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05.01.00 – Axborot texnologiyalari, boshqaruv va kompyuter grafikasi
05.01.01 – Muhandislik geometriyasi va kompyuter grafikasi. Audio va video texnologiyalari
05.01.02 – Tizimli tahlil, boshqaruv va axborotni qayta ishlash
05.01.03 – Informatikaning nazariy asoslari
05.01.04 – Hisoblash mashinalari, majmualari va kompyuter tarmoqlarining matematik va dasturiy ta'minoti
05.01.05 – Axborotlarni himoyalash usullari va tizimlari. Axborot xavfsizligi
05.01.06 – Hisoblash texnikasi va boshqaruv tizimlarining elementlari va qurilmalari
05.01.07 – Matematik modellashtirish
05.01.11 – Raqamli texnologiyalar va sun'iy intellekt
05.02.00 – Mashinasozlik va mashinashunoslik
05.02.08 – Yer usti majmualari va uchish apparatlari
05.03.02 – Metrologiya va metrologiya ta'minoti
05.04.01 – Telekommunikasiya va kompyuter tizimlari, telekommunikasiya tarmoqlari va qurilmalari. Axborotlarni taqsimlash
05.05.03 – Yorug'lik texnikasi. Maxsus yoritish texnologiyasi
05.05.05 – Issiqlik texnikasining nazariy asoslari
05.05.06 – Qayta tiklanadigan energiya turlari asosidagi energiya qurilmalari
05.06.01 – To'qimachilik va yengil sanoat ishlab chiqarishlari materialshunosligi
05.08.03 – Temir yo'l transportini ishlatish
05.08.06 – "G'ildirakli va gusenisali mashinalar va ularni ishlatish" (texnika fanlari)
05.09.01 – Qurilish konstruksiyalari, bino va inshootlar
05.09.04 – Suv ta'minoti. Kanalizatsiya. Suv havzalarini muhofazalovchi qurilish tizimlari
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10.00.04 – Yevropa, Amerika va Avstraliya xalqlari tili va adabiyoti
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08.00.02 – Makroiqtisodiyot
08.00.03 – Sanoat iqtisodiyoti
08.00.04 – Qishloq xo'jaligi iqtisodiyoti
08.00.05 – Xizmat ko'rsatish tarmoqlari iqtisodiyoti
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08.00.08 – Buxgalteriya hisobi, iqtisodiy tahlil va audit
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08.00.15 – Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 – Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 – Turizm va mehmonxona faoliyati

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Abstract. This paper examines the institutional barriers affecting the formation of competitive advantages of small businesses in the digital environment. Particular attention is paid to expanding access to financial resources, developing digital skills, improving infrastructure, simplifying regulatory mechanisms, and strengthening cybersecurity. The study examines how these factors influence the ability of small enterprises to adopt digital technologies and strengthen their market position. It also outlines key directions for improving the institutional environment and supporting the sustainable development of small businesses in the digital environment in Uzbekistan.

Keywords: small business, competitive advantages, institutional barriers, digital environment, digitalization, entrepreneurship, Uzbekistan.

Annotatsiya. Ushbu tezisda raqamli muhitda kichik biznes subyektlarining raqobat ustunliklarini shakllantirishga ta'sir etuvchi institutsional to'siqlar ko'rib chiqilgan. Asosiy e'tibor moliyaviy resurslardan foydalanish imkoniyatlarini kengaytirish, raqamli ko'nikmalarni rivojlantirish, infratuzilmani takomillashtirish, tartibga solish mexanizmlarini soddalashtirish va kiberxavfsizlikni mustahkamlash masalalariga qaratilgan. Ushbu omillarning kichik korxonalar tomonidan raqamli texnologiyalarni joriy etish va bozordagi mavqeyini mustahkamlash imkoniyatlariga ta'siri o'rganilgan. Shuningdek, O'zbekistonda institutsional muhitni takomillashtirish va kichik biznesning raqamli muhitda barqaror rivojlanishini qo'llab-quvvatlashning asosiy yo'nalishlari yoritilgan.

Kalit so'zlar: kichik biznes, raqobat ustunliklari, institutsional to'siqlar, raqamli muhit, raqamlashtirish, tadbirkorlik, O'zbekiston.

INTRODUCTION

Small businesses play an important role in employment, innovation, and economic growth. At the same time, digital transformation is changing the conditions of competition and creating new requirements for enterprises. Digital technologies provide opportunities to reduce costs, improve customer relations, and enter new markets, but their adoption can be difficult for small businesses due to limited financial and human resources.

The competitiveness of small enterprises therefore depends not only on their internal capabilities but also on the quality of the institutional environment. Access to finance, digital infrastructure, professional skills, clear regulations, and secure digital services determine how effectively enterprises can use modern technologies. These issues are particularly relevant for Uzbekistan, where the digital transformation of the economy is creating new opportunities for entrepreneurship while requiring further development of the conditions necessary for small businesses to adapt.

In this context, identifying the main institutional barriers and developing appropriate mechanisms for their reduction are important for strengthening the competitive position of small enterprises and ensuring their sustainable development in the digital environment.

The institutional environment shapes the conditions in which small businesses develop and make economic decisions. North argues that institutions establish the rules and constraints shaping economic interactions [3]. Baumol also emphasizes the importance of institutional conditions for productive entrepreneurial activity [1]. In the digital economy, these conditions increasingly include access to finance, digital infrastructure, knowledge, and technological services.

One of the main barriers is limited access to financial resources. Digital transformation requires investment in software, equipment, online services, employee training, and cybersecurity. For small enterprises, these costs can slow down technology adoption. Therefore, affordable financing and targeted support are important for encouraging digital investment.

Another significant barrier is the shortage of digital skills. Modern technologies may not fully improve business performance if entrepreneurs and employees lack the necessary competencies. Digital marketing, e-commerce, data analysis, and cybersecurity require continuous professional development. Digital infrastructure is equally important, as reliable internet, electronic payments, and online platforms provide the basic conditions for participation in the digital economy.

Regulatory conditions and cybersecurity also influence the ability of small businesses to operate digitally. Clear rules for e-commerce, taxation, digital payments, and data protection can reduce administrative uncertainty, while effective cybersecurity measures can increase trust in digital services.

These barriers are interconnected. Limited finance can restrict technology adoption, while insufficient skills reduce the effectiveness of available technologies. Therefore, institutional support should combine financial, educational, infrastructural, and regulatory measures rather than focus on a single factor.

OECD research shows that digitalization can improve small and medium-sized enterprise (SME) productivity, innovation, and market access, while the results depend on enterprises' resources and capabilities [2; 4]. The World Bank also identifies digital infrastructure, skills, and financial inclusion as important conditions for participation in the digital economy [6].

For Uzbekistan, priority should therefore be given to affordable financing for digital transformation, professional training, infrastructure development, clear and streamlined regulations for digital business, and cybersecurity support. Cooperation between government institutions, financial organizations, educational institutions, and technology companies can further strengthen the digital capabilities of small businesses.

CONCLUSION AND SUGGESTIONS

The formation of competitive advantages of small businesses in the digital environment depends on both enterprise capabilities and institutional conditions. Limited finance, insufficient digital skills, infrastructure gaps, regulatory complexity, and cybersecurity risks remain important barriers. For Uzbekistan, addressing these challenges requires coordinated support in financing, digital education, infrastructure, and regulation. Such measures can help small businesses adapt to digital transformation, expand market opportunities, and strengthen their long-term competitiveness.

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