

INNOVATION SCIENCE AND TECHNOLOGY

ISSUE 7, PART 1 / JULY 2026

 Acceptance of papers



**Acceptance of
papers**

Published monthly



Topics

economics,
technology, social
sciences



EDITOR-IN-CHIEF:

Mirzaliyev Sanjar Makhmatjon ugli

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Ochilov Bobur Bakhtiyor ugli – Senior
lecturer at TSUI

THE SCIENTIFIC-POPULAR ELECTRONIC
JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

Editorial board:



Sharipov Kongiratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Abdurakhmanova Gulnora Kalandarovna, Doctor of
Economic Sciences (DSc), Professor



Cham Tat Huei,
Doctor of Philosophy (PhD), Professor (Malaysia)



Muhammad Imran Sadiq
Doctor of Philosophy in Economics (PhD), Professor,
Malaysia



Ahmed Aziz Ismail
Doctor of Technical Sciences (DSc),
Professor (Egypt)



Lee Chin
Doctor of Philosophy in Economics (PhD), (Malaysia)



Asongu Simplice
Doctor of Philosophy in Economics (PhD), Cameroon



Rui Dang
Doctor of Chemistry (DSc), Professor, China



Zahoor Ahmed
Doctor of Philosophy in Economics (PhD), Turkey



Shujaat Abbas
Doctor of Philosophy in Economics (PhD), Russia



Tina A Coffelt
Doctor of Philosophy in Educational Sciences (PhD),
USA



Abdikarimova Dinara Rustamxanovna
Doctor of Economic Sciences (DSc), Professor

Kurbonbekova Mohichehra Turobjonovna
Doctor of Economic Sciences (DSc), Professor

Alimardonov Ilkhom Muzrabshokovich
Doctor of Economic Sciences (DSc), Professor



Razakova Barno Sayfieva
Doctor of Philosophy in Economics (PhD)



Khasanov Sarvar Ulugbek ugli
Doctor of Philosophy in Economics (PhD)



Kholikova Rukhsora Sanjarovna
Associate Professor (PhD)

CONTENTS

PLATFORM MIDDLEWARE-MANAGEMENT: FROM RESOURCE CONTROL TO INTERACTION COORDINATION IN DIGITAL SERVICE ECOSYSTEMS.....	8
Ilgor Abdullayev	
APPROACHES TO IMPROVING KNOWLEDGE EXCHANGE PROCESSES IN INDUSTRIAL CLUSTERS.....	16
Mamadaliyev Anaxxon Ziyodillayevich	
IMPROVING EXPENDITURE ACCOUNTING IN HIGHER EDUCATION INSTITUTIONS	21
Islom Ergash ugli Khonimqulov	
MANAGEMENT OF FOREIGN EXCHANGE AND CONCENTRATION RISKS IN THE OPERATIONS OF COMMERCIAL BANKS	26
Qurbonov Ilhom Jumaqulovich	
WAYS TO IMPROVE THE USE OF NATURAL RESOURCES IN THE DEVELOPMENT OF HEALTH SERVICES.	29
Sobirov Kayum Xamraevich	
REGIONAL BANKING MARKET TRENDS FOR RETAIL DEVELOPMENT	33
Salamov Islom Tashqazaqovich	
REFORMS UNDERTAKEN IN THE REPUBLIC TO INCREASE PRODUCTION CAPACITY AT FOOD INDUSTRY ENTERPRISES	37
Gulmatov Sunnatillo Nurillayevich	
PROSPECTS FOR USING ISLAMIC FINTECH TECHNOLOGIES IN SMALL BUSINESS FINANCING IN UZBEKISTAN	44
Toshxo'jayev Abduqodirxon Abdulmansurxon ugli	
ADAPTIVE CONCEPT OF HUMAN CAPITAL MANAGEMENT: A NEW PARADIGM FOR SUSTAINABLE ECONOMIC GROWTH	51
Dinora Qudrat qizi Yusubboyeva	
MECHANISMS FOR ENHANCING EDUCATION SERVICE QUALITY IN DEVELOPING YOUTH ENTREPRENEURSHIP IN THE ARAL SEA REGION.....	58
Raxmanov Raxmanbergan Abdullayevich	
CONCEPTUAL FOUNDATIONS OF IMPLEMENTING AGILE MANAGEMENT IN PUBLIC ADMINISTRATION	62
Sayfiyev Jasur Ravshanovich	
SCIENTIFIC PERSPECTIVES OF WORLD, EUROPEAN, AND CIS SCHOLARS ON ENTREPRENEURSHIP DEVELOPMENT AND FINANCIAL SUPPORT: A COMPARATIVE ANALYSIS	70
Inobatov Abror Boshlarovich	
SUSTAINABILITY REPORTING AND ESG AUDITING: EMERGING TRENDS IN CORPORATE ACCOUNTABILITY.....	84
Turabekov Bekali, Eshpulatova Zaynab	
ИНДИКАТОРЫ ОЦЕНКИ И МОНИТОРИНГА РАЗВИТИЯ ЖЕНСКОГО ПРЕДПРИНИМАТЕЛЬСТВА В УЗБЕКИСТАНЕ	91
Хусанова Зулфия Рахматуллаевна	
A METHODOLOGICAL APPROACH TO DIGITALIZING INTERNAL AUDIT IN COMMERCIAL BANKS BASED ON THE CONTINUOUS AUDITING CONCEPT	95
Narziyev Xayotjon Azamatovich	
AN AUTHOR'S APPROACH TO THE CLASSIFICATION OF FINANCIAL INVESTMENTS BY MEASUREMENT BASIS FOR ACCOUNTING AND AUDITING PURPOSES	102
Jumamurodov To'libay Yeldashbayevich	
ENHANCING THE CONTINUOUS MONITORING PROCEDURE FOR IDENTIFYING IMPAIRMENT INDICATORS OF NON-CURRENT ASSETS IN JOINT-STOCK COMPANIES.....	107
Fayzullayev Begzod Baxtiyor o'g'li	

THE INTERRELATIONSHIP BETWEEN MATERIALITY AND AUDIT RISK IN PUBLIC-SECTOR INTERNAL AUDITING AND THEIR APPLICATION WITHIN A UNIFIED METHODOLOGICAL FRAMEWORK.....	114
Ismatillayev Baypo'lat Xushvaqtovich	
THE NATURE, DEFINITION AND CLASSIFICATION OF INTERNAL AUDIT OF PUBLIC PROCUREMENT	122
Rajabov Shukhrat Ismayilovich	
A METHODOLOGY FOR THE COMPOSITE ASSESSMENT OF THE MATURITY OF INTERNAL AUDIT FUNCTIONS IN COMMERCIAL BANKS.....	128
Ismailov Azizbek Madaminovich	
THE ECONOMIC SUBSTANCE OF THE CONCEPT OF "RISK-BASED INTERNAL AUDITING" AND THE THEORETICAL FOUNDATIONS OF ITS APPLICATION IN LIGHT INDUSTRY ENTERPRISES	136
Shahlo Mahmatmurodovna Tojiyeva	
THE INSTITUTIONAL MECHANISM FOR THE INNOVATIVE DEVELOPMENT OF THE RAILWAY NETWORK.....	143
Muradov Bakhrom Akramjanovich	
ТЕОРЕТИЧЕСКОЕ ОПРЕДЕЛЕНИЕ ОСНОВНЫХ СТАТИЧЕСКИХ ХАРАКТЕРИСТИК ОПТОЭЛЕКТРОННЫХ ДИСКРЕТНЫХ ПРЕОБРАЗОВАТЕЛЕЙ ПЕРЕМЕЩЕНИЙ С ПОЛЫМИ И ВОЛОКОННЫМИ СВЕТОВОДАМИ.....	148
Умид Садирдинович Холматов	
ИНСТИТУЦИОНАЛЬНЫЙ РАЗРЫВ В ЗАЩИТЕ ЗАЁМЩИКОВ: ЭМПИРИЧЕСКИЙ АНАЛИЗ НАЧИСЛЕНИЯ ПРОЦЕНТОВ И НЕУСТОЙКИ ПОСЛЕ СУДЕБНОГО ВЗЫСКАНИЯ В УЗБЕКИСТАНЕ..	155
Жаксымуратов Бахрам Раджович	
PROSPECTS FOR SMALL BUSINESS DEVELOPMENT IN THE CONTEXT OF THE GREEN ECONOMY.....	164
Abdurakhimov Iskandar Nodirjon o'g'li	
DIGITAL PAYMENT ADOPTION IN TOURISM: FACTORS INFLUENCING ACCEPTANCE IN SAMARKAND, UZBEKISTAN	169
Nazarova Kamola Sultonmurod qizi	

DIGITAL PAYMENT ADOPTION IN TOURISM: FACTORS INFLUENCING ACCEPTANCE IN SAMARKAND, UZBEKISTAN

Nazarova Kamola Sultonmurod qizi

Master's student, Silk Road International University of Tourism and Cultural Heritage, Samarkand, Uzbekistan

ORCID ID: 0009-0002-9676-0436

Phone: +998 88 223 02 15

Corresponding author - E-mail: nazarovakamola609@gmail.com

ABSTRACT. This paper explores the factors driving the adoption of digital payment systems in the tourism industry of Samarkand, Uzbekistan, a UNESCO World Heritage Site, within the context of the country's rapid financial digitalisation under the "Digital Uzbekistan — 2030" strategy. The study applies an integrated approach combining the Technology Acceptance Model (TAM) and binary logistic regression to analyse primary data collected from 150 respondents, including local and foreign tourists, hospitality sector employees, business owners, and managers. The data were collected using a structured bilingual questionnaire in Uzbek and Russian, administered at major tourist complexes and through Google Forms.

The results indicate that digital payment instruments are used by 84.4% of respondents. Foreign tourists (92%) and hospitality workers (93%) are the most frequent users of these platforms, with Uzum and Google Pay being the most widely used services. The binary logistic regression model achieved a classification accuracy of 96.7% (McFadden's $R^2 = 0.810$). Perceived Ease of Use ($OR = 4.351$) and Perceived Usefulness ($OR = 3.344$) were identified as the strongest predictors of adoption, followed by Trust ($OR = 2.163$) and Internet Accessibility ($OR = 1.685$) as the leading contextual enablers.

From the business perspective, the main barriers identified were customer distrust (48%) and high transaction fees (24%). The findings broaden the application of TAM to the tourism industry in transition economies and provide valuable original empirical evidence from Samarkand. The results may support tourism policymakers, telecommunications service providers, and payment service providers in developing digital infrastructure and digital platforms and strengthening consumer confidence in digital tourism services as part of Uzbekistan's broader financial inclusion and digital transformation agenda.

Keywords: digital payments, tourism, TAM, financial inclusion, Uzbekistan, logistic regression, Samarkand, technology acceptance.

ANNOTATSIYA. Mazkur maqolada UNESCOning Butunjahon merosi obyekti hisoblangan Samarqand shahrining turizm sohasida raqamli to'lov tizimlarini joriy etishga ta'sir ko'rsatuvchi omillar O'zbekistonda "Raqamli O'zbekiston — 2030" strategiyasi doirasida moliya sohasini jadal raqamlashtirish jarayoni sharoitida o'rganilgan. Tadqiqotda texnologiyalarni qabul qilish modeli (Technology Acceptance Model — TAM) va binar logistik regressiyani birlashtiruvchi kompleks yondashuv qo'llanilgan. Tahlil Samarqanddagi yirik turistik majmualarda hamda Google Forms orqali o'zbek va rus tillarida tuzilgan strukturaviy so'rovnoma yordamida mahalliy va xorijiy turistlar, mehmondo'stlik sohasi xodimlari, shuningdek, korxona egalari va rahbarlaridan iborat 150 nafar respondentdan to'plangan birlamchi ma'lumotlarga asoslangan.

Natijalar respondentlarning 84,4 foizi raqamli to'lov vositalaridan foydalanishini ko'rsatdi. Xorijiy turistlar — 92 foiz va mehmondo'stlik sohasi xodimlari — 93 foiz mazkur platformalarning eng faol foydalanuvchilari hisoblanadi. Uzum va Google Pay eng ko'p foydalaniladigan platformalar sifatida qayd etilgan. Binar logistik regressiya modelining tasniflash aniqligi 96,7 foizni, McFadden R^2 ko'rsatkichi esa 0,810 ni tashkil etdi. Qabul qilishga ta'sir etuvchi eng kuchli omillar sifatida foydalanishning qabul qilingan qulayligi ($OR = 4,351$) va qabul qilingan foydalilik ($OR = 3,344$) aniqlandi. Ulardan keyingi o'rinlarda raqamli to'lovlarni joriy etishga ko'maklashuvchi asosiy kontekstual omillar sifatida ishonch ($OR = 2,163$) va internetdan foydalanish imkoniyati ($OR = 1,685$) qayd etildi.

Korxonalar faoliyati nuqtayi nazaridan mijozlarning ishonchsizligi — 48 foiz va tranzaksiya komissiyalarining yuqoriligi — 24 foiz asosiy salbiy omillar sifatida aniqlandi. Tadqiqot natijalari TAM modelini o'tish iqtisodiyotiga ega mamlakatlarning turizm sohasida qo'llash imkoniyatlarini kengaytiradi hamda Samarqand bo'yicha qimmatli va o'ziga xos empirik ma'lumotlarni taqdim etadi. Ushbu ma'lumotlar turizm siyosatini ishlab chiquvchi tashkilotlar, telekommunikatsiya xizmatlari operatorlari va to'lov xizmatlarini ko'rsatuvchi tashkilotlar uchun raqamli infratuzilma va platformalarni rivojlantirishda, shuningdek, O'zbekistonda moliyaviy inklyuziya va raqamli transformatsiya bo'yicha keng qamrovli vazifalar doirasida iste'molchilarning raqamli turizm xizmatlariga bo'lgan ishonchini mustahkamlashda amaliy ahamiyat kasb etadi.

Kalit so'zlar: raqamli to'lovlar, turizm, TAM, moliyaviy inklyuziya, O'zbekiston, logistik regressiya, Samarqand, texnologiyalarni qabul qilish.

АННОТАЦИЯ. В данной статье исследуются факторы, определяющие внедрение цифровых платёжных систем в туристической отрасли Самарканда — объекта Всемирного наследия ЮНЕСКО — в условиях стремительной цифровизации финансовой сферы страны в рамках стратегии «Цифровой Узбекистан — 2030». В исследовании применён комплексный подход, объединяющий модель принятия технологий (Technology Acceptance Model — TAM) и бинарную логистическую регрессию. Анализ основан на первичных данных, собранных у 150 респондентов, включая местных и иностранных туристов, работников сферы гостеприимства, а также владельцев и руководителей предприятий. Сбор данных осуществлялся посредством структурированной двуязычной анкеты на узбекском и русском языках в крупных туристических комплексах, а также с использованием Google Forms.

Результаты показывают, что цифровыми платёжными инструментами пользуются 84,4 % респондентов. Наиболее активными пользователями данных платформ являются иностранные туристы — 92 % и работники сферы гостеприимства — 93 %. Наиболее широко используемыми платформами оказались Uzum и Google Pay. Точность классификации модели бинарной логистической регрессии составила 96,7 % при значении коэффициента Макфаддена $R^2 = 0,810$. Наиболее сильными предикторами принятия цифровых платежей стали воспринимаемая простота использования ($OR = 4,351$) и воспринимаемая полезность ($OR = 3,344$). За ними следуют доверие ($OR = 2,163$) и доступность интернета ($OR = 1,685$), выступающие основными контекстуальными факторами, способствующими внедрению цифровых платежей.

Со стороны предприятий были выявлены следующие отрицательные факторы: недоверие клиентов — 48 % и высокие комиссии за проведение транзакций — 24 %. Полученные результаты расширяют возможности применения модели TAM в туристической отрасли стран с переходной экономикой и предоставляют ценные оригинальные эмпирические данные по Самарканду. Эти данные могут быть использованы органами, ответственными за формирование туристической политики, операторами телекоммуникационных услуг и поставщиками платёжных услуг при развитии цифровой инфраструктуры и платформ, а также укреплении доверия потребителей к цифровым туристическим услугам в рамках более широкой программы финансовой инклюзии и цифровой трансформации Узбекистана.

Ключевые слова: цифровые платежи, туризм, TAM, финансовая инклюзия, Узбекистан, логистическая регрессия, Самарканд, принятие технологий.

INTRODUCTION

The digitalisation of financial services has transformed tourism consumer behaviour worldwide, with mobile wallets, contactless cards, and dedicated payment applications becoming central to an integrated tourist experience and improved enterprise efficiency [1]. Since 2017, Uzbekistan has accelerated financial-sector reforms, treating digitalisation as a key element of inclusive economic development under the “Digital Uzbekistan — 2030” strategy.

Samarkand, a UNESCO World Heritage Site and one of Uzbekistan's main tourist centres, provides an important empirical context. It attracts a considerable flow of domestic and foreign visitors and hosts a high concentration of hospitality and tourism enterprises. Both domestic digital payment services, such as Click, Payme, and Uzum, and international payment options, including Visa, Mastercard, Google Pay, and Apple Pay, are expanding rapidly within Uzbekistan's digital economy. However, their adoption in the tourism sector remains insufficiently studied and uneven, representing the research gap addressed by this study.

Based on this context, the following research questions are formulated: (1) What are the current trends in the use of digital payment methods among tourists and tourism enterprises in Samarkand? (2) How do adoption levels vary across different demographic groups, including age, status, and nationality? (3) Which of the following Technology Acceptance Model constructs is the strongest predictor of adoption: Perceived Usefulness, Perceived Ease of Use, Trust, or Behavioural Intention? (4) Which sociodemographic and contextual factors, such as internet access, gender, income, and prior training, are associated with a higher likelihood of adoption?

The study makes two main contributions: first, it applies an integrated TAM–logistic regression model to tourism in an underexplored transition-economy context; second, it provides original empirical findings on Samarkand that have not previously been reported in the literature.

These findings are also important for Samarkand's competitiveness as a heritage destination. As other Central Asian destinations continue to digitalise, the ease and reliability of payment systems are increasingly becoming part of the destination-quality framework, alongside accessibility, safety, and service standards. Understanding the factors that drive or hinder digital payment adoption at a UNESCO World Heritage Site is therefore relevant both academically and in terms of the sector's competitiveness.

The remainder of the paper is structured as follows. Section 2 reviews the literature on the Technology

Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and mobile payments. Section 3 describes the research methodology. Section 4 presents the descriptive statistics, reliability analysis, and regression results. Section 5 provides the conclusions, policy recommendations, and directions for future research.

LITERATURE REVIEW

The Technology Acceptance Model (TAM) [2] suggests that behavioural intention to use a technology is primarily influenced by two factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Subsequent extensions of the model incorporated additional constructs, including Trust [3] and Behavioural Intention as a direct antecedent of actual use [4], which have been validated in the context of mobile payments. Venkatesh et al. [5] subsequently integrated TAM with seven other competing models to develop the Unified Theory of Acceptance and Use of Technology (UTAUT), which has become one of the most widely applied frameworks for explaining technology adoption in service industries, including financial services and tourism.

With regard to mobile and digital payments specifically, Dahlberg et al. [6] found that consumer adoption studies continued to dominate the literature over the preceding decade, while PU and PEOU remained the most consistently significant predictors across different contexts. A substantial proportion of the variance in mobile payment adoption intentions was also explained by a combination of perceived usefulness, ease of use, and perceived risk [7]. Zhou et al. [8] demonstrated that task–technology fit further enhanced the predictive power of UTAUT-based models in the mobile banking context.

In the tourism and hospitality sector, Cheng et al. [9] found that PU was the most important factor influencing adoption, while Kim et al. [10] demonstrated the moderating role of trust in guest satisfaction with digital service touchpoints. Near-field communication mobile payments in the hotel context were examined by Morosan and DeFranco [11], who confirmed the importance of infrastructural readiness in hotel services as a factor influencing the intention to use contactless payment technologies. This finding is also relevant to tourism services provided at heritage destinations such as Samarkand.

In the Central Asian context, Kose et al. [12] found that the preference for cash remained strong in Uzbekistan and neighbouring countries, despite the COVID-19 pandemic accelerating the adoption of contactless payments throughout the region. Slade et al. [13] also extended UTAUT by incorporating innovativeness, risk, and trust to explain mobile payment adoption in remote environments. Their findings indicated that perceived risk was a significant barrier for first-time mobile payment users, which is closely related to the trust-related barriers examined in the present study.

The World Bank [14] considers access to digital payment instruments to be one of the core indicators of financial inclusion. Tourism is both a foreign-currency-earning and labour-intensive sector and may therefore serve as an important driver of financial inclusion in transition economies such as Uzbekistan [15].

Despite the extensive research conducted in this field, most previous studies have focused primarily on the consumer side of adoption, while small and micro-enterprises operating in heritage tourism destinations have received comparatively limited attention. Previous studies of hospitality technologies have identified a lack of technical expertise and high implementation costs as potential barriers preventing operators from investing in mobile payment systems. These constraints may be particularly significant for family-owned guesthouses, souvenir shops, and small restaurants, which constitute a substantial part of Samarkand's tourism supply chain.

Similarly, the literature on financial inclusion in tourism-dependent transition economies indicates that national-level adoption statistics may appear positive, while substantial differences may persist between formal enterprises and informal or micro-businesses, even when overall adoption rates are high [14]. This business-level disparity, together with the limited empirical evidence on digital payment adoption in Central Asia highlighted by Kose et al. [12], provides the motivation for the present study to adopt an integrated approach that examines both demand-side adoption among tourists and supply-side adoption among tourism enterprises.

RESEARCH METHODOLOGY

The study employed a quantitative cross-sectional research design based on the Technology Acceptance Model (TAM) and binary logistic regression. Data were collected from tourists at major tourist complexes in Samarkand using a structured questionnaire available in Uzbek and Russian. The questionnaire was also distributed online through Google Forms via the Telegram messenger. Purposive convenience sampling was used to select 150 respondents.

The TAM measurement framework consisted of 13 questionnaire items, with Q16 divided into two sub-items, covering four dimensions: Perceived Usefulness (PU) (Q10–Q13), Perceived Ease of Use (PEoU) (Q14–Q16), Trust (Q17–Q19), and Behavioural Intention (BI) (Q20–Q22). The dependent variable was dichotomous

and represented respondents' current use of digital payment methods, coded as yes = 1 and no = 0. The logistic regression model included gender, age, education, income, internet access, prior training, and the mean scores of the TAM constructs as independent variables. The reliability of the constructs was assessed using Cronbach's alpha, while model fit was evaluated using McFadden's R^2 , classification accuracy, and the Hosmer–Lemeshow test.

Each construct was measured using a five-point Likert scale. Before hypothesis testing, the internal consistency of each construct was assessed by calculating Cronbach's alpha. Data collection was conducted in accordance with the standard ethical protocols of Silk Road International University of Tourism and Cultural Heritage. Participation was voluntary and anonymous, informed verbal consent was obtained from all respondents, and no personally identifiable information was collected or stored.

Before the full-scale distribution of the questionnaire, a pilot test involving eight respondents was conducted to ensure that the items were understandable and equivalent in the Uzbek and Russian versions. Based on the pilot results, minor wording changes were made to three items. Multicollinearity among the predictors was assessed using variance inflation factors (VIFs), all of which were below the threshold value of 5. The Hosmer–Lemeshow test was also conducted to assess model calibration before estimating the regression model.

Descriptive statistics, reliability analysis, independent-samples t-tests comparing users and non-users, and binary logistic regression were performed using IBM SPSS Statistics. For ease of interpretation, the regression coefficients are presented as odds ratios, $\text{Exp}(B)$. During the preparation and methodological refinement of the article, artificial intelligence tools were used in a limited capacity, accounting for no more than 10% of the overall work.

Based on the literature reviewed above, the following four hypotheses were tested:

H1: Perceived Usefulness positively predicts digital payment adoption.

H2: Perceived Ease of Use positively predicts digital payment adoption.

H3: Trust positively predicts digital payment adoption.

H4: Internet accessibility positively predicts digital payment adoption as a contextual enabling factor.

ANALYSIS AND RESULTS

The sample comprised 150 respondents (Table 1), including 67 local tourists (44.7%), 42 foreign tourists (28.0%), 25 hospitality sector employees (16.7%), and 16 business owners or managers (10.7%). Of the respondents, 51.1% were male and 48.9% were female. The largest age group comprised respondents aged 25–34 years (40.0%), while 44.4% of the participants held a bachelor's degree.

Table 1. Sample Demographic Profile (N = 150)

Variable	Category	n	%
Status	Local Tourist	67	44.4
	Foreign Tourist	42	27.8
	Employee	25	16.7
	Owner/Manager	16	11.1
Gender	Male	77	51.1
	Female	73	48.9
Age	Under 25	38	25.6
	25-34	60	40.0
	35-44	27	17.8
	45-54	13	8.9
	55+	12	7.8

Overall, 84.4% of respondents ($n = 127$) had adopted digital payments. Foreign tourists (92%) and hospitality sector employees (93%) reported the highest adoption rates, followed by local tourists (80%) and business owners or managers (70%). The most widely used platforms were Uzum and Google Pay (36.8%), followed by Visa/Mastercard and Payme (35.5%), Apple Pay (28.9%), and Click (26.3%). Among enterprise respondents, 84% already accepted digital payments, while the remaining 16% were in the process of implementing such systems. The main challenges reported by enterprises were customer distrust (48%) and high transaction fees (24%).

All TAM constructs demonstrated excellent internal consistency: Perceived Usefulness, $\alpha = 0.932$ ($M =$

3.65); Perceived Ease of Use, $\alpha = 0.930$ ($M = 3.64$); Trust, $\alpha = 0.904$ ($M = 3.67$); and Behavioural Intention, $\alpha = 0.910$ ($M = 3.63$). Across all constructs, users' mean scores were 2.25–2.30 points higher than those of non-users (all $p < 0.001$), indicating the strong discriminative validity of the TAM framework in this context.

The binary logistic regression model presented in Table 2 achieved a classification accuracy of 96.7%, with a McFadden's R^2 value of 0.810. Perceived Ease of Use (OR = 4.351) and Perceived Usefulness (OR = 3.344) were the strongest predictors of digital payment adoption, followed by Trust (OR = 2.163). Internet access (OR = 1.685) was the most influential contextual enabling factor. Gender had a modest positive effect (OR = 1.568), whereas age was negatively associated with adoption (OR = 0.761). The inclusion of perceptual variables provided additional predictive value to the model.

Table 2. Binary Logistic Regression: Key Predictors of Digital Payment Adoption

Predictor	β	Odds Ratio	Interpretation
Internet Access	0.522	1.685	Key infrastructure predictor
Gender (Male)	0.450	1.568	Males 57% more likely
Age	-0.273	0.761	Older age reduces odds
Perceived Usefulness	1.207	3.344	Strong TAM predictor
Ease of Use (PEOU)	1.471	4.351	Strongest predictor in model
Trust	0.771	2.163	Significant positive effect
Model accuracy = 96.7%; McFadden R^2 = 0.810			

Figure 1 presents the odds ratios for the six predictors included in the final regression model. The figure visually highlights the greater importance of the two core TAM constructs—Perceived Ease of Use and Perceived Usefulness—compared with the sociodemographic and contextual predictors.

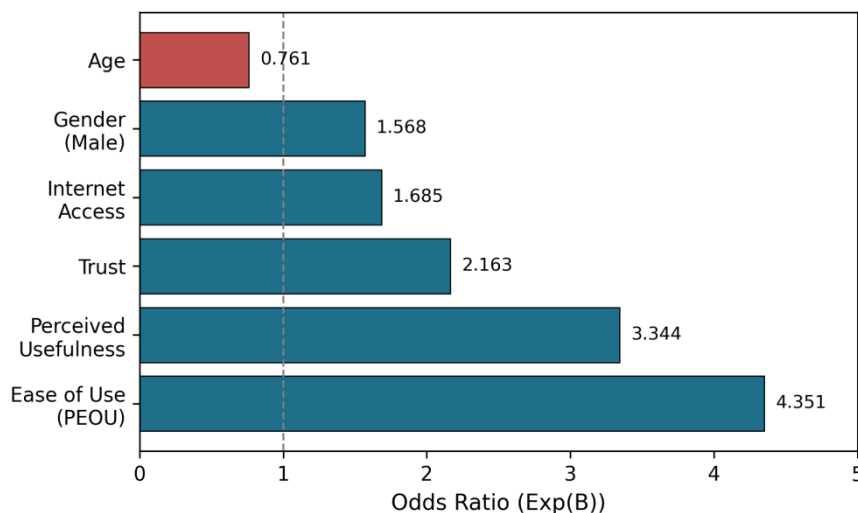


Figure 1. Odds Ratios for Predictors of Digital Payment Adoption

Among non-users, the main barriers to adoption were security concerns (20.0%), lack of knowledge (18.9%), preference for cash (17.8%), insufficient internet connectivity (16.7%), lack of access to a smartphone (14.4%), and a perceived lack of need (12.2%).

The results of a supplementary analysis by respondent group also revealed significant differences in barrier profiles. Among local tourists who had not adopted digital payments, the main barriers were a preference for cash and lack of access to a smartphone. Among non-adopting business owners and managers, the main barriers were high transaction fees and customer trust issues. These findings mirror the enterprise-level barriers discussed above and indicate that business-level and customer-level constraints may reinforce one another within the same commercial environment.

Security concerns and lack of knowledge were more prevalent among respondents aged 45 years and older than among other age groups. This finding is consistent with the negative coefficient for age in the regression model (OR = 0.761) and highlights the apparent need for targeted digital literacy initiatives for this

group.

Digital payments in Samarkand's tourism sector have reached an adoption rate of 84.4%, exceeding the rates reported for comparable transition-economy markets. This growth is supported by both locally integrated platforms, such as Uzum, and internationally recognised platforms, such as Google Pay, which are popular among foreign visitors. The stronger influence of Perceived Ease of Use compared with Perceived Usefulness is consistent with previous findings concerning first-time users [9] and suggests that usability remains a major factor influencing the adoption of this still-emerging technology.

Internet access is important because a positive attitude towards digital payments can result in actual use only when a stable connection is available at the point of sale. This remains a practical constraint at high-traffic heritage sites. Unlike the findings of previous financial inclusion studies [15], income was not significantly associated with adoption, suggesting that access to mobile payment services in urban Uzbekistan may be approaching saturation across different income groups.

The high level of customer distrust reported by enterprises reinforces the importance of Trust as a TAM predictor and indicates the existence of a mutually reinforcing trust gap between customers and enterprises. This finding is consistent with the risk-related barriers identified by Slade et al. [13]. Digital payment adoption in Samarkand appears to be higher than in comparable regional markets, possibly reflecting government support for the digitalisation of prominent tourism sites under the "Digital Uzbekistan — 2030" strategy.

However, persistent barriers on the enterprise side indicate that policy measures should also address merchant costs and confidence-building. Otherwise, the sector may face a two-speed digitalisation process in which large and internationally affiliated businesses advance more rapidly than smaller, family-run enterprises.

These results confirm the applicability of TAM and UTAUT to heritage tourism in a transition-economy context, while also demonstrating the value of incorporating infrastructure-related variables, such as internet availability. From a practical perspective, three complementary interventions emerge: strengthening telecommunications infrastructure at heritage sites, improving the usability of digital payment platforms, and developing joint public–private initiatives to strengthen consumer and merchant confidence through communication and digital literacy programmes.

CONCLUSION AND SUGGESTIONS

Among non-users, the main barriers to adoption were security concerns (20.0%), lack of knowledge (18.9%), preference for cash (17.8%), insufficient internet connectivity (16.7%), lack of access to a smartphone (14.4%), and a perceived lack of need (12.2%).

The results of a supplementary analysis by respondent group also revealed significant differences in barrier profiles. Among local tourists who had not adopted digital payments, the main barriers were a preference for cash and lack of access to a smartphone. Among non-adopting business owners and managers, the main barriers were high transaction fees and customer trust issues. These findings mirror the enterprise-level barriers discussed above and indicate that business-level and customer-level constraints may reinforce one another within the same commercial environment.

Security concerns and lack of knowledge were more prevalent among respondents aged 45 years and older than among other age groups. This finding is consistent with the negative coefficient for age in the regression model (OR = 0.761) and highlights the apparent need for targeted digital literacy initiatives for this group.

REFERENCES

1. Ramos de Luna I., Liébana-Cabanillas F., Sánchez-Fernández J., Muñoz-Leiva F. Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied // *Technological Forecasting and Social Change*. – 2019. – Vol. 146. – P. 931–944. – DOI: 10.1016/j.techfore.2018.09.018.
2. Davis F. D. Perceived usefulness, perceived ease of use, and user acceptance of information technology // *MIS Quarterly*. – 1989. – Vol. 13, No. 3. – P. 319–340. – DOI: 10.2307/249008.
3. Oliveira T., Thomas M., Baptista G., Campos F. Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology // *Computers in Human Behavior*. – 2016. – Vol. 61. – P. 404–414. – DOI: 10.1016/j.chb.2016.03.030.
4. Venkatesh V., Bala H. Technology Acceptance Model 3 and a research agenda on interventions // *Decision Sciences*. – 2008. – Vol. 39, No. 2. – P. 273–315. – DOI: 10.1111/j.1540-5915.2008.00192.x.
5. Venkatesh V., Morris M. G., Davis G. B., Davis F. D. User acceptance of information technology: Toward a unified view // *MIS Quarterly*. – 2003. – Vol. 27, No. 3. – P. 425–478. – DOI: 10.2307/30036540.
6. Dahlberg T., Guo J., Ondrus J. A critical review of mobile payment research // *Electronic Commerce Research and Applications*. – 2015. – Vol. 14, No. 5. – P. 265–284. – DOI: 10.1016/j.elerap.2015.07.006.
7. Kim C., Mirusmonov M., Lee I. An empirical examination of factors influencing the intention to use mobile payment // *Computers in Human Behavior*. – 2010. – Vol. 26, No. 3. – P. 310–322. – DOI: 10.1016/j.chb.2009.10.013.

8. Zhou T., Lu Y., Wang B. Integrating TTF and UTAUT to explain mobile banking user adoption // *Computers in Human Behavior*. – 2010. – Vol. 26, No. 4. – P. 760–767. – DOI: 10.1016/j.chb.2010.01.013.
9. Cheng X., Fu S., de Vreede G. J. Understanding trust influencing factors in social media communication: A qualitative study // *International Journal of Information Management*. – 2017. – Vol. 37, No. 2. – P. 25–35. – DOI: 10.1016/j.ijinfomgt.2016.11.009.
10. Sohrabi B., Raeesi Vanani I., Nasiri N., Ghassemi Rudd A. A predictive model of tourist destinations based on tourists' comments and interests using text analytics // *Tourism Management Perspectives*. – 2020. – Vol. 35. – Art. 100710. – DOI: 10.1016/j.tmp.2020.100710.
11. Morosan C., DeFranco A. It's about time: Revisiting UTAUT2 to examine consumers' intentions to use NFC mobile payments in hotels // *International Journal of Hospitality Management*. – 2016. – Vol. 53. – P. 17–29. – DOI: 10.1016/j.ijhm.2015.11.003.
12. Kose N., Makhova L., Nazarov M. Digital financial services in Central Asia: Barriers and opportunities // *Journal of Eurasian Studies*. – 2022. – Vol. 13, No. 1. – P. 45–62.
13. Slade E. L., Dwivedi Y. K., Piercy N. C., Williams M. D. Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness, risk, and trust // *Psychology & Marketing*. – 2015. – Vol. 32, No. 8. – P. 860–873. – DOI: 10.1002/mar.20823.
14. Demirgüç-Kunt A., Klapper L., Singer D., Ansar S. *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. – Washington, DC : World Bank, 2022. – DOI: 10.1596/978-1-4648-1897-4.
15. Demirgüç-Kunt A., Klapper L., Singer D., Ansar S., Hess J. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. – Washington, DC : World Bank, 2018. – 148 p. – DOI: 10.1596/978-1-4648-1259-0.

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

2026. № 7

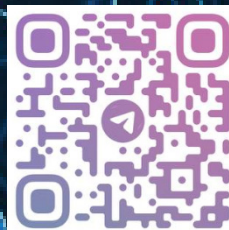
© When materials are reproduced, the INNOVATION SCIENCE AND TECHNOLOGY journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

“The journal “INNOVATION SCIENCE AND TECHNOLOGY” has been registered by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan from 09.10.2024 under the registration number №390637. License number: C-5669633. PNFL: 30407832680027

Our address: Tashkent city, Yunusobod district, 19th block,
House 17.



Acceptance of articles

Published every
monthly



Directions

Social, economic, political,
technological, scientific



Scopus || Scientific electronic journal specializing in Scopus

CERTIFICATE NUMBER: №390637

**ORDER NUMBER ACCORDING TO
THE LICENSE REGISTER: C-5669633**

CONTACT:



Contact us
+998 50 737 87 88



Telegram channel
t.me/scopus_IST2100



Journal official website
<https://ist-journal.uz/index.php/IST>