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ANALYSIS OF FACTORS AFFECTING REMOTE BANKING SERVICES IN THE PROCESS OF BANK TRANSFORMATION IN UZBEKISTAN

Abstract. Today, the transformation of banks requires, firstly, the establishment of digital banks, and secondly, the change in the activities of existing banking departments and the reduction of banking costs. In digital banks, banking services will be fully automated and self-management systems will be created for bank customers. In particular, today's demand is that as a result of the development of the digital economy, banks are required to serve a large number of customers not by increasing the number of branches, but by developing remote banking services. In the process of transformation of banks in Uzbekistan, due to the increasing availability of remote banking services on the basis of mobile, Internet and other banking technologies, their level of security, risk minimization, ease of use, importance of use, public awareness of these services, usefulness of services, etc. the factors are econometrically analyzed based on the conceptual model created by the author. These affect the development of remote banking services (customer awareness of remote banking services (As), risk of using remote banking services (R), ease of use of remote banking services (Eu), understanding the usefulness of remote banking services (Uu), cost of remote banking services (Cs), security in the use of remote banking services (Ss)) were hypothesized. In order to assess the impact of these hypotheses, a survey of clients of the Tashkent branch of Joint-Stock Commercial Bank with foreign capital «HAMKORBANK» was conducted and the results of the survey were econometrically analyzed on the basis of a conceptual model created by the author. These hypotheses have also been studied by foreign economists and their conclusions are given. The results of this study are of practical importance for the development of remote banking services in the banking system of Uzbekistan.

Keywords: Internet banking, mobile banking, security, risk, digital banking, biometric technology, remote banking services, banking services.

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АНАЛІЗ ФАКТОРІВ, ЩО ВПЛИВАЮТЬ ДИСТАНЦІЙНІ БАНКІВСЬКІ ПОСЛУГИ У ПРОЦЕСІ БАНКОВОЇ ТРАНСФОРМАЦІЇ В УЗБЕКІСТАНІ

Анотація. Сьогодні трансформація банків вимагає, по-перше, створення цифрових банків, по-друге, зміни в діяльності наявних банківських підрозділів і зменшення банківських витрат. У цифрових банках банківські послуги будуть повністю автоматизовані, а для клієнтів створені системи самоуправління.

Зокрема, особливістю попиту на банківські послуги сьогодні є те, що в результаті розвитку цифрової економіки банки зобов'язані обслуговувати велику кількість клієнтів не за рахунок збільшення кількості відділень, а за рахунок розвитку послуг дистанційного (віддаленого) банкінгу. На процес трансформації банків в Узбекистані через збільшення доступності послуг віддаленого банкінгу на базі мобільних, Інтернету та інших банківських технологій впливають такі переваги віддаленого банкінгу, як рівень його безпеки, мінімізація

ризиків, простота використання, важливість використання, обізнаність громадськості щодо таких послуг, корисність послуг тощо. Ці фактори проаналізовано на основі концептуальної економетричної моделі, розробленої автором. Висунуті гіпотези про вплив факторів на розвиток послуг віддаленого банкінгу [обізнаність клієнтів про послуги дистанційного банкінгу (As), ризик використання послуг віддаленого банкінгу (R), простота використання послуг віддаленого банкінгу (Eu), розуміння корисності послуг віддаленого банкінгу (Uu), вартість послуг віддаленого банківського обслуговування (Cs), безпека використання послуг віддаленого банкінгу (Ss)]. З метою оцінки цих гіпотез було проведено опитування клієнтів Ташкентського відділення Акціонерного комерційного банку з іноземним капіталом «НАМКORBANK», а результати опитування пройшли економетричний аналіз на основі розробленої автором концептуальної моделі. Подано експертні висновки іноземних економістів за результатами вивчення цих гіпотез. Результати цього дослідження мають практичне значення для розвитку послуг дистанційного банківського обслуговування в банківській системі Узбекистану.

Ключові слова: Інтернет-банкінг, мобільний банкінг, безпека, ризик, цифровий банкінг, біометричні технології, послуги віддаленого банкінгу, банківські послуги.

Формул: 0; рис.: 3; табл.: 5; бібл.: 28.

Introduction. In recent years, there have been major changes in the provision and use of financial services. As a result of technological development on the basis of the transformation of banks, great changes are taking place in the banking sector. As a result of the application and use of the opportunities of the Internet and mobile technologies in the banking sector has led to unprecedented changes in the market of banking services. The development of e-banking services by banks through many electronic channels has allowed to provide additional convenience to customers.

In today's fast-paced world of information flows, banks need to keep up with new research and customer demand. Theoretical views on remote banking services, the use of the experience of developed countries and the study of factors influencing the development of remote banking services will be effective in improving remote banking services. The level of development of remote banking services is determined by its widespread use by customers in the electronic payment system.

According to international practice, commercial banks are developing financial solutions for problematic situations in the banking system through remote banking services. In particular, the global banking system is evolving with modern technologies such as mobile technology, digital banking, biometric technology, blockchain technology and artificial intelligence. As a result, mobile technology allows banks and customers to manage money without physical contact, without going to the bank building, the rapid development of remote banking services has led to an increase in digital banks without opening branches and outlets, the development of security-enhanced biometric technologies, the popularity of blockchain technology automatic analysis of data with the help of intelligence and time savings in banking operations. This requires a comprehensive scientific and practical research on the innovative and technological development of remote banking services for banks.

Remote banking services in Uzbekistan. As a result of using the Internet and its capabilities in the provision of banking services in Uzbekistan, a number of new banking services have emerged. In our opinion, the provision of banking services to customers by banks via the Internet is one of the most important achievements of development, in this regard, especially in Uzbekistan, where the development of the Internet is observed, its potential is not yet fully used.

Remote banking services, in particular, Internet banking for legal entities and individual entrepreneurs were first offered on March 1, 2007 by JSICB «Ipak Yuli» bank, and for individuals, Internet banking and mobile banking were first offered by the former JSCB «Samarkand». In May 2009, the bank launched a new type of Internet service called sam. online [24].

As of December 31, 2011, the number of bank plastic cards amounted to 7 million 909 thousand, while in the same period of 2017 it was 19 million 226 thousand. Due to the suspension

of money transfers by «Duet» cards from January 1, 2018, the number of bank plastic cards in 2018 will reach 17 million. Decreased to 686 thousand. In 2019, the number of bank plastic cards will reach 20 million. 774 thousand. In general, the number of bank plastic cards in 2019 increased by 2.6 times compared to 2011. The volume of annual transactions by bank cards increased by 7.7 times during the same period. The number of payment terminals as of December 31, 2011 was 85741, and as of January 1, 2020 — 407,278. It should be noted that the number of kiosks and ATMs as of December 31, 2011 was only 491, and as of January 1, 2020 — 9687.

The number of users of remote banking services in 2011 amounted to only 24545, and as of December 31, 2019 — 10153458. The number of users of remote banking services in 2018 increased by 413.7 times compared to 2011. The sharp increase in the number of users of remote banking services is due to the expansion of the use of these services by individuals, as the number of legal entities and individual entrepreneurs using remote banking services in 2011 amounted to 14241, and as of January 1, 2020 — 691008. The number of individuals using these services increased from 10304 in 2011 to 9462450 as of January 1, 2020, and increased by 918.3 times in 2011 compared to 2011 (*Table 1*).

Table 1

**Development parameters of remote banking services in Uzbekistan
(as of January 1, in units)**

№	Types	2011 year	2016 year	2017 year	2018 year	2019 year	2020 year	2020/2011 change of years (times)
1.	Number of issued bank cards (in thousands)	7909	16316	19523	19226	17686	20774	2,6
2.	Annual volume of transactions by bank cards (billion soums)	10192,4	31324,0	53050,0	52972,0	63713,5	78432,4	7,7
3.	Number of payment terminals	85741	183060	208536	235712	244913	407278	4,8
4.	Number of kiosks and ATMs	491	2345	4954	5632	6859	9687	19,7
5.	<i>Users of remote banking services</i>							
	The number	24545	1061022	2042111	4453240	7959107	10153458	413,7
5.1.	<i>Legal entities and individual entrepreneurs</i>							
	The number	14241	81492	135629	227879	359770	691008	48,5
5.2.	<i>Individuals</i>							
	The number	10304	978530	1906482	4225361	7599337	9462450	918,3

Source: Report of the Central bank of the Republic of Uzbekistan for 2019, (2020) : <http://cbu.uz>.

Literature review and hypothesis development

Factors influencing the use of remote banking services can be cited. These are:

- Awareness of services (As);
- the effect of risk level on services (R);
- ease of use of services (Eu);
- understanding the usefulness of services (Uu);
- cost of services (Cs);
- security of services (Ss).

Various aspects of the impact of these factors have been studied by many economists and researchers [1; 4; 6; 20].

Awareness of people about remote banking services, that is, information about remote banking services through advertisements, banking sites, hearing from relatives or by word of mouth. In particular, it has been recognized that free communication in a virtual environment through word of mouth about words or remote banking services is more effective than the effect of advertising to consumers. For example, a 2004 study by J. E. Hogan, K. N. Lemon, and B. Libai found that the effectiveness of oral speech was three times that of advertising. The result of this study is that word

of mouth about remote banking services increases the popularity of these services and the sense of trust in users and has a positive effect [10].

People receive information by inquiring to minimize risk before purchasing something and using certain services [11]. Indeed, consumers are more likely to turn to and believe in oral communication when conducting high-risk activities and using untested new technology [25]. Verbal communication conveys information directly, reliably, through personal behavior. In this context, it has been recognized in the literature that the extreme power of the word has a stronger effect on consumer behavior than advertising.

Therefore, we considered it important to study the effect of oral speech in raising users' awareness of remote banking services. In this context, the following hypotheses have been developed:

Hypothesis 1. Awareness of remote banking services (As) has a positive effect on the use of these services (U).

Hypothesis 2. Awareness of remote banking services (As) has a positive effect on understanding the usefulness of these services (Uu).

One of the obstacles to the introduction of new technologies in the banking system is its purchase, and the other is the cost of using it. It was found that the high cost of using them also has a negative impact on the development of remote banking services. On the other hand, low prices encourage customers to use remote banking services [21]. In other words, the higher the cost of using remote banking services, the fewer the users.

Hypothesis 3. High price (Cs) has a negative impact on the use of remote banking services (U).

Hypothesis 4. The high cost (Cs) has a negative impact on the perception of the usefulness of remote banking services (Uu).

Dr. Fred Davis of the Massachusetts Institute of Technology has argued that remote banking services can be achieved easily and conveniently for the user without any effort on the part of the user [5]. The ease of use of remote banking services by Dr. Irwin Thomas Joseph Brown of Cape Town University influences the perception of this system as useful. On the other hand, mobile banking is easier to use, i.e. it is more profitable to perform banking operations through a small device than a complex system. Studies have shown that the ease of use of remote banking services also has a significant positive impact on the use of these services [27]. Therefore, when developing mobile banking applications, developers should take into account the needs of customers and make sure that they can easily use the applications [8-9]. Mobile banking applications should be easy to learn and easy to use [14; 15]. As a result, the number of users of mobile banking services can be expected to increase. In this context, the following hypotheses have been developed:

Hypothesis 5. Ease of use of remote banking services (Eu) has a positive effect on the use of these services (U).

Hypothesis 6. Ease of use of remote banking services (Eu) has a positive effect on understanding the usefulness of these services (Uu).

Although in addition to the benefits of remote banking services (ease of use and usefulness), this poses some risks associated with confidential information, customer personal information and transactions in new technological services [23]. Therefore, security and risk awareness are key aspects of the electronic payment system [3]. For such technologies to be successful and to adopt new payment system platforms, security must be monitored [22]. We therefore propose the following hypotheses:

Hypothesis 7. Ensuring security (Ss) has a positive effect on the use of remote banking services (U).

Hypothesis 8. Ensuring security (Ss) has a positive effect on minimizing risks (R) in remote banking services.

T. Ramayah, an associate professor at the University of Sains School of Management in Malaysia, considered the understanding of the usefulness of remote banking services as an external factor, pointing out that it is only effective [19]. Muhammad Alafeef, an associate professor at the

University of Jerash in Jordan, believes that remote banking services are useful — a degree of confidence that an individual will improve his performance in order to use a particular system [2]. Xiu Feng Lin, a professor at Taiwan National Oceanic University, said: «Just as mobile communication is useful in daily life, the use of mobile banking service is also beneficial for consumers. The direct use of such services by consumers in daily and business life has a positive effect on the perception of the usefulness of remote banking services» [14].

From this, it can be seen that it is beneficial to the consumer when using remote banking services as an impressive design. In this context, the following hypothesis has been developed:

Hypothesis 9. Understanding the usefulness of remote banking services (Uu) has a direct positive impact on the use of remote banking services (U).

Cardiff University associate professor Cohen Lewis studied the effect of risk on the desire to use remote banking services and found a positive relationship between desire and risk [12]. It is important that people take risk into account when adopting new technology [13]. The risk factor is very important in remote banking services because remote banking services are riskier than other services because they are remotely connected to bank accounts. L. Wessels and J. Drennan studied the factors that affect the use of remote banking services and concluded that risk had a negative impact on the use of these services. That is, the higher the risk in the application of new technologies, the negative impact on users [27]. Thus the following hypothesis is formed:

Hypothesis 10. Risk (R) negatively affects users' use of remote banking services (U).

Respondents were stratified by age and gender according to demographic characteristics. Gender differentiation is also important in making important decisions and can influence their behavior in different situations [26]. The survey by gender of respondents is one of the most studied consumer demographics in e-services. Concerns about computer use are more specific to women, and it has been observed that men are more likely than women to use new technologies in banking practices. Women are also less likely than men to be sensitive to risk perception when shopping online [7].

Young people are more flexible in applying and adopting new technologies because they have a lower perception of risk in new technology-based services [16]. Older consumers, on the other hand, are more aware of the risk in new technologies and are more cautious about their use.

Therefore, taking into account the demographic characteristics, we have formulated the following hypotheses:

Hypothesis 11. Gender (male) has a positive effect on the use of remote banking services (U).

Hypothesis 12. Gender (male) has a positive effect on awareness of remote banking services (As).

Hypothesis 13. Age (old age) has a negative impact on the use of remote banking services (U).

Hypothesis 14. Age (old age) has a negative effect on awareness (As) of remote banking services.

Conceptual model, Data and methodology. Thus, to improve remote banking services, increase public awareness (As) of these services, ensure that services are easy to use (Eu), in particular, the user understands the benefits of adapting the system to customer-friendly languages, ensuring system security (Ss), saving users time and money (Uu), when using remote banking services, it is necessary to find the optimal value of the price (Cs) for both parties, minimize the risks in the systems (R) and create a convenient platform for them, taking into account the gender and age of users. Only then will the bank's customers continue to use remote banking services (U) in the future, changing their attitude towards the use of remote banking services in full financial transactions. These hypotheses were econometrically analyzed using a conceptual model developed by the author (*Fig. 1*).

In order to econometrically analyze the above hypotheses for the development of remote banking services in the banking system of Uzbekistan, to identify existing problems and find solutions, we conducted a survey among clients of remote banking services of the Tashkent branch of JSCB with foreign capital «HAMKORBANK». *Table 2* provides information on customers who participated in the survey.

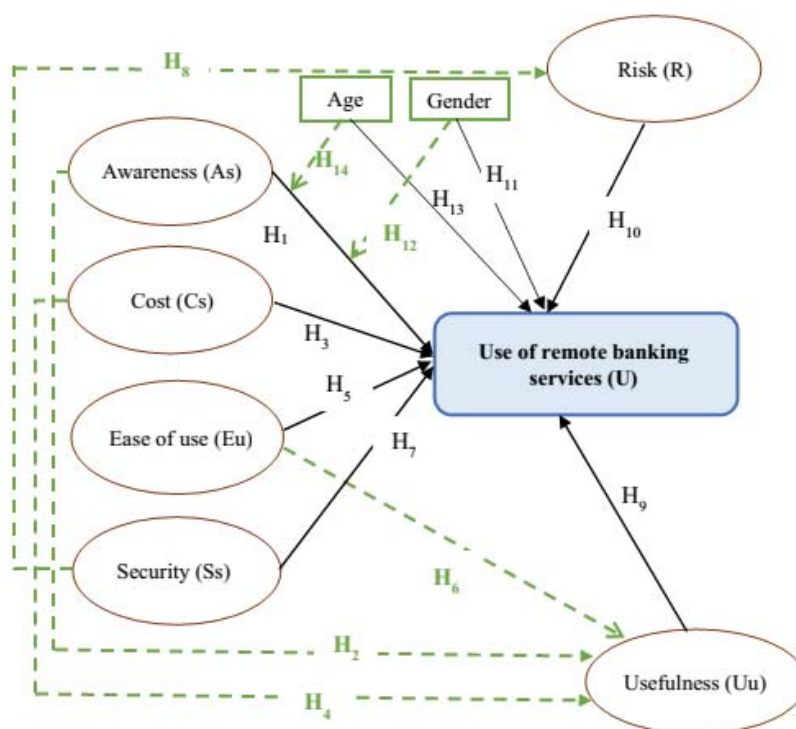


Fig. 1. Conceptual model of «determinant factor» hypotheses affecting the use of remote banking services

Source: Developed by the author.

Table 2

Information obtained from the survey

Arguments		№	%
Gender	Man	198	65
	Woman	107	35
Age	18—29	116	38
	30—39	135	44
	40+	54	18
Information	Medium and medium special	94	31
	Higher, bachelor and master	193	63
	PhD and DSc	18	6
A tool used in the use of remote banking services	Computer	118	39
	Telephone	139	46
	Computer and telephone	27	8
	Others	21	7
Experience in using remote banking services	Less than 1 year	88	29
	1—3 years	127	42
	More than 3 years	90	29
How much use of remote banking services	Every day	137	45
	1—2 times a week	128	42
	1—2 times a month	40	13

Source: Formed by the author on the basis of a survey.

In the questionnaire, a sequence of questions is formed to identify the hypotheses, and each hypothesis is studied according to the participants' answers. A total of 305 respondents took part in the survey.

It is advisable to use the method of linear multi-factor econometric modeling to determine the impact of factors affecting the use of remote banking services in Uzbekistan. These factors play an important role in studying the impact of these banking services on efficiency.

A number of factors were selected based on survey questions among respondents as factors involved in the multifactor econometric model. As a result, factor, the use of remote banking services (U) was defined in the model (Y). Factors influencing it include the influence of people close to my

use of remote banking services (As1), the impact of advertising and information on the banking site when using remote banking services (As1), the degree of ease of use of remote banking services (Eu), fraud in remote service systems (Ss1), the level of security of personal data in remote service systems (Ss2), the importance of remote banking services in saving time in everyday life (Uu1), the importance of remote banking services in saving costs (Uu2), the importance of price when using remote banking services (Cs1), remote banking services Considering the correlation coefficients of factors such as the importance of Internet speed (Cs1), the level of risk in conducting banking transactions through remote banking services (R1), the level of fear of losing the list of PINs and falling into the wrong hands (R2), gender and age of the respondent exit (see Appendix 1).

Preliminary processing of the data in the correlation-regression method showed that a number of factors were inversely related to the resultant indicator (Y) and that there was a multi collinearity between the influencing factors (Xi).

From the results of the conceptual model in Fig. 2, the factors strongly influencing the use of remote banking services and their high correlation with each other were highlighted. That is, factors such as (Eu), (Ss2), (Uu2), and (Cs2), which have a strong influence $H \geq 0,5$ on the use of remote banking services, are descriptive statistics among the factors included in the multifactor econometric model. Before measuring factors in multivariate econometric model parameters, it is necessary to calculate the correlation coefficients to find the relationships between them.

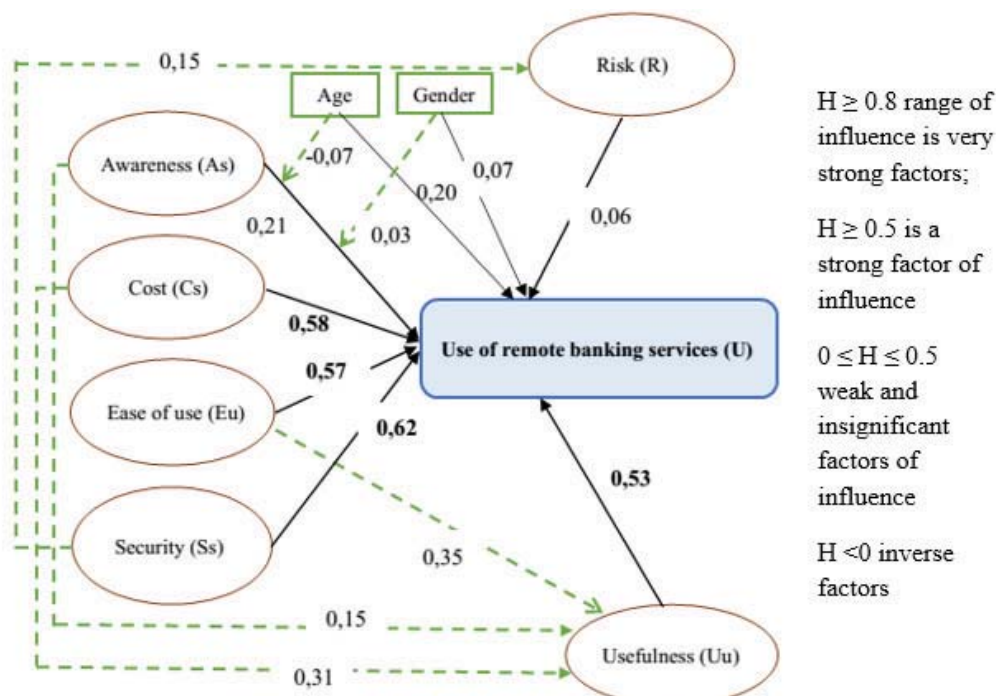


Fig. 2. Conceptual model of «determinant factor» hypotheses affecting the use of remote banking services and the results obtained

Source: Calculated and developed by the author.

The results are presented in Table 3, where the data show the average value (Mean), median, maximum and minimum values (Maximum, Minimum) of each factor. Std. Dev. (Standard Deviation) — The standard deviation coefficient indicates how much each variable deviates from the average value.

Skewness is an asymmetry coefficient, which means that if it is zero, it is a normal distribution and the distribution is symmetrical.

If this coefficient differs significantly from 0, then the distribution is considered asymmetric (i.e., not symmetrical). If the asymmetry coefficient is greater than 0, then the distribution is pushed to the right, if less than 0, it is pushed to the left. Graphs of the distribution functions of all factors are shown in Fig. 3.

Table 3

Descriptive statistics among factors

	Y	Eu (X1)	Ss2 (X2)	Uu2 (X3)	Cs2 (X4)
Mean	1,255738	1,337705	1,213115	1,465574	1,298361
Median	1,000000	1,000000	1,000000	1,000000	1,000000
Maximum	2,000000	2,000000	2,000000	2,000000	2,000000
Minimum	0,000000	0,000000	0,000000	0,000000	0,000000
Std. Dev.	0,664050	0,730484	0,690984	0,663643	0,702086
Skewness	-0,336983	-0,617829	-0,307115	-0,854312	-0,487726
Kurtosis	2,218791	2,095204	2,099629	2,597637	2,114636
Jarque-Bera	13,52823	29,80748	15,09681	39,15810	22,05376
Probability	0,001154	0,000000	0,000527	0,000000	0,000016
Summa	383,0000	408,0000	370,0000	447,0000	396,0000
Observations	305	305	305	305	305

Source: Calculated and developed by the author based on the EViews program.

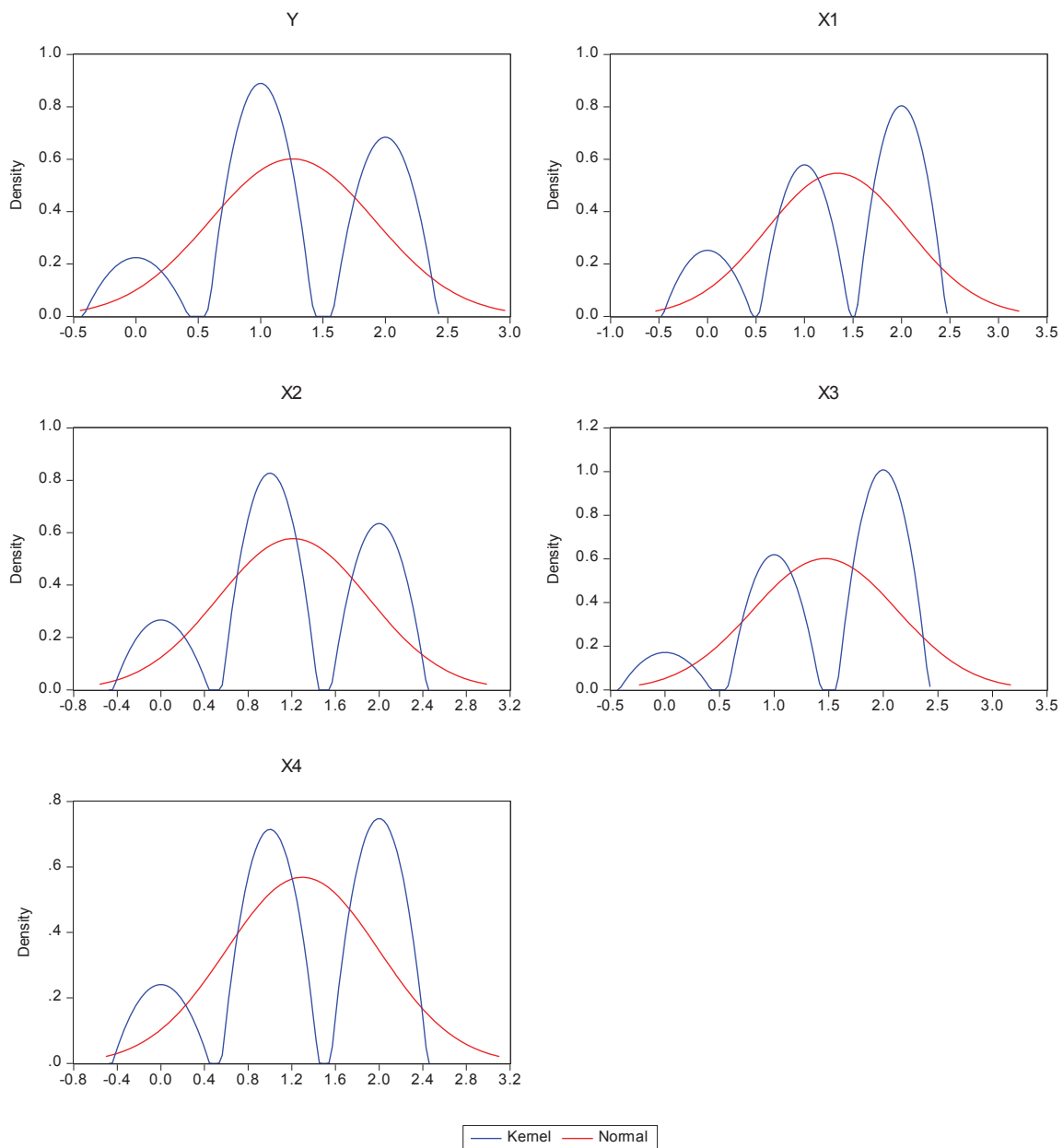


Fig. 3. Graphs of factor distribution functions

Source: Calculated and developed by the author based on the EViews program.

Hence, it can be seen from the graphs in Figure 3 that all factors (Eu; (X1); Ss2, (X2); Uu2, (X3) and Cs2 (X4)), including the value of the resulting factor (Y), are also negative (see Table 2), they can be seen that the distribution is pushed to the left. This indicates that the factors under study are subject to a normal distribution.

Kurtosis is an excess coefficient (in the normal distribution it is equal to 3) that measures the sharpness of the distribution peak. If the excess coefficient is greater than 0, then the distribution will be a sharp peak, if less than 0, it will be a flat peak (flat peak).

Using Jarque-Bera statistics, we check whether the factors are subject to a normal distribution. In addition, the Jarque-Bera statistics also show Probability for each factor. If, according to the Jarque-Bera statistics, the probability of a factor is greater than 0.05, it is not necessary to include it in a multifactor econometric model.

Hence, from the data in Table 3, it can be seen that the probability of all factors Jarque-Bera statistical values (Probability) is less than 0.05. This requires the inclusion of these factors in a multi-factor econometric model.

Before measuring factors in multivariate econometric model parameters, it is necessary to calculate the correlation coefficients to find the relationships between the factors.

The correlation coefficient is calculated according to the following formula:

$$r_{yx_i} = \frac{\overline{Y \cdot X} - \bar{Y} \cdot \bar{X}}{\sigma_X \cdot \sigma_Y}, \tag{1}$$

where the standard deviation of the factors.

The relationship values between the factors are given below (Table 4).

Table 4

Matrix of correlation coefficients between factors

Probability	Y	Eu (X1)	Ss2 (X2)	Uu2 (X3)	Cs2 (X4)
Y	1				
Eu	0,570661133	1			
Ss2	0,618504281	0,221898542	1		
Uu2	0,526081165	0,414226104	0,120065819	1	
Cs2	0,579083635	0,309593916	0,261775531	0,308044947	1

Source: Calculated and developed by the author based on the EViews program.

From the data in Table 4, it can be seen that the specific correlation coefficients show sufficient correlations between the factors.

Empirical results. As a result of the research, the following conclusions were drawn:

It should be noted that the answers to the question of the convenience of the system in the use of remote banking services are formed in mutual agreement. This means that the convenience of the system when using remote banking services strongly depends on the choice of these services. This also means that there is a strong ($r_{YX1} = 0,571$) relationship between the factors;

The security of personal data in remote banking services is strongly dependent on the choice of these services. In turn, two-thirds of respondents want personal data to be secure in remote banking services. That is, it also indicates the existence of a strong ($r_{YX2} = 0,618$) relationship between factor (Y) and factor (Ss2);

The importance of remote banking services in cost savings is becoming stronger in the use of these services. This conclusion is also confirmed by the fact that ($r_{YX3} = 0,526$);

It can be seen from this coefficient ($r_{YX4} = 0,579$) that the importance of Internet quality and speed in remote banking services is strongly related to the choice of these services. In particular, the poor quality and speed of the Internet in Uzbekistan is one of the major problems in the further development of remote banking services.

Now, on the basis of these factors, the parameters of the multifactor econometric model with the factors influencing the use of remote banking services are calculated (Table 5).

Table 5

Parameters of multifactor econometric model with factors influencing the use of remote banking services

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Eu	0,6611	0,0492	13,44058	0,0012
Ss2	0,5973	0,0480	12,4487	0,0000
Uu2	0,5555	0,0535	10,3792	0,0039
Cs2	0,6848	0,0495	13,8395	0,0002
C	0,3118	0,0963	3,2377	0,0286
R-squared	0,8021	Mean dependent var.		1,2557
Adjusted R-squared	0,6708	S.D. dependent var.		0,6640
S.E. of regression	0,5513	Akaike info criterion		1,6631
Sum squared reside	91,1722	Schwarz criterion		1,7241
Log likelihood	-248,6231	Hannan-Quinn critter.		1,6875
F-statistic	35,2741	Durbin-Watson stat		2,0688
Prob. (F-statistic)	0,0000			

Source: Calculated and developed by the author based on the EViews program.

The multifactor econometric model looks like this:

$$y = 0,312 + 0,661x_1 + 0,597x_2 + 0,556x_3 + 0,685x_4$$

$$(0,096) \quad (0,049) \quad (0,048) \quad (0,054) \quad (0,049) \quad (2)$$

(The values given in parentheses are the standard error values of each factor).

From the results of this multifactor econometric model, we were able to draw the following conclusions:

while the convenience of the system (Eu) in the use of remote banking services improved by one unit, while the use of remote banking services (Y) affected the increase by an average of 0.661 units. In addition, it is necessary to introduce a special automatic «auto-payment» mode for monthly payments of the population. According to research, the ease of use of remote banking services and the customization of visuals at the discretion of the customer also have a significant positive impact on the use of these services;

while the security of personal data (Ss2) in remote banking services improves by one unit, while the use of remote banking services (Y) increases by an average of 0.597 units;

the importance of remote banking services in cost savings (Uu2), i.e. if the opportunity to save costs per unit is created, the use of remote banking services (Y) will increase by an average of 0.556 units;

while the quality and speed of the Internet (Cs2) in the implementation of remote banking services improves by one unit, the use of remote banking services (Y) increases by an average of 0.685 units. According to the Speedtest Global Index in May 2020, the speed of mobile Internet in Uzbekistan is 128th out of 138 countries, the speed of mobile Internet is 11.20 Mb / s, and the speed of fiber-optic Internet is 97th out of 173 countries. and 26.48 Mb / s also indicates how important this factor is [28].

The resulting coefficient of determination R², which represents the magnitude of the coefficient, was 0.802. This suggests that the outcome factor is sufficiently strongly correlated with the selected factors, i.e., 80.2 percent of the bank's customers' use of remote banking services depends on factors included in the multi-factor econometric model. The remaining 19.8 percent are due to other factors not taken into account.

Conclusion. The ease of use of remote banking services, i.e. the ease of use and customization of visuals, is important in the Uzbek services market and has a significant positive impact on the development of these services, as well as low financial literacy of the population in the use of such modern banking technologies. will have a significant impact on the further development of these services. We can also see this when their second factor is high personal data security (Ss2) in remote banking services. That is, they are afraid of misuse of remote banking services, disclosure of personal information, passwords and logins.

Due to the high importance of remote banking services in cost savings, until recently, these services were charged 2%. Further, from the state program on the implementation of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021 in the «Year of dialogue with the people and the interests of man» approved by the Decree of the President of the Republic of Uzbekistan dated February 7, 2017 No. DP-4947 «SMS-banking», «Internet-banking», «Mobile-banking»), halving the amount of rent for the use of payment terminals, reducing tariffs for transactions through remote banking services. As a result, today in all commercial banks these tariffs are reduced to 0.5%.

Currently, the quality and speed of the Internet in Uzbekistan is not sufficiently regulated. Unless we improve the quality and speed of the Internet in the development of remote banking services across the country, these services will not be popular. But further popularization of remote banking services requires a prudent conduct of the bank’s marketing policy. According to him, advertising these services by placing videos about remote banking services in crowded places, on Internet sites, social networks, television and in the front offices and halls of the bank with customers will also be very effective.

In particular, the increase in the number of bank branches due to the increase in the number of customers and the expansion of the territorial boundaries of banks is associated with high costs.

As a result, the bank’s customers will save time, reduce costs and improve the speed, transparency and mobility of banking services. The government’s focus on such banking services at the level of public policy will certainly have a positive effect in the future.

Remote banking services cannot be imagined without terminals, ATMs and kiosks. These simple-to-use devices today serve as a kind of mini-bank-office, ending the traditional interaction between the customer and the cashier. At present, it is possible not only to withdraw cash from these external means, but also to make various payments for goods and services. It should be noted that customers can use any bank terminal, ATM and kiosk 7/24, i.e. 24 hours a day, 7 days a week [17].

Although remote banking services are developing in Uzbekistan, during the COVID-19 pandemic, commercial banks faced many problems in remotely organizing banking services to the population and were unable to provide all services remotely to their customers. It is obvious that remote banking services in Uzbekistan are not yet sufficiently established.

In particular, the use of cash as a physical payment in the context of COVID-19 may be an active tool in the transmission of the virus. From a security point of view, banks close their branches or work with a minimum number of employees. In this context, it is time for banks to effectively use remote banking services, develop and improve digital programs. There has been a real impetus for the use of contactless payment, card and e-wallet-based payment systems, especially in retail payments [18].

In the development of remote banking services in Uzbekistan, the non-disclosure of all statistics and the fact that some statistics are banking secrets have caused some problems in the analysis process. In the future, it will be possible to conduct more attractive research if the share of remote banking services in the payment system, the amount of expenditures of banks for the development of remote banking services, as well as many other statistics.

Appendix 1

Research questionnaire

Use of remote banking services (U)	
(U)	Use of remote banking services
Awareness of remote banking services (As)	
(As1)	Influence of people close to my use of remote banking services
(As2)	The effect of advertising and information on the banks’ websites in my use of remote banking services
Ease of use of remote banking services (Eu)	
(Eu)	Level of convenience in using remote banking services
Security in the use of remote banking services (Ss)	
(Ss1)	Fraud in remote service systems
(Ss2)	Level of security of personal data in remote service systems
Understanding the usefulness of remote banking services (Uu)	
(Uu1)	The role of remote banking services in saving time in everyday life
(Uu2)	The role of remote banking services in cost savings

Cost of remote banking services (Cs)	
(Cs1)	The importance of price in the use of remote banking services
(Cs2)	The importance of Internet quality and speed in the implementation of remote banking services
Risk of using remote banking services (R)	
(R1)	The level of risk in conducting banking operations through remote banking services
(R2)	The level of fear of losing a list of PINs, falling into the wrong hands, and making incorrect payments

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