt remain pension funds (especially UAPF) and insurance companies, due to banks' risk limit restrictions and the relatively lower liquidity of such instruments. In absolute terms, the total corporate bond portfolio of the banking sector was estimated at KZT 2–3 trillion by the end of 2023, while the total volume of securities investments was about KZT 11.6 trillion. For comparison, investments in government bonds exceeded KZT 8 trillion (NBK, 2024).

Of particular interest is the impact of the NBK's interest rate policy on the yield and revaluation of banks' bond portfolios. In 2022, as the base rate was sharply raised from 9.75% to 16.75%, the market prices of debt instruments declined, causing negative revaluations under the fair value model (ARFR, 2023). Banks applying fair value accounting through other comprehensive income reported valuation losses in their financials. However, most banks use amortized cost accounting, which avoids reflecting market volatility in current financial results (RAEX, 2023).

In contrast, the situation improved in 2023: as the base rate gradually decreased to 16% and market bond yields stabilized, bond prices began to recover. This partially offset the previous year's losses. Moreover, banks' interest income from securities significantly increased due to high coupon rates. According to Bank CenterCredit, its interest income in Q4 2022 reached a record KZT 100 billion, 151% higher than in the same quarter of the previous year (Bank CenterCredit, 2023), driven by growth in both loan and investment portfolios.

For the sector as a whole, net interest income rose by 49% in 2022, reflecting the combined effect of high interest rates and effective asset-liability management (Halyk Finance, 2023).

Furthermore, banks play an institutional role in developing Kazakhstan's capital market. The largest second-tier banks (STBs) act not only as investors, but also as issuers, market makers, and intermediaries within the exchange infrastructure. Shares of banks such as Halyk Bank, Bank CenterCredit, and Kaspi.kz are actively traded on KASE and international platforms. In 2024, the banking sector became the key driver of KASE's index growth: the index rose by 33.2% over the year, led by banks – BCC (+123.8% YoY), Halyk Bank (+56.7%), among others (KASE, 2024).

The growing presence of STBs in the capital market is also supported by their rising financial results. For example, BCC's net profit in 2024 increased by nearly 50%, reaching KZT 202.4 billion. This facilitated the launch of share buyback programs aimed at supporting stock prices and enhancing the bank's investment appeal (Bank CenterCredit, 2024).

Moreover, second-tier banks are playing a crucial role in building market infrastructure and investment culture. BCC and Halyk Bank have organized multiple corporate bond issues for companies in energy, infrastructure, and ESG sectors. These initiatives illustrate banks' readiness to take on investment risks and their evolving institutional role (Halyk Finance, 2024).

Retail investing is also becoming a major direction. Banks like Kaspi and Jusan offer digital access to investment products (ETFs, bonds, DRs). According to KASE, the number of individual brokerage accounts surpassed 400,000 in 2024, growing by more than 35% year-over-year. This reflects increased financial inclusion and provides banks with behavioral data to refine their investment strategies (KASE, 2024).

Finally, regulatory policy plays an important role. Since 2022, the ARFR has intensified oversight of banks' portfolio quality, including stress testing and sensitivity analysis to market, FX, and credit risks. As of 2024, more than 75% of banks' assets are covered by such supervision, enabling the identification of vulnerabilities and development of recapitaliza-

tion plans for specific financial institutions (ARFR, 2024).

Thus, the investment activity of Kazakhstan's STBs is becoming increasingly multifaceted and strategically calibrated. Banks are transitioning from a focus on government securities to more diversified strategies, taking part in market structuring, launching digital investment products, and acting as key agents of financial transformation – forming a solid foundation for long-term resilience of both the banking and broader financial sector.

Results and discussion

The analysis demonstrated that in 2022–2024, the investment activity of Kazakhstani banks in the securities market remained high, although its dynamics and structure underwent certain changes due to external conditions. The total securities portfolio of the banking sector steadily increased – from approximately KZT 9.5 trillion at the beginning of 2022 to KZT 12.5 trillion by the end of 2024. Its share in banks' total assets fluctuated between 22–25% (National Bank of Kazakhstan, 2024). This means that about a quarter of second-tier banks' (STBs) assets continued to be invested in capital market instruments, primarily in sovereign debt. Such a model enables banks to pursue two key objectives: first, to place excess liquidity under reliable interest-bearing instruments, and second, to comply with regulatory liquidity requirements. For instance, the k4 liquidity ratio in the banking system stood at 148%, well above the regulatory minimum of 30%, largely due to large holdings of government securities and NBK notes on banks' balance sheets (ARFR, 2024).

However, the concentration in government bonds entails certain risks – mainly interest rate risk and dependence on sovereign credit quality. Despite this, the current risk-return profile is assessed as acceptable: even under the stress volatility of 2022, banks did not incur substantial losses, and in 2023 profitability improved, partly due to interest income from investment portfolios (RAEX, 2024).

The example of Bank CenterCredit (BCC) confirms general trends while also demonstrating the importance of an individualized strategic approach. In 2022, BCC took advantage of favorable market conditions and significantly increased its investment portfolio, which, combined with the acquisition of another bank, resulted in unprecedented profit growth (Bank CenterCredit, 2023). In 2023, the bank moderately reduced investment activity, prioritizing lending, but maintained a substantial securities portfolio of around KZT 1.13 trillion. This allowed BCC to sustain stable interest income and liquidity levels in 2024, while also boosting market capitalization. Its shares led market gains on the exchange, reflecting a positive investor response (KASE, 2024).

Thus, flexible portfolio management aligned with the economic cycle – active expansion during high interest rates and credit contraction, followed by stabilization during recovery – can be considered an effective strategy. Other systemically important banks such as Halyk Bank and Kaspi followed a similar approach: combining loan portfolio growth with sizeable investments in highly liquid instruments. For example, amid credit growth in 2023, some banks partially reduced their securities holdings – a 1.7% monthly decline in December was recorded sector-wide (ARFR, 2024). However, in 2024, as credit growth slowed, investments began to increase again.

Among the key risks associated with banks' investment activity are interest rate risk and market volatility. Changes in the base rate can significantly affect bond revaluation, especially for assets measured at fair value (AFS). To mitigate this, most Kazakhstani banks hold securities to maturity using amortized cost accounting (RAEX, 2023). Furthermore, the ARFR requires regular stress testing of investment portfolios under rising yield scenarios. Market risk is also managed via repo operations and the NBK's buyback of notes, which support secondary market liquidity.

Credit risk related to corporate bonds also deserves attention. In general, the share of such instruments in bank portfolios is small, and most investments are directed toward quasi-sovereign issuances with government guarantees, reducing the probability of default. Statistical data confirm portfolio stability: by the end of 2023, the aggregate net profit of STBs reached KZT 2.2 trillion (+49% compared to 2022), and return on assets (ROA) hit 4.5% – a record level in recent years (Halyk Finance, 2024). A significant portion of these results came from interest income on securities operations.

Conclusion

The conducted analysis confirmed that Kazakhstani banks, particularly Bank CenterCredit, play a key role in the domestic securities market as major institutional investors. The investment activity of STBs in 2022–2024 was marked by high levels of engagement, adaptability, and responsiveness to changes in the economic environment.

BCC's experience demonstrates the effectiveness of a strategy that combines traditional banking operations with active participation in the capital market. This model enables not only revenue diversification but also increased resilience to external shocks.

The future effectiveness of banks' investment activities will largely depend on the trajectory of key macroeconomic indicators, regulatory actions, and banks' ability to adopt modern asset management practices. Banks' participation in the capital market creates a synergy effect: they secure stable income and liquidity, while the state and corporate sectors receive essential funding through debt instruments.

Thus, the investment function of banks goes beyond traditional liquidity allocation and becomes a crucial factor in the sustainable development of Kazakhstan's financial sector.

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SYSTEM OF KEY COMPETENCES IN THE LABOR MARKET OF THE DIGITAL ECONOMY

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Abstract. *Purpose.* The article addresses the problem of identifying and classifying workforce competencies in the context of the digital economy. The objective is to identify the core components of "digital economy competencies" and construct a competency model relevant to the digital labor market. It is hypothesized that defining these core competencies will facilitate the creation of a model aligned with external demands and societal expectations.
Design/methodology/approach. The research is based on a comprehensive analysis of academic literature and empirical data, employing the categorical methodology known as the "Finite Information Flow" method.
Findings. The study identified a set of essential competencies for the digital economy, structured them into a competency model, and demonstrated that the model reflects the evolutionary development of competencies within an organization's qualification system. The model includes four logical levels of development.
Originality. The proposed model captures the dynamic nature of digital competencies and offers broad applicability for further research into competency development mechanisms, structural relationships among competencies, and the enabling and limiting factors of digital labor market transformation.
Key words: categorical method "final information flow", key competencies, digital economy.

Introduction

The modern transformation of the labor market of the Republic of Kazakhstan is determined not only by technological progress, but also by strategic guidelines of the state policy aimed at developing the digital economy. The key documents are the State Program "Digital Kazakhstan" (2018), the Concept of Personnel Policy in Government Agencies until 2030, and the Strategy "Kazakhstan – 2050", which emphasize the need to develop human capital and build competencies that meet the challenges of the sixth technological order. The transition to the sixth technological order, in which intangible resources, including knowledge, skills and digital literacy, become dominant factors of production, requires the creation of an effective system for the formation and development of key competencies of employees. In the context of the rapid development of digital technologies and automation of business processes, there is a growing demand for specialists with not only technical knowledge, but also a set of interdisciplinary, cross-functional skills (Whiddett & Hollyforde, 2003; Hamel & Prahalad, 1994).

A significant part of international studies emphasizes that the key competencies of the digital economy are: digital literacy, cognitive flexibility, critical thinking, creativity, teamwork in a distributed environment, programming, design thinking and continuous self-learning skills (Ala-Mutka, 2011; OECD, 2019; Carretero et al., 2017; World Economic Forum, 2020).

As highlighted in the World Economic Forum's 2020 report, enhancing digital skills contributes to improved workforce efficiency and strengthens an organization's capacity to adjust to the uncertainties and rapid changes characteristic of a VUCA environment. In turn, the results of studies by Ala-Mutka (2011) and Carretero et al. (2017) indicate a correlation between the level of digital skills of workers and the competitiveness of the national economy. These findings actualize the issue of adapting international

competency models (such as DigComp 2.2) to the conditions of the Kazakhstani labor market, taking into account the specifics of the educational system and current demographic trends.

Today, Kazakhstan experiences a shortage of specialists with relevant digital and supra-professional competencies, which negatively affects the level of digitalization of enterprises, especially in the regions. This requires rethinking traditional approaches to professional training and the formation of a system for the constant updating of competencies focused on inter-industry mobility and flexibility of employees.

The study of the system of key competencies in the digital economy is becoming especially relevant in the context of Kazakhstan's reality. This approach enables the identification of key competencies across different sectors and the formulation of institutional strategies for their advancement, aligning with global best practices and the nation's long-term strategic goals. The purpose of the study is to analyze and systematize key competencies in demand in the labor market of the digital economy of the Republic of Kazakhstan, with the subsequent formation of a competency model based on a functional-professional approach and identifying patterns of their evolutionary development.

Literature review

Modern research in the field of competence development in the digital economy emphasizes the multidimensionality of approaches and the need for interdisciplinary analysis. There are two main areas of research in the scientific literature:

- the first is related to the theoretical substantiation of digital competence models and their classification;
- the second is related to the empirical verification of the effectiveness of educational programs and professional training.

S. Whiddett and S. Hollyforde (2003) proposed a competency model that considers functional and behavioral components that are adaptable to digital conditions. The research of G. Hamel and C.K. Prahalad (1994) became fundamental in understanding strategic competencies as the main resource of an organization in the era of digital transformation. D. Levy and R. Murnane (2004) in their works emphasize the shift in requirements for employee skills – from routine tasks to analytical, cognitive and digital abilities. According to the World Economic Forum (2020), the list of key competencies of the future includes analytical thinking, active learning, stress resistance, emotional intelligence, self-learning ability, as well as digital literacy and understanding of AI.

Frey and Osborne (2017) analyzed more than 700 professions in the context of automation and identified the need to develop trans-professional competencies. OECD (2019) in the "Skills Outlook" review emphasized the need for continuous updating of digital skills as a key component of employment sustainability. The works of Van Laar et al. (2017) systematize digital competencies into six categories: technical, information, communication, collaboration, critical thinking and creative skills.

Some authors, such as A. Ferrari (2013), proposed instrumental approaches to measuring digital literacy (DIGCOMP), which later formed the basis of EU strategic initiatives. The works of Martin & Grudziecki (2006) have become significant for the development of digital competence frameworks in education and the labor market.

It should be noted that in the available studies there is insufficient adaptation of international competency models to the specifics of regional labor markets, including Kazakhstan. There are no studies examining key competencies taking into account the specifics of the transition to the sixth technological order and the territorial segmentation of the economy of the Republic of Kazakhstan.

This gap is filled in this article, which substantiates the system of key competencies in the Kazakhstan labor market, develops a model that takes into account institutional features, and offers recommendations for the development of human resources in the context of digitalization.

Materials and methods

The study is aimed at identifying and systematizing key digital competencies in demand in the Kazakhstan labor market in the context of the digital economy. The research focuses on Kazakhstan's labor market as its object, while its subject concerns the framework of digital competencies shaped through professional practice and the advancement of digital infrastructure. The following questions were formulated during the study:

- What key digital competencies are most in demand in the context of digital transformation?
- How can digital competencies be classified depending on the level of complexity, professional qualifications and industry affiliation?

The hypothesis of the study is that digital competencies are formed evolutionarily and can be structured as a multi-level model reflecting the gradual

complication and specialization of knowledge and skills.

The stages of the study included: Gathering and analyzing statistical data related to Kazakhstan's digital economy and employment structure; Conducting a critical review of academic literature and legislative frameworks; Utilizing the categorical-systemic approach of the Functional-Informational Framework (FIF) to construct a digital competency model.

The primary research methods selected for this study include statistical data analysis, critical examination of academic literature (drawing from sources such as Scopus and Web of Science), and the Final Information Flow (FIF) method.

The FIF approach was employed to construct an evolutionary model of competencies, conceptualized as a dynamic system wherein each successive level represents an increased complexity of tasks undertaken by professionals. It made it possible to create a four-level model that includes nine components of digital competencies, ranging from basic digital literacy to strategic management of digital processes.

The research drew upon materials such as state programs of the Republic of Kazakhstan (including "Digital Kazakhstan" and the "National Development Plan until 2025"), data provided by the Bureau of National Statistics under the Agency for Strategic Planning and Reforms, as well as international benchmarks from organizations such as the OECD, ILO, and the World Bank.

Through the application of these methodologies, a structural model of digital competencies was developed. This model is organized by levels of complexity and importance, aligned with both the demands of Kazakhstan's digital economy and relevant international standards.

Results and discussion

In today's environment, information and communication technologies (ICT) are increasingly integrated across nearly all sectors of Kazakhstan's economy. However, the level of demand for digital competencies remains different across sectors. Figure 1 shows the distribution of sectors of the economy of Kazakhstan by the level of ICT application, the largest share of which is the information and communication sector, education, financial services and public administration.

The proportion of professionals utilizing digital technologies in their daily work is growing, even in fields not traditionally linked to ICT.This trend is supported by the analysis results shown in Table1.

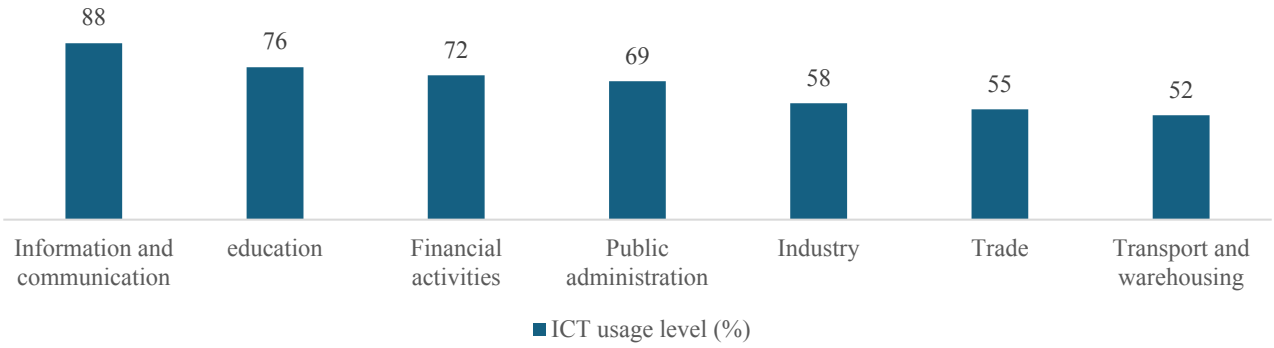

Figure 1 – Distribution of sectors of the economy of Kazakhstan by the level of ICT use (in %)
Source: Bureau of National statistics Agency for Strategic planning and reforms of the Republic of Kazakhstan, 2024

Table 1 – Share of workers using ICT by type of professional activity in the Republic of Kazakhstan, %

Professional group	Share of employees using ICT (%)
ICT specialists	100
Financial and accounting workers	93
Administrative positions	89
Medical personnel	77
Teachers and researchers	84

Continuation of the table

Professional group	Share of employees using ICT (%)
Industrial engineers	71
Working specialties	58
Source: analytical processing of data from hh.kz, Rabota.kz, 2024.	

The data obtained indicate that digital competencies are becoming a universal component of professional training of specialists, regardless of industry affiliation. This transformation reflects the growing demand for flexible, interdisciplinary skills, including digital literacy, analytical thinking, and the ability to communicate across industries.

An in-depth review of more than 100 job vacancies in the field of information technology and adjacent industries–gathered from platforms such as hh.kz, Rabota.kz, and superjob.ru–revealed several key trends that illustrate the changing competency landscape in Kazakhstan's labor market. Among the most prominent shifts is the growing focus on teamwork and the individual responsibility of employees for collective outcomes. Employers are increasingly broadening functional responsibilities, expecting professionals to be versatile, perform multiple tasks, and step into related roles when needed. Additionally, there is rising demand for metacompetencies such as emotional intelligence, positive thinking, and openness to innovation. Understanding broader business processes beyond one's immediate role has become a valuable asset, along with active involvement in shaping new directions and forming project teams.

These trends signal the rapid evolution and transformation of the competency system in the context of Kazakhstan's digital economy. This dynamic environment necessitates the development of a national competency model that not only accounts for industry-specific features and the country's strategic priorities but also aligns with global developments. As a response to the challenges of the sixth technological paradigm, this study introduces an evolutionary model of digital competencies structured into four logical levels of complexity. Unlike previous research, which often overlooked the interconnected and institutional nature of digital competencies within the national labor context, this study highlights their interdisciplinary essence and formal integration into Kazakhstan's workforce development framework. This research helps bridge theoretical and methodological gaps in evaluating essential competencies relevant to the digital economy within a national framework. Based on the conducted analysis, a comprehensive set of competencies was identified that is critical for all participants in modern labor relations amid ongoing digitalization. While some of these align with existing official competency lists, several newly recognized skills have also been included.

Projecting these results forward, it can be argued that the competencies outlined in Table 2 are both universally applicable and essential across various economic sectors. The growing demand for these skills shows consistent momentum. It is also important to stress that specific expertise, abilities, and prior work experience are integral to shaping an employee's professional competence, serving as the core for acquiring and advancing in any given profession.

Consequently, this study has established a competency profile that reflects the demands of the evolving external environment and supports workforce competitiveness in the digital economy.

At the next stage of the study, a scientific task was implemented to design a list of digital competencies based on the Final Information Flow (FIF) method, developed within the framework of the categorical-system methodology (Boush et al., 2020). The essence of the method lies in the description and modeling of systems that go through a stage of complication in the development process, by identifying logical levels (Ll), each of which records a qualitatively new level of system complexity.

The analysis demonstrated that the digital competencies essential for participation in the digital economy can be organized into four progressive levels, each representing a step up in the complexity of job responsibilities, the depth of professional expertise, and the degree of engagement in digital workflows. This allows us to create an information model that adequately reflects the dynamics of competence development.

The logical limit (LL) in the FIF model demonstrates the potential set of qualitative characteristics (competencies) within a specific level, while the transformability indicator (T) describes the system's ability to combine and complicate these characteristics. This is especially important for the digital economy, where the adaptability and variability of competencies are becoming a factor in sustainable development.

Table 2 – Competencies of the economically active population in the digital economy

Categories of Employed	Functions before digital economy	Functions in modern society	Competencies
Skilled Workers	Performance of work functions in accordance with instructions	Interaction via digital ICT technologies	Digital Literacy
		Work in a high uncertainty mode	Adaptability
Employees	Communications were limited to functionality	Communications involve the use of an ever-increasing arsenal of digital tools	Interaction and cooperation
	Not assumed	Understanding business processes	Critical Thinking
Specialists	Not assumed	Analysis and elimination of systemic problems in work	Systemic Thinking
	Ability to work in a team	Compensation and closing of team weaknesses	Emotional Intelligence
Managers	Control over the allocated area	Launching and developing startups, project management, personnel management	Resource Management
Formal control over compliance with environmental legislation		Active participation, support and generation of projects in the field of environmental protection, formation of eco-thinking in the company	Ecological Thinking
	Not provided	Participation and control in several types of activities simultaneously (personnel management, procurement, logistics)	Cross-functionality and interdisciplinary interaction

Note – compiled by the authors

Figure 2 shows a structural diagram of the digital competencies model built using the FIF method. The system of logical levels allows us to identify the principles of the emergence of new qualities in the competency system and provides the basis for developing labor potential management strategies. This approach is aimed at bridging the gap between the current requirements of the labor market and the current state of workforce preparedness in the context of the digital transformation of the economy.

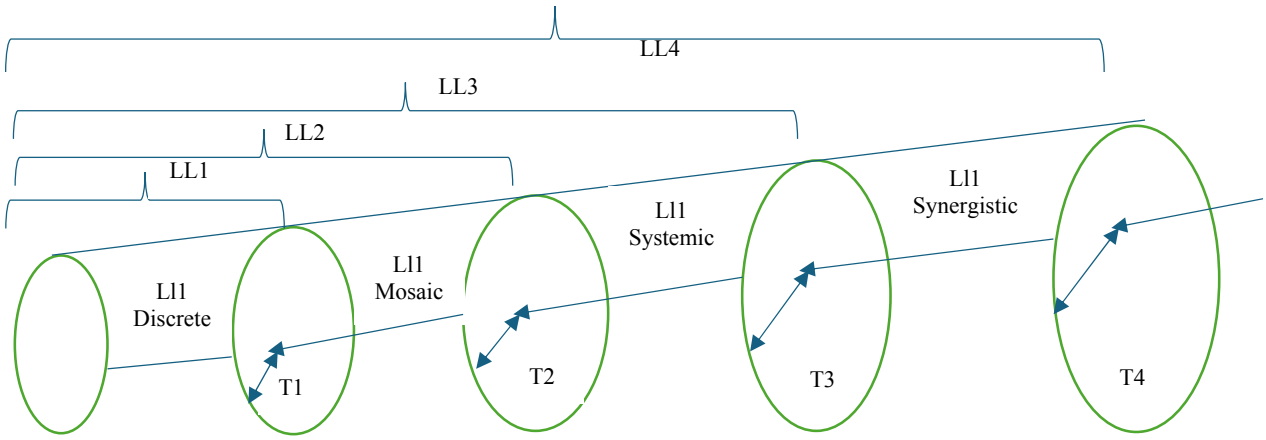

Figure 2 – Competency system presented using the "finite information flow" method

Logical level 1 – Discrete. Competencies: digital literacy, adaptability. Aimed at entry-level workers and qualified specialists whose activities do not require involvement in business processes. Competencies include basic ICT skills: working with office programs, electronic communication, file transfer, etc. (Oluwaseye, 2022).

Logical level 2 – Mosaic. Competencies: interaction and cooperation, critical thinking. At this stage, the elements of information processes begin to line

up into a single system. Competencies at this level allow you to see the relationships between business functions, offer non-standard solutions, and carry out role-based interaction with colleagues. Here, critical thinking is manifested as the ability to identify bottlenecks in the system and suggest optimization paths.

Logical level 3 – Systemic. Competencies: systemic thinking, emotional intelligence. This level is characterized by involvement in management processes, the ability to integrate knowledge within the framework of project and innovative solutions. Emotional intelligence allows you to establish productive relationships in a team, resolve conflicts, and understand the motivation of participants. The use of gamification elements in business processes contributes to employee engagement and productivity growth (Dacre et al., 2021; Zloteanu et al., 2018).

Logical level 4 – Synergetic. Competencies: environmental thinking, cross-functionality, interdisciplinary interaction, resource management. At this level, an employee is able not only to understand the long-term consequences of their actions, but also to strategically build a sustainable development model for the organization. Competencies are aimed at developing ecosystem thinking, minimizing costs, and increasing environmental and social responsibility. According to some scientists (Hermundsdottir et al., 2022), such qualities are especially valued today in the context of global instability and the need to transition to a green economy model. The competency of "cross-functionality and interdisciplinary collaboration" is regarded by numerous researchers as essential in the current stage of societal evolution. It is strongly tied to the ability of each team member to realize their individual potential, as it promotes the utilization of diverse connections and communication pathways for addressing key challenges. This approach minimizes bureaucratic delays and boosts employee engagement and efficiency by integrating everyone into the workflow.

Competencies at the synergetic level – such as ecological awareness, resource optimization, and interdisciplinary cooperation – demonstrate a person's capacity for long-term strategic vision, spanning 10 to 30 years. They also reflect efforts to cultivate eco-consciousness in others, encourage sustainable production and consumption practices, and foster employee development.

The structured implementation of competency-building models is intended to gradually enhance individual capabilities, overcome fragmented skill sets, and enable progressive advancement toward more integrated levels of development – from mosaic to systemic and finally to synergetic stages. As a result, the research led to the creation of an evolutionary framework for digital competencies, articulated through a hierarchy of logical development levels. The proposed model allows not only to diagnose personnel competencies, but also to predict the needs of the organization in the context of digitalization. The use of the FIF method makes strategic human resource management possible.

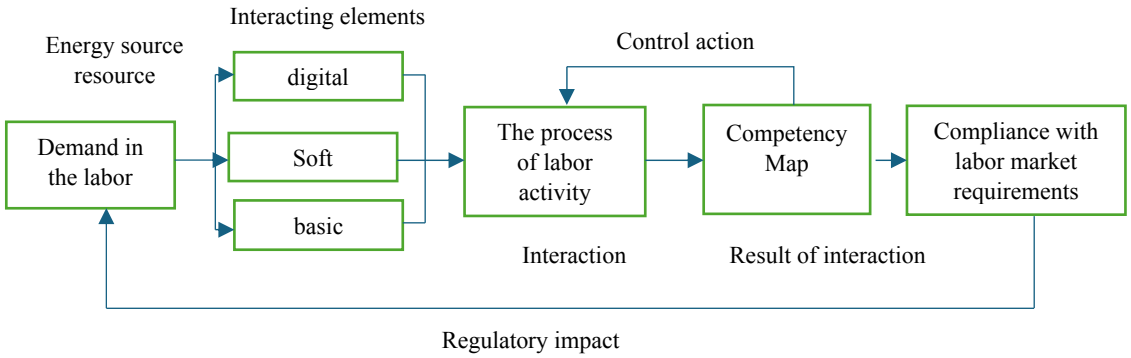

Figure 3 – Model of formation and development of competencies
Note – compiled by the authors

The competency framework proposed by the authors, comprising four logical tiers and eight core skills, serves as a universal foundation for designing models aimed at developing and enhancing competencies within the digital economy. This system can be expanded to a full-fledged model based on the categorical-systemic methodology, i.e. on the method of the "Universal Scheme of Interaction of Elements" (USIE), which allows reflecting the systemic connections between processes, resources, elements, inter-

action and result within a single cognitive structure. Figure 3 shows a model for the formation and development of competencies in the digital economy as a result of applying the "Universal Scheme of Interaction of Elements" method.

Consider the basic categories of this scheme:

1. Process. In the context of the proposed model, the process is the compliance of the formed competencies with the current and future requirements of the labor market. This is a dynamic mechanism for the evolution of competencies as a response to the challenges of the external environment.

2. Source of Activation. The driving force behind the system is the demand from the labor market for specific sets of knowledge, abilities, and competencies. This external requirement, shaped by evolving job functions and tasks, initiates the development of new skill sets within the competency framework.

3. Components. The model is structured around three interconnected clusters of competencies:

- Foundational digital skills (comprising 20 elements organized into general, typical, functional, and specialized categories);
- Soft skills, categorized into four progressive levels: discrete, mosaic, systemic, and synergetic;
- Sector-specific (professional) competencies, aligned with occupational standards and job profiles.

Each of these competencies undergoes a developmental progression, facilitating its integration into a cohesive system.

4. Interrelations. In this framework, the interaction element captures how labor potential is realized within the context of a digital economy. Interaction encompasses not only the reciprocal relationship between employee and employer, but also the dynamic adaptation of skills under digital working conditions.

5. Outcomes of Interaction. A central outcome is the ability to accurately evaluate the current competency level and construct a personalized development trajectory. By using a logical-semantic modeling approach, this system merges conceptual content with structural logic to create clear and adaptable pathways for competency growth.

Thus, the USIE method provides formalization and structuring of complex processes of competence development in the context of digitalization, allowing to identify the relationship between the elemental composition, the nature of interaction and the systemic effect for the subject himself, the organization and the environment.

Within the framework of the proposed model, it is necessary to jointly reflect the content of competencies and the logic of their evolutionary arrangement.

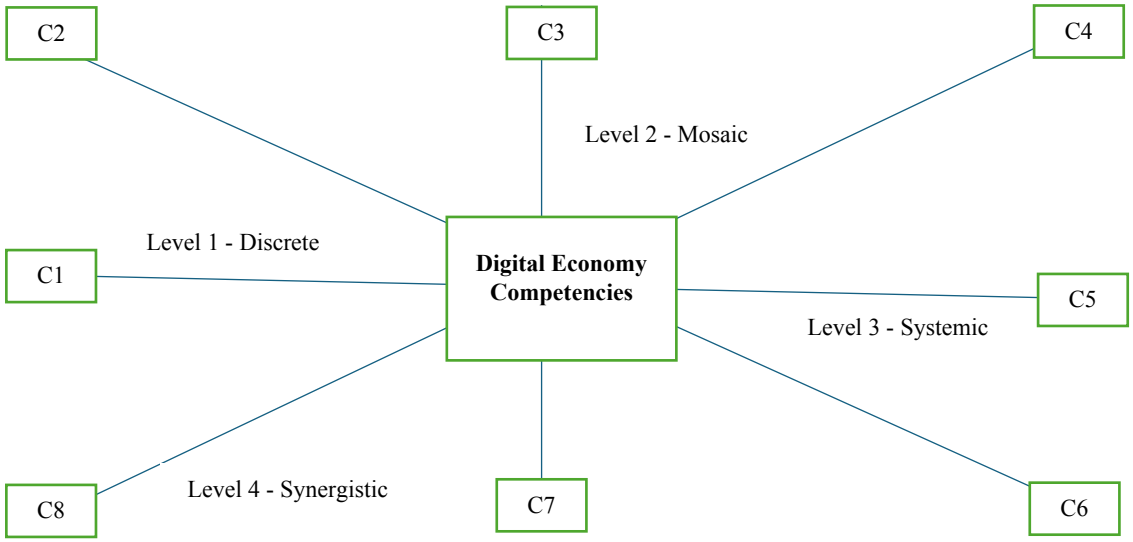

Figure 4 – Logic and content of the assessment system in the competency model
Note – compiled by the authors

Figure 4 presents a graphical representation of digital economy competencies, mapped along the coordinate axes of the proposed model. The progression through the logical levels follows a clockwise direction, beginning from the top-left quadrant.

The first quadrant (discrete level) encompasses core digital competencies (C1), which are subdivided into 20 components across four categories, along with the adaptability skill (C2). In the second quadrant (mosaic level, upper right), competencies such as collaboration and interaction (C3) and critical thinking (C4) are located. The third quadrant (lower right), which reflects the systemic level, incorporates systemic thinking (C5) and emotional intelligence (C6). The fourth quadrant (lower left), representing the synergetic level, features ecological awareness (C7) and resource management abilities (C8).

Competency development in the model is evaluated using a five-point scale. For instance, the cumulative score for K1-level is calculated by summing the points for all associated elements, ranging from 20 to 100 points (see Table 3).

It is important to note that competency formation can be nonlinear, with development occurring simultaneously across multiple logical levels. This reflects the adaptive and multi-dimensional demands of today's labor market, where different competencies may evolve concurrently at varied stages.

Table 3 – Competency assessment indicators

Competencies/ indicators		1	2	3	4	5
C1	Digital and computer literacy	20-35 points	36-51 points	52-67 points	68-83 points	84-100 points
C2	Adaptability	Adapts work methods to new requirements	Can quickly switch between tasks	Knows how to remain a holistic person	Effectively solves problems in changing conditions	Anticipates changes and reacts in advance
C3	Interaction and cooperation	Establishes working relationships	Uses an arsenal of digital tools in the communication process	Identifies the needs of others	Involves others in joint work	Builds a basic network of contacts, establishes connections
C4	Critical Thinking	Identifies gaps and sets tasks	Can analyze errors	Finishes unusual ideas personally or in a team	Understands key business processes	Makes the right decisions in specific situations
C5	Systems Thinking	Links team actions to goals	Understands the contribution to achieving strategic goals	Monitors industry development trends	Acts taking into account the future needs of the company	Eliminates systemic problems
C6	Emotional Intelligence	Recognizes own emotions, describes verbally	Recognizes the feelings of other people	Respects the opinions of others	Open to different cultures, rules	Compensates for the team's weaknesses
C7	Resource Management	Combines efforts to solve problems	Coordinates, delegates team actions	Forms goals, evaluates completed tasks	Responsible for the results of employees' work	Able to launch startups, projects
C8	Ecological Thinking	Shows interest in environmental issues	Participates in environmental protection projects	Participates in promoting eco-thinking in the company	Generates projects in the field of environmental protection	Forms policies within the framework of the lean manufacturing concept

Note – compiled by the authors

The formation of digital competencies is determined not only by their current level but also by how rapidly and intensively they evolve (Doronenko, 2021). Despite the analytical complexity posed by the non-linear nature of competency development, this very feature allows for more accurate data interpretation–an essential aspect of informed managerial decision-making within the proposed model. To facilitate such assessment, a classification system has been introduced to determine the degree of alignment

between employee competencies and labor market requirements. This system categorizes alignment into four levels: not aligned, minimally aligned, fundamentally aligned, and fully aligned. This tiered structure enables qualitative evaluation of an individual's existing competencies and supports the formulation of personalized development trajectories. In this framework, human resource management becomes a strategic function, involving targeted recruitment, internal mobility, and workforce optimization in response to changing labor market dynamics.

By applying the developed model, organizations can forecast the degree of competency alignment with market expectations. At the same time, it acknowledges that the development of human capital is a continuous process–one that evolves with time and has no finite end point.To ensure the clarity and systematicity of further work with competencies, a competency map has been developed (Figure 5), reflecting the levels of development for each element and their possible combinations. The map is based on the method of categorical-systemic methodology – "A series of information criteria" (SIC). This method involves the decomposition of competencies into information units reflecting the key qualities of an employee.

							8. Ecological thinking 7. Resource Management
						7. Resource Management 6. Emotional intelligence	8. Ecological thinking 6. Emotional intelligence
					6. Emotional intelligence 5. Systems thinking	7. Resource Management 5. Systems thinking	8. Ecological thinking 5. Systems thinking
				5. Systems thinking 4. Critical thinking	6. Emotional intelligence 4. Critical thinking	7. Resource Management 4. Critical thinking	8. Ecological thinking 4. Critical thinking
			4. Critical thinking 3. Interaction and cooperation	5. Systems thinking 3. Interaction and cooperation	6. Emotional intelligence 3. Interaction and cooperation	7. Resource Management 3. Interaction and cooperation	8. Ecological thinking 3. Interaction and cooperation
		3. Interaction and cooperation 2. Adaptability	4. Critical thinking 2. Adaptability	5. Systems thinking 2. Adaptability	6. Emotional intelligence 2. Adaptability	7. Resource Management 2. Adaptability	8. Ecological thinking 2. Adaptability
	2. Adaptability 1.Digital and computer literacy	3. Interaction and cooperation 1.Digital and computer literacy	4. Critical thinking 1.Digital and computer literacy	5. Systems thinking 1.Digital and computer literacy	6. Emotional intelligence 1.Digital and computer literacy	7. Resource Management 1.Digital and computer literacy	8. Ecological thinking 1. Digital and computer literacy
1.Digital and computer literacy	2. Adaptability	3. Interaction and cooperation	4. Critical thinking	5. Systems thinking	6. Emotional intelligence	7. Resource Management	8. Ecological thinking

Figure 5 – Competency Map
Note - compiled by the authors

Each cell of the map is a combination of two competencies, allowing to identify individual features of the employee's professional profile. The model does not exclude the participation of all other competencies, since the development of any of them occurs in conjunction with elements of a lower or accompanying order.

Thus, the competency map performs several functions at once:

- Assessment of the degree of compliance of a specific employee's competencies with the organization's tasks;
- Identification of areas of personalized development;
- Formation of a HR strategy at the level of a department or the organization as a whole.

Conclusion

The proposed model enables a comprehensive assessment of the development of digital competencies, taking into account both their logical hierarchy and interrelations. By introducing different levels of compliance, the model allows for systematic diagnostics and the design of personalized development strategies for employees. A competency map based on the SIC (Structured Information Context) method serves as an effective tool for strategic human resource management in the digital economy. The practical significance of the model lies in its flexibility to be applied across different organizational levels and its predictive capacity to assess how well an employee's professional profile corresponds to current labor market demands. Moreover, the construction of both individual and group development pathways using the competency map supports the long-term sustainability of organizations, enhancing their resilience and adaptability in a rapidly changing external environment. While the model allows for forecasting the likelihood of achieving optimal competency alignment, it also underlines that this alignment is not a definitive outcome. Rather, the advancement of human potential is viewed as a dynamic and continuous journey.

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HOW INNOVATION REQUIREMENTS, PRODUCT CREATIVITY, EMPLOYEE INGENUITY, AND DIGITAL CHANGE SHAPE STRATEGIC ORIENTATION

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Abstract. *Purpose.* This study investigates the influence of innovation-related factors on strategic orientation in contemporary organizations. Specifically, it examines the impact of four variables: Innovativeness as a Job Requirement, Product Innovation, Employee Innovativeness, and Digital Transformation.
Design/methodology/approach. A quantitative approach was adopted using a structured survey distributed via social networks (Instagram, Telegram, WhatsApp) through Google Forms. The survey gathered responses from 69 participants of diverse gender, age, and education levels within Kazakhstan. Regression analysis was employed to assess the relationships between the variables.
Findings. The results indicate that Employee Innovativeness and Digital Transformation significantly influence Strategic Orientation, explaining 77% of its variance. In contrast, Innovativeness as a Job Requirement and Product Innovation showed no significant impact. The findings suggest that innovation embedded in organizational culture and supported by digital processes contributes more meaningfully to strategic adaptability than product-based innovation alone.
Originality. This study contributes to the growing body of literature on strategic orientation by highlighting the comparative influence of internal innovation-related factors. It emphasizes the critical role of employee-driven innovation and digital transformation in shaping effective strategic frameworks. The research also points out limitations in existing models by showing that certain innovation indicators may not always predict strategic orientation in specific contexts. Recommendations for future research include using longitudinal designs and expanding geographic and industry scope to validate and generalize findings.
Key words: strategic orientation, employee innovativeness, digital transformation, product innovation, job innovativeness.

Introduction

Managers within organizations tend to emphasize different strategic actions depending on the specific objectives they are striving to achieve (Olson et al., 2005). These strategic priorities are not chosen arbitrarily; rather, they are guided by a deliberate alignment with the company's overarching goals, competitive landscape, and available resources. For example, firms that place a high value on customer orientation focus their efforts on generating long-term customer satisfaction and building strong relationships by consistently delivering value to their clients. These companies aim to create a customer-centric environment where feedback, loyalty, and personalized experiences are central to their strategic framework.

On the other hand, organizations that adopt a competitor-oriented strategy invest time and effort in thoroughly analyzing their market rivals. This entails the identification of competitor strengths and weaknesses, forecasting what they are likely to do next, and adjusting internal strategy to beat them. Concurrently, cost-oriented firms work at maximizing their internal processes with a view to minimizing waste and maximizing productivity across their value chain. Their aim is to be operationally excellent by reducing costs without detracting from performance or quality (Day, 1990; Porter, 1985). It must be acknowledged, however, that such var-

ied strategic orientations are not necessarily mutual. Firms tend to follow a mix strategy instead, using a combination of customer, competitor, and cost-based strategies simultaneously in order to be dynamic and adaptable in dynamic markets (Gatignon and Xuereb, 1997). A multi-dimensional strategy enables firms to cope more efficiently with complex environments and take advantage of emerging opportunities.

Strategic orientation is deeply embedded in the broader framework of organizational culture. It reflects the values, beliefs, and assumptions shared by members of the organization, which collectively influence behavior and decision-making processes (Deshpande et al., 1993; Hurley and Hult, 1998; Narver and Slater, 1990). This culture serves as an intangible yet powerful asset that shapes strategic behavior and performance. According to scholars such as Barney (1991) and Grant (1991), organizational culture can be viewed as a valuable resource that offers firms a unique advantage that is difficult to replicate. The way these cultural resources–manifested as strategic orientations–are deployed can result in varying degrees of success or failure depending on the market context and internal alignment (Day, 1994). Fundamentally, strategic orientation is a guiding mechanism for channeling organizational resources–be it human, financial, technological, or intellectual–towards long-term business success. It is an operating guide that defines how firms compete, innovate, and sustain performance in rapidly changing environments.

Strategic orientation is also an essential force behind organizational success in the current VUCA world. The rapid pace of technological advancement, heightened competition, and shifting consumer demands call for firms to respond quickly and intelligently. Firms endowed with clearly defined strategic orientation are better positioned to withstand uncertainties, respond to market signals, and capitalize on opportunities. In a bid to stay competitive, companies must continually align their objectives with present market trends, technological breakthroughs, and organizational competencies.

One of the critical enablers in this adaptation process is innovation. Innovation should not be confined to product development or service enhancement alone; it must also permeate all levels of the organization–from frontline employees and middle managers to senior leadership. Cultivating a culture of innovation strengthens employee engagement, encourages experimentation, and fosters a proactive approach to problem-solving.

This paper focuses on four interrelated variables and examines their influence on shaping and enhancing a firm's strategic orientation. These variables are: Innovativeness as a Job Requirement, Product Innovation, Employee Innovativeness, and Digital Transformation. Each of these elements plays a distinct yet interconnected role in enabling organizations to define and execute effective strategies. For example, embedding innovativeness as a core job requirement ensures that creative thinking becomes a standard expectation across roles. Incentivizing product innovation makes products relative and desirable. Fostering employee innovativeness creates an employee base that continually generates new ideas, and adopting digital transformation offers them the technology and equipment required to be successful in the digital age. The examination presented in this study offers insights into each factor's relative impact on strategic orientation. The study will provide business leaders with actionable recommendations for how effort and investment should be directed on which dimensions in order to generate performance and long-term competitiveness in an increasingly fast-moving environment.

Literature review

According to Yuan and Woodman (2010) innovation acts as a fundamental for achieving success in the position. Workers who recognize innovation as an essential job requirement tend to see novelty alongside new idea creation and utilization as performance-improving factors. This job requirement reflects outside expectations thus creating a social and political acceptance for employee innovative actions. Product innovation entails both production of new original products and enhancement of existing ones with unique attributes or improved worth (Setyawati, A. et al, 2024). Quality along with functionality with design and technology represent different components under product innovation. The new ideas help organizations succeed in competitive markets by responding to market developments thereby achieving better business performance.

Employee innovativeness entails an individual creating new ideas and promoting them to achieve productive results (Khan, M. et al, 2021). Employee Innovativeness defines the capacity for workers to enhance innovation through their creative thinking combined with new skills and original concepts which deliver enhanced value to organizational work. Digital transformation operates through digital technology application to boost business operations

with model innovation and enhance performance improvement (Malewska, K. et al, 2024). The process combines the alignment of strategy with culture and people and leadership through operational process and structure redesign. Digitalization includes the collection of data as well as the development of improved interconnection and user interfaces and better communication methods. Based on Khan, M. et al (2021), Strategic orientation describes the extern and pace with which organizations obtain market information before they distribute it for making necessary strategic decisions. The success of new products depends on it and becomes vital for organizations which operate in markets containing high uncertainty and require both customer-driven and technology-based approaches. The research model is presented in the figure 1.

Hypotheses:

H1: Innovativeness as a Job requirement has a positive impact on shaping Strategic Orientation

H2: Product Innovation has a positive impact on shaping Strategic Orientation

H3: Employee Innovativeness has a positive impact on shaping Strategic Orientation

H4: Digital Transformation has a positive impact on shaping Strategic Orientation

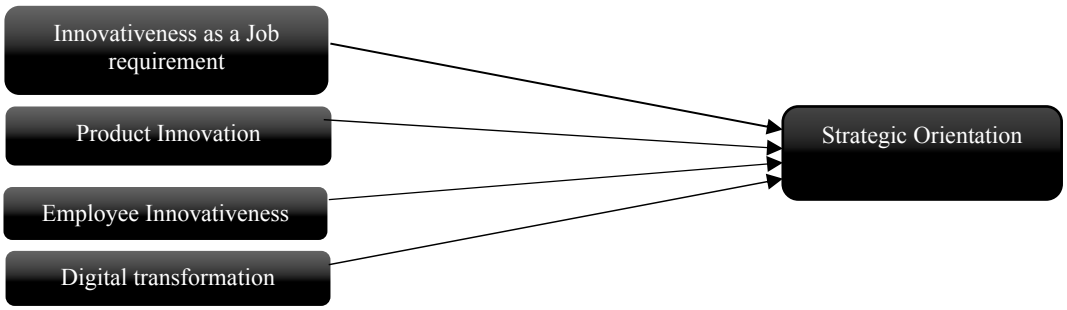

Figure 1 – Research Model

Methodology

This study used quantitative method, namely a survey. It enables to gather data from different groups of multitude of genders, ages and levels of education. The survey was created through Google forms and distributed through social networks such as: Instagram, Telegram, WhatsApp. Since the topic of innovation concerns every modern person, the survey was conducted among different segments of the population. The total amount of participants is 69.

The survey began with general questions and then consisted of 5 variables. There were 5 questions in each block. All questions are listed in Appendix. The answers were presented in the form of a likert skale, where 1 – completely disagree, and 5 – completely agree. Since the questionnaire was conducted in Kazakhstan, all questions were translated into Russian for better understanding.

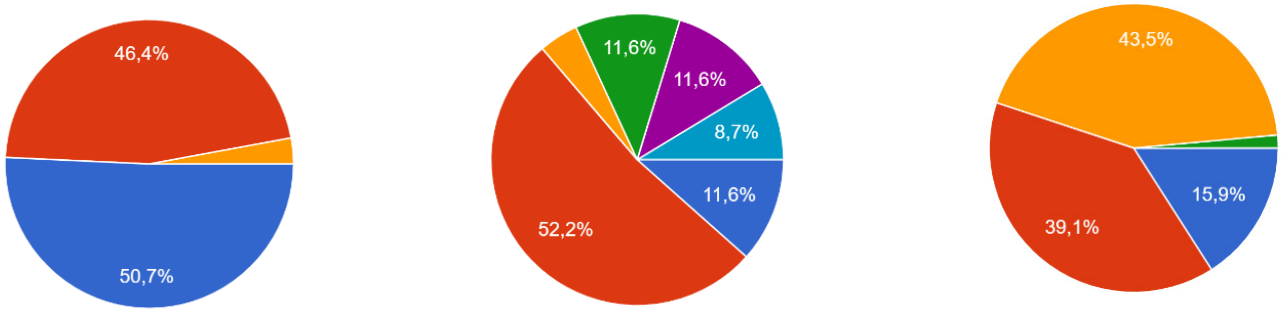

Figure 2 – Gender, Age and Level of education of respondents respectively

The first picture shows the gender of the participants. Both sexes took part in the survey approximately equally, but the number of male respondents is higher. 50.7% of respondents were men, while women were 46.4%. There was also an answer I prefer not to answer, which was chosen by 2.9% of the participants (Fig.2).

Slightly more than half of the participants, namely 52.2% were between ages of 19 and 25. Three age groups: under 18 years old, 36-45 and 46-55 were the same number of the total amount (11.6%). Then there were people over 55 (8.7%). The smallest number of participants was between the ages of 26 ang 35 – 4.3%. Most people have higher (43.5%) or incomplete higher education (39.1%). Only 15.9% of respondents have an average level og education (Fig.2).

A scale designed by Yuan and Woodman was used to assess how innovativeness is considered a part of job duties. It included questions like: "My job duties include searching for new technologies and techniques". Setyawati's et al. scale helped to evaluate the level of product innovation. The scale featured questions such as: "Products/services we sell are unique". The Scott and Bruce's scale assessed the innovativeness of employees in their workplace. It included items like: "I create new ideas for difficult issues". A scale created by Nasiri et al. was used to evaluate digital transformation. It included questions such as: "In our company, we aim to digitalize everything that can be digitalized". Khan's et al. scale was developed to evaluate the company's strategic orientation. It consists of questions such as: "It is easy for us to "promptly detect shifts in our markets.

Results and discussion

Descriptive statistics. The statistics for six variables span over 69 observations according to this table. Gender data exhibits a mean of 0.478 which shows that gender values of 0 and 1 are distributed evenly while its standard deviation measures 0.503 (Table 1). The variables Innovativeness as a Job requirement, Product Innovation, Employee Innovativeness, Digital Transformation and Strategic Orientation have their ratings distributed on a scale of 1 to 5. Variables obtained mean results from 3.800 (IaJR) to 4.067 (SO) with standard deviation levels between 0.844 to 1.001. Respondents provided mainly positive evaluations that showed average yet controlled disposition across the sample.

Table 1 – Descriptive statistics

Statistic	N	Mean	Std. Dev.	Min	Max
Gender	69	0.478	0.503	0	1
IaJR	69	3.800	0.970	1.000	5.000
PI	69	3.864	1.001	1.000	5.000
EI	69	3.930	0.901	1.000	5.000
DT	69	4.012	0.893	1.000	5.000
SO	69	4.067	0.844	1.000	5.000

Correlation table. The table 2 shows how strongly and what direction the variables Innovativeness as a Job requirement (IaJR), Product Innovation (PI), Employee Innovativeness (EI), Digital Transformation (DT) relate to Strategic Orientation (SO).

A high level of digital transformation creates the strongest association with more developed strategic orientation among all independent variables. The positive correlation between SO and DT reaches 0.8589 in this evaluation. The relationship between product innovation and strategic orientation exhibits a cubstantial positive value of 0.7576 according to the examination. Companies that prioritize employee innovativeness as a recruitment criterion exhibit a significant relationship (0.7355) to their strategic orientation as gauged by SO. Employee innovativeness contributes significantly to organization strategy according to the correlation measurement of 0.8143.

Table 2 – Correlation table

	IaJR	PI	EI	DT	SO
IaJR	1.0000	0.7217	0.6875	0.7314	0.7355
PI	0.7217	1.0000	0.8457	0.7487	0.7576
EI	0.6875	0.8457	1.0000	0.7580	0.8143
DT	0.7314	0.7487	0.7580	1.0000	0.8589
SO	0.7355	0.7576	0.8143	0.8589	1.0000

Boxplots and p-values. All the boxplots demonstrate the distribution of strategic orientation by gender (1 – females and 0 – males) across various aspects of innovation (Innovativeness as a Job requirement, Product Innovation, Employee Innovativeness and Digital Transformation). For all variables, the medians are at more or less the same level (around 4) for men and women, which means that the ratings are similar between genders. Nevertheless, there are disparities in the data spread: for females, the propagation of values is wider, which may mean a higher level of picture variance in the perception (Fig. 3).

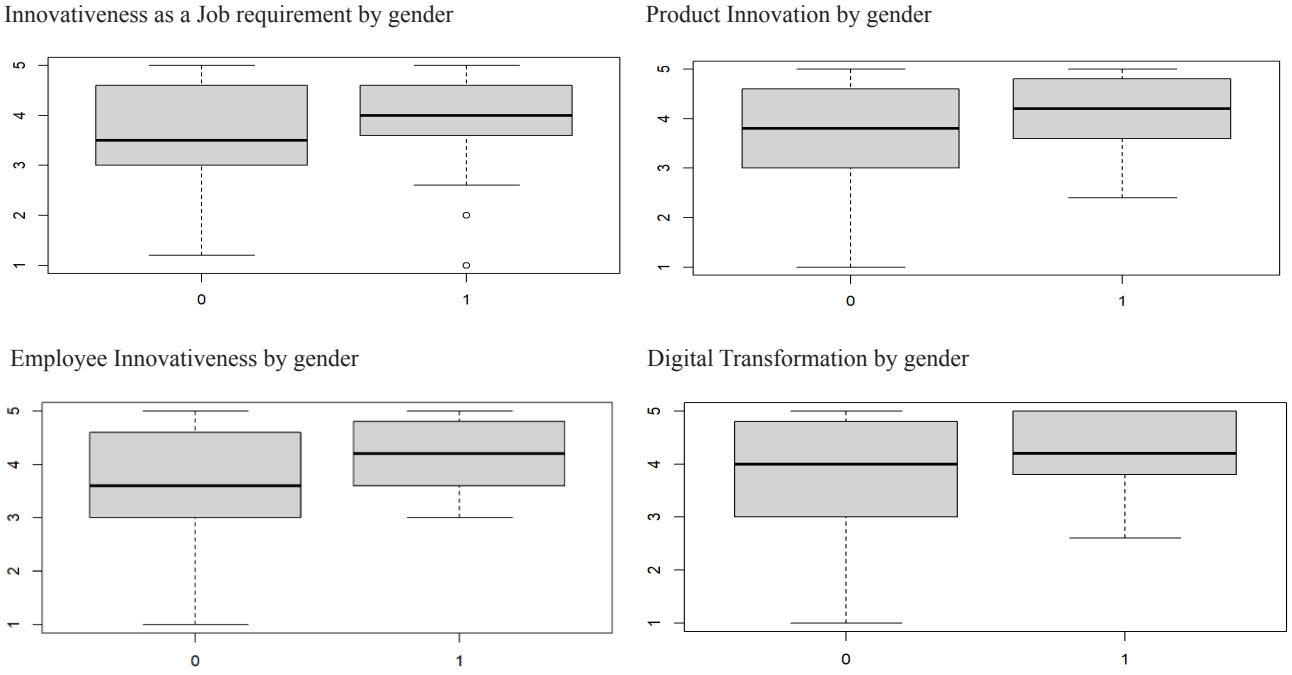

Figure 5 – Boxplots and p-values

Regression model. The regression model required application of the following formula:

$$SO \sim DT + IaJR + EI + PI$$

*Coefficients***.** The intercept value stands at 0.52200 indicating that when all predictor variables equal zero Strategic Orientation measures 0.52200. The Employee Innovativeness variable resulted in a coefficient value of 0.35886. The influence of Employee Innovativeness upon Strategic Orientation amounts to 0.35886 units for each unit of change. The relationship between Employee Innovativeness and Strategic Orientation reaches statistical significance because the p-value (0.00367) lies below 0.01.

Strategic Orientation rises by 0.06863 units when Innovativeness as a Job Requirement increases by one unit according to IaJR. The effect between Employee Innovativeness and Strategic Orientation remains non-statistically significant due to the p-value exceeding 0.05 (0.37827).

No strong correlation exists between Product Innovation and Strategic Orientation based on the obtained coefficient of 0.03032. The computed p-value (0.78306) exceeds 0.05 thus showing that the relationship between variables lacks statistical significance.

According to the statistics Digital Transformation shows a proportionate relationship with Strategic Orientation at 0.43779. Table 3 reveals that the p-value indicates an extremely significant link with a value below 2.2e-16.

Table 3 – Regression Model Coefficents

	Estimate	**Std. Error**	**t value**	**p-value**	**Significance**
(Intercept)	0.52200	0.24918	2.095	0.04015	*
EI	0.35886	0.11897	3.016	0.00367	**
IaJR	0.06863	0.07735	0.887	0.37827	
PI	0.03032	0.10967	0.276	0.78306	
DT	0.43779	0.08890	4.925	6.25e-06	***

According to pic EI and DT are statistically significant predictors of Strategic Orientation, while IaJR and PI are not.

Model Fit. The Residual Standard Error value at 0.4142 represents the typical deviation of observed values from estimated values. A model with reduced values indicates better prediction accuracy. The multiple R-squared value indicates 77.33% of Strategic Orientation variance that the model effectively explains (Table 4). Adjusted R-squared reached 0.7592 due to the introduction of model predictors in the statistical analysis. The model demonstrates statistical significance while effectively explaining a large portion of Strategic Orientation changes through an **F-statistic value** of 54.59 and a remarkably low **p-value** less than 2.2e-16.

Table 4 – Model Fit

Statistic	**Value**
Residual Standard Error	0.4142 (df = 64)
Multiple R-squared	0.7733
Adjusted R-squared	0.7592
F-statistic	54.59 (df = 4, 64)
p-value	< 2.2e-16

Strategic Orientation receives substantial positive correlations from Employee Innovativeness and Digital Transformation yet shows no significant influence from Innovativeness as a Job Requirement and Product Innovation in this particular context.

The model effectively aligns with the data points since it accounts for more than 77% of Strategic Orientation.

Conclusion

The research focused on analyzing the impact of Innovativeness as a Job requirement and Product Innovation alongside Employee Innovativeness and Digital Transformation on Strategic Orientation. The findings from regression research demonstrated Employee Innovativeness coupled with Digital Transformation play substantial role in shaping Strategic Orientation because organizations with advanced innovation among staff and sophisticated digital operations perform better in developing market-aligned strategic guidelines.

The research shows that Strategic Orientation remains independent from both Innovativeness as a Job Requirement and Product Innovation. The specific nature of the examined industry alongside the selected sample might be the cause of this result. Strategic Orientation demonstrates a 77% variance between Employee Innovativeness along with Digital Transformation which functions as essential variables to reach business outcomes across contemporary organizations.

Limitations and Future research. The validity of the results may be affected by the cross-sectional design, which does not allow researchers to establish casual joins between studied variables. Longitudinal research methods would offer better comprehension of the relationship between internal factors through time monitoring. The researchers assessed a restricted demographic from Kazakhstan exclusively. The research would benefit from conducting surveys of numerous participants from various geographic areas across different industries to create stronger research findings.

Other researchers should incorporate qualitative investigation tools, such as interviews or case studies in future research to help them understand the operational processes that shape strategic orientation.

This study proves that business success requires organizations to prioritize innovation development combined with digital transformation to build their strategic orientation in contemporary competitive markets. The organizations which focus on these aspects develop stronger readiness to succeed over extended periods.

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Appendix. Survey Items Used in the Study

Innovativeness as a Job requirement

1. My job duties include searching for new technologies and techniques.
2. Introducing new ideas into the organization is part of my job.
3. I don't have to be innovative to fulfill my job require ments. (reverse-coded)
4. My job requires me to try out new approaches to problems.
5. Suggesting new ideas is part of my job duties.

Product innovation

1. Products/services we sell are unique
2. Products/services are able to compete and outperform among other
3. Product/service has its own variation of innovation compared to other
4. Products/services have a different sales power value than others.
5. Products/services involved new materials and technology

Employee innovativeness

1. I create new ideas for difficult issues
2. I promotes and champions ideas to others
3. My workplace provides opportunities for acquiring approval to innovative ideas
4. Workplace culture provides opportunities to evaluating the utility of innovative ideas
5. I develop adequate plans and schedules for the implementation of new idea

Digital Transformation

1. In our company, we aim to digitalise everything that can be digitalised.
2. In our company, we collect massive volumes of data from different sources.
3. In our company, we aim to create stronger networking between the different business processes with digital technologies.
4. In our company, we aim to enhance an efficient customer interface with digitality.
5. In our company, we aim to achieve information exchange with digitality.

Strategic Orientation

1. At my workplace “management and employees encourage each other to (learn to) innovate and to show creativity and daring.
2. It is easy for us to “promptly detect shifts in our markets.
3. Compared to our “major competitors, we place more emphasis on customers of the future, as opposed to existing customers.
4. “In our company, we regularly look for new markets
5. “Our market research efforts are aimed at obtaining information about customers’ needs in the future, relative to their current needs.

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PROFESSIONAL CHOICE OF HIGH SCHOOL STUDENTS AND FACTORS OF CHANGE

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Abstract. *Purpose.* This article investigates the factors influencing career choices among high school students in Kazakhstan, with a particular focus on the impact of gender and school type. The study aims to identify the key motives and conditions shaping students' professional self-determination during adolescence.
Design/methodology/approach. The research is grounded in sociological and psychological theories, including the theory of professional self-determination and the concept of professional identity. A quantitative sociological survey was conducted among 9th and 11th grade students from both urban and rural schools. The sample included 1,000 students aged 15 to 17, selected through targeted sampling based on region, school type, and gender. Data were collected using a structured questionnaire.
Findings. The findings reveal that career choices among students are significantly influenced by a range of social and institutional factors, such as family background, education system characteristics, and labor market conditions. The study also identifies notable differences in career preferences by gender and school type, underscoring the importance of tailoring career guidance to individual socio-demographic contexts.
Originality. This study contributes to the understanding of professional orientation processes in Kazakhstan by providing empirical insights into the diverse factors that shape students' career decisions. It highlights the need for differentiated and personalized career support strategies in educational policy and practice.
Key words: career choice, sociological survey, career guidance, professional self-determination.

Introduction

Choosing a career plays a crucial role in shaping professionals who align with the future demands of the labor market. Conventional approaches to career selection are increasingly resulting in inefficient job placement. In light of ongoing global socio-economic shifts and the transition toward Society 5.0 – a highly intelligent and digitally integrated society – there is an urgent need to create innovative models and methods for career decision-making that reflect the growing impact of digital technologies across various sectors. Making the right choice is not an easy task. On the one hand, current trends in labor market changes and the requirements for a specialist of the future society demand that young people correctly assess their professional preferences and abilities. At the same time, rising attention must be given to preparing professionals in emerging sectors of the economy, driven by labor market demands. Consequently, traditional occupations are steadily disappearing, current roles are being reshaped, and brand-new professions are emerging.

A person's professional interests, beliefs, and value systems are shaped throughout the socialization process, influenced by factors such as family environment, educational institutions, social circles, and media exposure. The perception of a future profession largely determines the possibilities for personal professional growth and the effective socio-economic development of each society. In the consciousness of high school students professions hierarchy is formed according to their attractiveness and preferences, differentiated depending on their social background, place of residence, social attitudes, and other factors.

The process of choosing a career is inherently social, involving an individual's understanding of the

societal structure of professional labor, awareness of various occupations, and the competencies required for them. It also includes knowledge about how to gain these competencies and opportunities to apply them effectively (Mansurov & Yurchenko, 2013). Career decision-making can be categorized into two stages: the initial stage, marked by actions like enrolling in a specific educational program, and the subsequent stage, which involves entering the workforce and starting a professional career. Decision-making in the career choice process is associated with the establishment of all possible options at each stage. M. Weber (2016) suggests that individuals make career decisions influenced by traditions, rational goals, emotional or charismatic motivations. Among these, one distinct category includes factors related to the perceived prestige of a profession, where the choice is shaped by its societal status.

Literature review

Professional self-identification, a key developmental task during adolescence, inherently involves making a career decision. This process is shaped by the social context in which high school students find themselves as they approach adulthood. While career choice has historically been significant for graduates of any era, the current landscape–marked by rapid and unpredictable global changes–has significantly altered this process. The once-common notion of lifelong employment, typical of older generations, is now outdated. The labor market is evolving swiftly to meet shifting societal needs and advancements in digital and communication technologies. As new fields such as IT genetics, bioethics, and smart environment design emerge, traditional roles like accounting are being phased out or dramatically transformed. Consequently, today's students must be ready to adapt, potentially changing their career paths multiple times throughout their professional journey.

A wide range of research indicates that the phase of deciding on a future career can be psychologically challenging for many high school students. Adolescents frequently view this time as overwhelming, often marked by emotional discomfort, increased anxiety, and uncertainty about what lies ahead. Many students are not yet fully equipped to make independent and informed career decisions. These challenges tend to arise regardless of their school type or geographical location. Factors such as psychological stability and confidence in career decisions are shaped not only by external influences but also by personal attributes–such as value systems, consistent intellectual interests, clarity of career goals, self-awareness of strengths, social competence, and the ability to adapt to rapidly shifting environments.

The selection of a future profession is shaped by a combination of internal and external factors. In today's rapidly changing society, high school students face greater challenges in professional self-determination than those who matured during the more predictable and structured Soviet period, which operated within an industrial economic framework. Studies have shown that contemporary youth often feel less assured in their career decisions compared to earlier generations. This uncertainty is largely linked to the modern labor market's complexity–marked by a wide range of professions, constant transformation, and fierce competition. Moreover, in a society undergoing continual transition, the older generation is often unable to provide reliable career advice, as they too struggle to navigate the evolving professional landscape. Consequently, making informed career decisions has become a significantly more demanding process for today's students than it was in the past (Danilova, 2021).

One of the key macro-level influences on graduates' career decisions is the prevailing socio-economic environment of the time. For instance, during the challenging post-war period (1947–1948), when there was an urgent demand for labor, nearly a third of Moscow's school leavers opted for industrial professions (Ariskina, 1952). In the early 1960s, amid industrial expansion and the onset of the space age, students gravitated toward engineering, technical, and humanities-related fields. However, by the mid-1980s, interest had shifted notably toward service-oriented and humanities disciplines, which had previously held a lower status among students (Mkrtchyan & Chirikova, 1985). Recent studies reveal that today's students are mostly attracted to careers that involve interpersonal communication–so-called "person-to-person" roles. In contrast, technical fields and those involving nature are less popular. The most appealing career paths now include creative industries, IT, and education. This preference corresponds with the knowledge-driven, tech-based modern economy and reflects students' aspirations for personal growth and creativity (Danilova, 2021). Notably, attitudes toward educational careers have undergone a major transformation: once unpopular in the early 2000s (Azbel, 2004), professions in teaching and childcare–like school teaching, language tutoring, and coaching–have risen to become top choices among students.

The analysis of the results allows to identify several key motives that influence high school students' career choice (Moriyasu et al., 2022):

- Material motives. Many high school students aim to choose a profession that offers a stable income and financial security. The opportunity to earn decent money and spend it on personal needs, interests, and pleasures is a significant factor for this group.

- Interest in the profession. A considerable number of students are guided by genuine interest in a profession. They want to enjoy their work, engage in activities that inspire them, and pursue what truly fascinates them. Such interest often stems from hobbies, favorite school subjects, or personal experiences.

- Prestige and status. When making a career choice, high school students often take into account the level of respect and prestige associated with a profession. The desire to hold a high-status job that earns social recognition and respect is a powerful motivation for many.

- Interest in a broader domain: Rather than selecting a specific job, some high school students are drawn to general spheres of interest–such as science, the arts, healthcare, athletics, or social services–guided by their personal inclinations.

- Influence of family and social surroundings: Career preferences are often shaped by parents, teachers, peers, and relatives. Family members may suggest certain career directions, while educators and classmates can serve as examples or motivators.

- Assessment of realistic options: A number of students base their career choices on their current competencies, educational background, and accessible opportunities, making decisions that reflect a practical evaluation of their chances for success in a given profession.

Additionally, some research explores how career decision-making difficulties vary depending on high school students' locus of control. Research has shown that students with an external locus of control are more likely to face difficulties during career choice. They score higher on the scale of professional difficulties, especially in connection with a lack or contradiction of information. In contrast, students with an internal locus of control tend to make decisions more logically and confidently, experiencing fewer internal conflicts. High school students with a high level of self-control encounter fewer difficulties in making career choices. Those with an external locus of control often wait for external support and feel insecure, which complicates the process of career self-determination (Kırdök and Harman, 2018).

Modern high school students face a number of challenges in transitioning from school education to further academic or vocational training. In the context of significant changes in the economy and labor market, there is little convincing evidence that educational systems are effectively adapting to these challenges. Despite efforts to modernize curricula and expand access to higher education, a significant portion of students continues to struggle to understand the connection between the subjects they study at school and real-world professions. This situation is particularly aggravated for students who already lack motivation: those who do not think about their future careers tend to place less value on school subjects, which may explain their poor academic performance. As research has shown, students with low academic achievement and those who drop out prematurely are more likely to experience difficulties during the transition to adult life. Efforts to shape career aspirations in such students are likely to be ineffective without changes to the school experience itself, especially in terms of the accessibility and practical relevance of knowledge. To successfully implement such initiatives, it is essential to better understand which career-related educational opportunities are offered to students who are undecided about their future, how the quality of these opportunities compares with those available to other students, and to what extent they meet the needs of different groups of learners (Galliott et al., 2013).

A study on the factors influencing career choice in the STEM fields (science, technology, engineering, mathematics) among students identified both interpersonal and intrapersonal factors. The most significant influences were interpersonal – especially from family. This highlights the need to consider family support when developing strategies to attract students to STEM fields. Students also pointed to personal qualities, interest in the profession, self-efficacy, as well as moral and spiritual values as reasons for choosing a career in STEM. These findings confirm the importance of individual cognitive and personal factors in the process of career self-determination. It is especially important to consider not only cognitive aspects, but also cultural and value-based factors when further studying the motivation behind choosing professions in the STEM sphere (Abe and Chikoko, 2020).

Methodology

This article outlines the findings of a survey carried out in 2023 throughout various regions of Kazakhstan, encompassing major urban centers such

as Astana, Almaty, Shymkent, Semey, and Pavlodar. The research focused on 9th and 11th grade students attending high schools. Data collection was primarily conducted through in-person questionnaires administered to students from both urban and rural schools. This approach was chosen to gather in-depth insights into students' career preferences and the reasons influencing their professional decisions. The demographic composition of the student sample was determined using official secondary education statistics provided by the Ministry of Education and Science of the Republic of Kazakhstan. A targeted sampling method was used, with the criteria for selection being region of residence, type of school, and gender.

The sample size is 1000 respondents aged 15-17 years. The strucrure of sample is presented in the table 1.

It is important to note that the study sample includes both urban and rural high school students, as well as those from private (paid) and public schools, including both general education and specialized (advanced) schools. This allows for a more comprehensive understanding of the factors influencing high school students' decisions regarding their further educational paths.

This study presents new results on the study of career choice motivations among high school students in urban schools. However, it has certain limitations related to the use of the quantitative method. Since this method does not allow for the deep outlining of motivations in the context of different social groups of high school students, in comparison to interviews, it does provide an overview of the general trend characterizing the motivations of career choice among high school students.

Research Results. The findings reveal that a significant portion of high school students have made decisions regarding their future careers to some extent: 59.7% have made a firm choice, while 30.5% are mostly certain about their decision. The proportion of those who have not decided on a career choice is 9.9%. An analysis by gender revealed no statistically significant differences in professional self-determination. The data are presented in Table 2.

Table 1 – Structure of the sample

Varibles	Values	Distribution
Gender	Male	49%
	Female	51%
Grades	9th grade	50.9%
	11th grade	49.1%
Regions	Western	17%
	Southern	16%
	Nothern	13.2%
	East	11.7%
	Central	8.5%
Cities	Astana	9.7%
	Almaty	10.7%
	Shymkent	13.1%
Type of school	Public school	54,7%
	Specialized (lyceum, gymnasium, NICHE, private)	35,3%

Table 2 – Distribution of responses to the question "Have you decided on your career choice?" by gender

№	Response options	Gender		Total Sample
		Male	Female	
1	Yes	60,7%	58,7%	59,7%
2	Rather yes	29,4%	31,5%	30,5%
3	No	9,9%	9,8%	9,9%

Analysis of the question "Have you decided on your career choice?" by school type demonstrates that high school students from specialized schools are more likely to have made their decision. Among students in specialized schools, 64.0% have made a career decision, whereas this figure drops to 58.9% for those in general education institutions. Uncertainty about career choice is more common among students from public schools, where 10.2% remain undecided, compared to 8.1% in specialized schools. The data are presented in Table 3.

Table 3 – Distribution of responses to the question "Have you decided on your career choice?" by school type

№	Response options	School type	
		Public school	Specialized
1	Yes	58,9%	64,0%
2	Rather yes	30,9%	27,9%
3	No	10,2%	8,1%

According to analysis of respondents' answers to the question "Have your professional preferences changed over the past 3 years?" most high school students have changed their professional preferences at varying degrees: 45.3% changed significantly and 39.2% – slightly. Only 11.8% of all respondents did not change their professional preferences over the past 3 years. The share of students who did not have defined professional preferences is 3.6%, while all other students had determined their professional preferences. The data are presented in Table 4.

Table 4 – Distribution of responses to the question "Have your professional preferences changed over the past 3 years?"

№	Response options	**Persentage, %**
1	Yes, significantly	45,3
2	Yes, slightly	39,6
3	No	11,8
4	I did not have any	3,6

The majority of surveyed students (84.5%) changed their initial professional preferences at varying degrees over the past three years. Analysis of the factors that influenced these changes shows that the top three positions are occupied by: changes in the labor market and demand for professions – 38.0%, advice from parents, relatives, and friends – 37.8%, and job availability in different employment sectors – 37.1%. The significance of these factors in the transformation of students' professional preferences indicates that they are highly responsive to labor market changes and employment opportunities during the process of career self-determination. The least significant factor in changing professional preferences is the activities of universities and colleges in attracting applicants. Only 4.8% of all respondents noted this as a factor that influenced their decision to change their professional preferences. Data are presented in Table 5.

Comparison of the significance of factors influencing the change in high school students' professional preferences over the past 3 years by gender demonstrates that there are no statistically significant differences. There are minor differences in the ranking of the following factors: (1) availability of employment in various sectors, (2) information on the Internet and in Media, (3) work of universities and colleges in attracting applicants.

Table 5 – Factors influencing the transformation of high school students' professional preferences over the past 3 years

№	**Factors**	**Persentage, %**
1	Changes in the labor market and demand for professions	38,0%
2	Advice from parents, relatives, and friends	37,8%
3	Availability of employment in various sectors	37,1%
4	Changes in personal interests related to self-realization	34,6%
5	State educational policy (support for universities, number of grants, etc.)	31,5%
6	Information on the Internet and in Media	26,9%
7	Independently obtained information from educational institutions' websites	12,0%
8	Work of universities and colleges in attracting applicants	4,8%

Table 6 – Factors influencing the transformation of high school students' professional preferences over the past 3 years by gender of respondents

№	Factors	Gender	
		Male	Female
1	Changes in the labor market and demand for professions	16,7%	16,4%
2	Advice from parents, relatives, friends	16,6%	16,4%
3	Availability of employment in various sectors	15,2%	17,0%
4	Changes in one's interests related to self-fulfillment	15,6%	14,6%
5	State educational policy (support for universities, number of grants, etc.)	13,7%	13,7%
6	Information on the Internet and in Media	11,3%	12,1%
7	Independently obtained information from educational institutions' websites	5,0%	5,5%
8	Career guidance at school	3,1%	2,8%
9	Work of universities and colleges to attract applicants	2,8%	1,5%

The analysis of recent changes in students' professional preferences by school type shows that both groups prioritize similar factors, though the degree of influence varies (Table 6). Labor market trends and the shifting demand for specific professions hold slightly more weight for students in specialized schools compared to those in general education institutions. Government policies related to education, such as support for universities and grant distribution, also have differing levels of importance. Additionally, online resources and mass media appear to play a less significant role for students in specialized schools than for their peers in general schools. Still, in both school types, this factor consistently ranks among the top three most influential drivers behind changing career preferences.

Table 7 – Factors influencing the transformation of high school students' professional preferences over the past 3 years, by school type and language of instruction

№№	Factors	School type		Language of leaning	
		Public	Specialised	Kazakh	Russian
11	Changes in the labor market and demand for professions	16,0%	19,9%	17,4%	15,8%
22	Advice from parents, relatives, and friends	16,7%	15,1%	16,1%	16,8%
43	Availability of employment in various areas of activity	16,3%	15,6%	16,1%	16,2%
44	Changes in personal interests related to self-fulfillment	15,2%	14,5%	14,4%	15,7%
55	State educational policy (support for universities, number of grants, etc.)	13,4%	15,6%	14,1%	13,4%
66	Information from the Internet and information media	12,2%	8,6%	13,4%	10,2%
77	Independently obtained information from educational institution websites	5,1%	5,9%	4,8%	5,6%
88	Career guidance at school	3,0%	2,7%	2,3%	3,5%
99	Activities of universities and colleges to attract applicants	2,1%	2,2%	1,5%	2,7%

Similarly, government education initiatives–such as university support and grant allocation–hold greater influence for students in specialized schools than for those in general education institutions, with respective rates of 15.6% and 13.4%. In contrast, digital and media-based sources of information play a smaller role for specialized school students: only 8.6% consider them impactful in reshaping their career views, compared to 12.2% of students from general education schools. Detailed figures can be found in Table 7.

Results and discussion

The professional self-determination of high school students in modern society appears as a complex and multi-layered social process, in which personal aspirations are formed and realized under the influence of a broad system of sociocultural, economic, and institutional factors. From a sociological perspective, career choice cannot be viewed solely as an act of individual rational decision-making; on the contrary, it represents the interaction between structural conditions, social status, family culture, and the educational environment.

The analysis of the obtained data demonstrates that high school students' professional expectations are increasingly being formed in a context of uncertainty and instability, which is characteristic of post-industrial society. Young people perceive their professional future not as a predetermined trajectory, but as a variable and fragmented domain, in which they must navigate through symbolic rather than institutionally fixed reference points. This situation stems from the decline of conventional support systems related to career decision-making–such as guidance from schools and families–along with the insufficient development of effective career orientation tools. Amid ongoing cultural and economic shifts, high school students are becoming more dependent on their personal definitions of success and are developing their own adaptive strategies to cope with the fast-paced changes in their environment.

The social context of career choice demonstrates a significant dependence on the socioeconomic status of the family, educational opportunities, and the availability of cultural capital. The orientations of high school students reflect both their desire for social mobility and an awareness of the structural constraints that define the boundaries of what is possible. Moreover, there is a shift in the perception of the very category of profession: it is losing its stability and becoming part of a broader identity construct that includes ideas about self-fulfillment, freedom of choice, and symbolic status.

The dynamics of professional preferences also indicate changes in the value system of adolescents, where increased importance is placed on areas related to social interaction, self-development, and creativity. At the same time, tension remains between individual expectations and the real opportunities for their realization, which are determined both by structural factors and by high school students' insufficient awareness of labor market demands.

Thus, the professional self-determination of high school students in modern society is formed at the intersection of individual intentions and social conditions, where a decisive role is played not only by internal motivations but also by access to symbolic and institutional resources.

Conclusion

Contemporary society presents high school students with ever-evolving and multifaceted challenges, particularly in the area of career self-determination. The research revealed that making a career decision is a layered process, shaped not only by students' internal motivations but also by external influences such as family, the education system, and labor market conditions. The main trends are a decline in high school students' confidence in their career choice, the growing role of subjective factors (interest, prestige, values), as well as a transformation of the concept of a career. High school students no longer perceive a profession as a destiny chosen once and for all, but rather as a path where change and adaptation are possible. In these conditions, the development of flexible planning skills, self-awareness, resilience to uncertainty, and readiness for lifelong learning becomes especially important. At the same time, schools and the educational system as a whole should create more favorable conditions for career choice: through the integration of practice-oriented modules, individual guidance, and broader access to information about real professions.

Choosing a profession while in high school is a complex and dynamic journey shaped by social influences and personal characteristics. Improving the effectiveness of vocational guidance requires a holistic approach that considers the specifics of the school environment, the psychological and developmental aspects of teenagers, and the continuous evolution of labor market conditions.

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