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ENSURING INCLUSIVITY IN FINANCIAL SERVICES: AN INNOVATIVE APPROACH FOR PEOPLE WITH DISABILITIES AND THE ELDERLY THROUGH AI-POWERED ATMs

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ABSTRACT
This article analyzes the issue of enhancing inclusivity in financial services through the example of ATMs equipped with artificial intelligence technologies. Particular attention is given to expanding access to financial services for people with disabilities and the elderly, examining the opportunities for service delivery through interactive interfaces, biometric authentication, and voice commands.

KEYWORDS
Artificial intelligence, ATM, financial inclusivity, people with disabilities, elderly, biometric system, voice interface

INTRODUCTION
In the era of digital transformation, the modern banking system demands that financial services be provided openly and under equal conditions for all. In particular, expanding access to banking services for people with disabilities and the elderly has become a pressing issue. In this process, the innovative enhancement of ATM operations through artificial intelligence (AI) technologies plays a crucial role. This article discusses the role, advantages, and future prospects of AI-powered ATMs in ensuring financial inclusivity. Evolution of Artificial Intelligence and ATMs Initially, ATMs were limited to cash withdrawal functions.
Today, they offer a wide range of services including transactions, payments, account management, and even document printing. The integration of artificial intelligence has taken these systems to a new level (see Figure 1).

Figure 1. Evolution of Artificial Intelligence and ATMs

Opportunities for People with Disabilities and the Elderly

AI-powered ATMs offer the following opportunities tailored to the needs of people with disabilities and the elderly:

a) Design Adapted to Physical Limitations. Menus on the screen are displayed with large fonts, high-contrast colors, and audible announcements.

b) Voice Interfaces. For visually impaired users or those unable to read the screen, all menus can be navigated and heard through voice commands.

c) Biometric Authentication. To eliminate difficulties in entering passwords or PIN codes, face recognition or fingerprint scanning options are available.

d) Language Selection Capability. Artificial intelligence remembers the user's previous language choice or automatically detects it.

Social and Economic Significance

- Financial Independence: People with disabilities and the elderly can manage their finances without needing assistance.
- Social Justice: Every individual gains equal access to financial services.
- Cost Reduction: Banks can reduce the number of physical branches while expanding coverage through mobile AI-powered ATMs.

Challenges and Recommendations

Challenges:

- Ensuring the security of biometric data;
- Errors in AI recognition algorithms;
- Lack of internet access and infrastructure deficiencies.

Recommendations:

AI-based ATM systems must be certified according to national legislation requirements protecting personal data. Banks should test AI-ATM functionalities together with people with disabilities and elderly users to implement user-centered design. It is recommended that every commercial bank develop a financial inclusivity strategy and introduce convenient services for vulnerable social groups through AI technologies (see Figure 2).

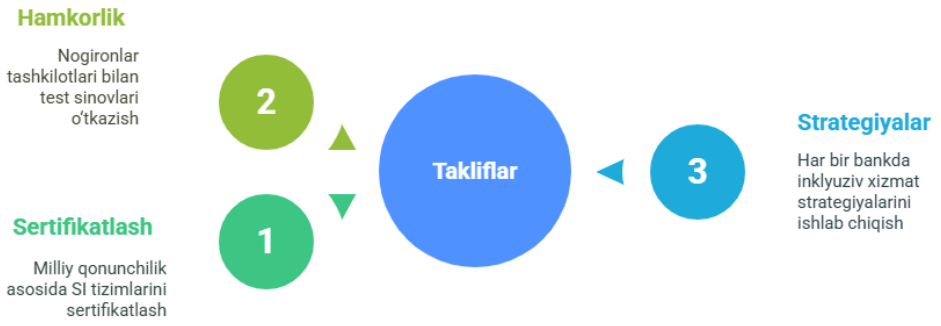

Figure 2. Proposal System for AI-Powered ATMs to Ensure Financial Inclusivity

CONCLUSION

ATMs developed with the help of artificial intelligence have ushered in a new era in the field of financial services. By creating convenience for people with disabilities and the elderly, the level of financial inclusivity is significantly enhanced. In the future, the widespread implementation of these technologies is expected to make banking services even more open and equitable for the entire society.

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