The efficiency and impact of banking electronic services: evidence for Kosovo

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Abstract: Since the beginning of 2000, the banking sector has been one of the most developed sectors in the Kosovo's economy. In the session of literature review, this paper will provide a brief background on the banking electronic services, their progress during last years in Kosovo and in other Balkan countries, as well as their impact in the whole banking sector. Appropriate methods for analysing the efficiency and impact of banking electronic services are presented in the methodology session. The results in data environment analysis have shown that the highest banking efficiency has been in 2013; it is a result of increased of the volume and the value of transactions in e-banking. Then, the results found through the ordinary least squares method have shown that e-banking and point of sale service have positive impact, but automated teller machine service has negative impact in banking net profit. Our conclusions are mainly based on the further improvement and development of electronic banking services.

Keywords: automated teller machine service; banking electronic services; banking net profit; data environment analysis; e-banking service; ordinary least squares method; point of sale service; scale efficiency; technical efficiency.

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1 Introduction

In recent years, development of technology is expanded significantly in the banking industry and it has enabled the development of new relationships between banks and their clients through electronic services, such as: internet banking, home banking and others electronic services (Chovanová, 2006). According to (Barjaktarović et al., 2016; Schaechter, 2002), using electronic banking services has become very popular because it has helped the banking customers to provide high qualitative services anytime and anywhere around the world with the necessary banking security. In a few Balkan countries, the banking electronic services has been used for over two decades and during this time, many factors have impacted in development of banking electronic services, such as: level of economic growth, openness of banking markets to global markets and capability to accepted the new banking technology (Kamnar, 2014). Despite the above-mentioned factors, and the effect of the recent financial crisis, in Kosovo the level of deposits and loans in banking sector have caused excess liquidity in the whole banking system and it has directly reflected in the increase of bank assets in Kosovo at the amount

of over 1.7 billion Euros in 2010 and 5.4 billion Euros in 2016 (CBK Report, 2017; Saywel, 2010).

1.1 Literature review

Digitalisation of the banking services has enabled banks to increase transparency and competitions in banking markets, to reduce costs and penetrate in new markets, as well as to increase their efficiency (IMF Report, 2001; Schaechter, 2002). However, the first machine that is used to address the large volume of banking transactions has been since the 1930s, then the Barclays Bank (UK) in 1969 has used the first electronic banking service (ATMs) in the world, and few years later, the IBM has presented the magnetic stripe plastic cards for banking services, these two innovations are characterised as the birth of electronic banking services (Batiz-Lazo et al., 2002; Bátiz-Lazo and Wood, 2002). Furthermore, the financial transaction in banking services started in the 1980s, and electronic services (by phone firstly) are appeared in the USA, and at the same time banking clients were able to pay their low-value telephone bills (Goloşiu, 2002). The banking sector in SEE countries has begun to improve their banking services in the early 1990s, but they still do not have the financial depth and banking services like in EU countries (Bonin et al., 2013). In terms of E-money services, the Balkan countries are in the first phase of putting into force the legislation to the use the e-money, while developed countries have adapted this legislation several years ago (Kamnar, 2014).

In terms of Kosovo, during the 1980s the banking system has been underdeveloped by the banking standards of that time and in the end of the 1990s, it was challenged with the loss of confidence, the freezing of foreign currency and attempts of the former Yugoslavia to dismantle the Kosovo's banking system (World Bank Report, 2001b). Since the end of the war (1999), Kosovo's institution and the International Administration (United Nation Mission in Kosovo – UNMIK) have started to established Kosovo's banking system and it was the first step to create the electronic interbank transfer system (EITS) in Kosovo, and it has enabled to carry out payment orders in electronically (World Bank Report, 2001a). According to the findings (Assembly of Kosovo, 2005; MEI Report, 2016), Kosovo's institutions in 2005 have facilitated legal framework for electronic services (including banking services) through Law on Information Society Services (Law No. 02 / L-23), and it is adopted from previous law of the United Nations Commission on International Trade (UNCITRAL). This law has enabled expansion of the range of banking electronic services in whole banking market in Kosovo (KCA Report, 2011).

Several years ago, the banking sector in Kosovo was challenged from different weaknesses, which have affected the development of the banking sector and as the main weaknesses were identified as the following: a limited cooperation between bank's services, reduction of their costs and improving the efficiency (IMF Report, 2013). On the other side, the main principles that are identified for improving banking electronic services in Kosovo are as following: continuous improvements in technological system (include security system), program for banking customer education (explaining benefits for electronic services), improving payment instruments and legislation (KBA Report, 2012). Despite the recent financial crisis, Kosovo has a very stable financial system and enjoys a very sound footing in the banking sector, most specifically in non-performing loans (among the lowest in the Western Balkan countries) and the bad debts in Kosovo are covered more than 100% from provisions (Alexander, 2012). So, the favourable

banking environment in Kosovo has encouraged banks to develop their electronic services and it has enabled fairly large use of these banking services in recent years (CBK Report, 2015b).

Despite the increase of the quality and the use of the banking electronic services in the Western Balkan countries, in a few countries the rate of banking customers (retail) remains still low (Bucevska and Bucevska, 2013; Glaveli et al., 2006). According to the findings (SSO Report, 2015), in 2015 only 7% of citizens (out of 69% of the total population had internet access) in Macedonia have used e-banking services. As argued by Ivanovska (2017), the main factors for not using banking electronic services are: lack of information, conservative thinking and distrust on electronic payments. Also, it can be affected by current law regulations that provide few Balkan countries (particularly in Serbia) and these regulations have hampered the banking electronic services for further development (Radojevic and Radovanovic, 2010). Despite the high use of e-banking services in Montenegro, banks need to develop and promote their services, and in the same time to increase the customer satisfaction, because 11% of banking customers are completely dissatisfied with banking electronic services (Jovovic et al., 2016).

Moreover, customers with high income in Greece are less prone in using the electronic banking services, in fact they provide high volume of transactions and they want to realise the process of transactions through face to face meetings (Santouridisa and Kyritsi, 2014). Then, only few banks in Romania are able to use efficiently the banking electronic services to enhance their performance and they must encourage their customers to use these services, particularly in services of deposits, payments and money transfers (Stoica et al., 2015). In the other side, banking customers in Turkey prefer to use internet banking and they perceive that this is convenient for modern work style, very useful and easy to use (Daneshgadeh and Yildirima, 2014). In general, the banking market in Balkan countries is very similar and is characterised by a continuous increase of banking electronic services (Banka, 2013; Kristo and Gjipali, 2014). During research period, Kosovo has increased the annual average (per million inhabitants) of using the banking electronic services (see Figure 1).

Figure 1 The using of electronic banking services 2011–2016 (the annual average percentage, per million inhabitians) (see online version for colours)
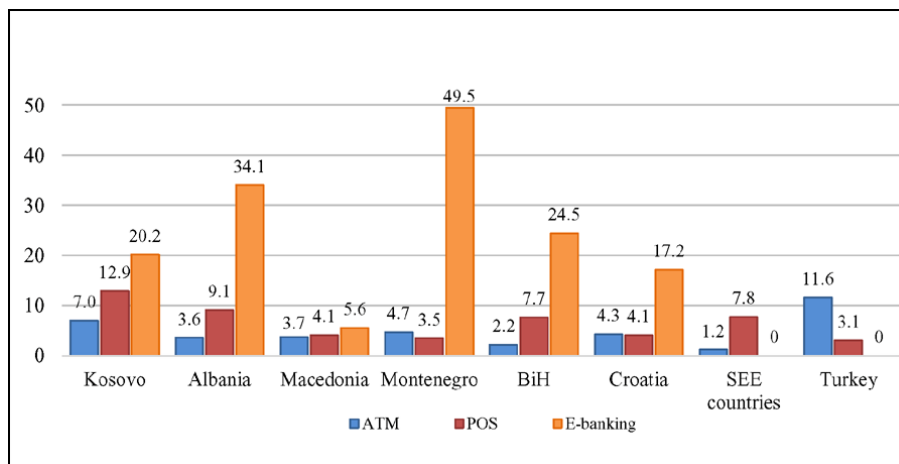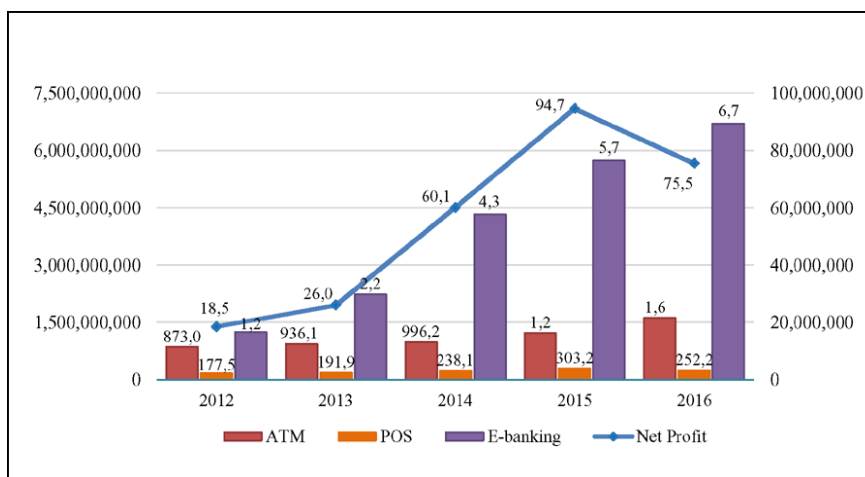

Source: CBK Annual Reports 2010–2016

According to CBK Report (2013), ATM services in Kosovo have been used since 2002, and their number in the banking market were only 12, and this number in 2012 is increased in 480 of ATMs. Furthermore, the total number of ATMs in the banking market in 2016 has reached 522 (CBK Report, 2017). This rapid increase has enabled Kosovo to use the highest annual average of 7% (per million inhabitants) of ATMs more than many of Balkan and SEE countries (expect Turkey) during research period 2011–2016. In terms of Point of Sale (POS) and the e-banking services, they have increased their participation in the Kosovo's banking market from 2005 to 2012 (CBK Report, 2013). Moreover, POS service in Kosovo is characterised by the increase of annual average by 12.9% (per million inhabitants) during the research period 2011–2016; it is the highest annual average of POS service more than other countries in region (see Figure 1). In recent years, banking clients have been focused mainly on the use of e-banking services and it is the most dominant banking service in Kosovo's banking market as well as in the most of Balkan countries (CBK Report, 2016). Kosovo has the annual average of 20.2% (per million inhabitants) of e-banking services, but some of Balkan countries have higher annual average of e-banking services than Kosovo.

Modernisation of the banking market in Kosovo and the continuous improvement of banking electronic services has resulted in the annual increase of the volume of payments and the value of transactions in banking sector (CBK Report, 2014). In recent years, banking net profit has rapidly increased (see above Figure 2), where in 2013 banking net profit has been only 26 million Euros, while in 2016 it has reached the amount of 75.5 million Euros. This is all a result of huge using of value of transactions through ATM services (over 873 million Euros in 2012 to 1.6 billion in 2016) and e-banking services (over 1.2 billion Euros in 2012 to 6.7 billion Euros in 2016), but the value of transactions through POS has been lower than ATMs and the e-banking services during this period (over 177 million Euros in 2012 to 252 million Euros) (CBK Report, 2015b, 2017). At the same time, the volume of transactions through these banking services is increased significantly (from over 12 million transactions in 2012 to over 22 million transactions in 2016) in Kosovo's banking market (CBK Report, 2015a, 2017).

Figure 2   The using of electronic instruments payments and banking net profit in Kosovo (Euros) (see online version for colours)

Source: CBK Annual Reports 2011–2016

2 Methodology

The main focus of the research paper is to increase research knowledge in the field that the research aims to (Saunders et al., 2007). However, in order to achieve the aim of the research, the author(s) should use the basic principles (sections) of methodology. As Davison (1998) states, methodology is an appropriate way in which data should be identified, collected and analysed in research processes. The sections of methodology are organised as follows. In the first section is described about the research design. The second section explains the nature of data collection. The third section discusses methods of data analysis and their econometric models.

2.1 Research design

Through section of research design, researchers have presented the strategies that provide specific direction during procedures of research and these strategies contribute to improvement of the overall research approach (Creswell, 2003). The research strategy is mainly focused on assessing the efficiency and the impact of electronic banking services in net profit of Kosovo banking sector through the most appropriate methods (DEA and OLS). Based on the definition of electronic banking services that are included in research, ATM (withdrawal and payments) and POS (Point of Sale) are defined as terminals infrastructure, whereas e-banking service is defined as payment instrument. However, all of these banking services are categorised as electronic payment instruments. In terms of research limitations, the research focus has been to include the data from 2010 to 2016, but the annual report of CBK in 2010 has not provided appropriate data for ATM, POS and e-banking electronic services (except of banking net profit). Thus, the main research questions are based on research analyses and they are presented as follows:

> When is the banking efficiency (technical efficiency) as well as efficiency gap higher, based on DEA analysis (according to CRS and VRS models)?
>
> What (how much) is the average of efficiency, the scale efficiency and the mean standard of Kosovo's banking efficiency, during the period 2012–2016?
>
> Which of independent variables (ATM "automated teller machine", POS "Point of Sale" payments and E-banking services) have the highest impact in dependent variable (banking net profit)?
>
> How much is the coefficient of determination and correlation matrix?

2.2 Data collection

In the research activity, the data collection strategy is essential for finding and processing the existing data (Eggleston et al., 2006). So, when we determine the method of data collection, it is very important to define the primary and secondary data. In this research is used the methodology of collecting the secondary data. As state (Hox and Boeije, 2005), the secondary data collection is possible through the use of official statistical reports and other administrative records that are kept routinely from institutions. The data used throughout this research are annual data and they are obtained from the official reports of the relevant financial institution in Kosovo, such as the Central Bank of the Republic of Kosovo – CBK. These data include the period of time 2012–2016 for both methods - DEA and OLS. Table 1 shows the data collection for both analyses.

Table 1   Data collection for analyses

DEA method		OLS regression method	
Input	*Output(s)*	*Dependent variable*	*Independent variable(s)*
Net Profit	ATM Withdrawals	Net Profit	ATM Withdrawals
	POS Payments		POS Payments
	E-banking Services		E-banking Services

Source: Author

In fact, the data used are the same for both methods and the process of their explanations is as follows: The input/independent variable including:

- Net Profit, it is defined as a result of the difference between the total revenues and total expenditures that banks realise in their banking activities (CBK Report, 2017).

The output(s)/independent variable(s) including:

- ATM, it provides banking clients with access to their bank accounts for cash withdrawals and deposits without intervention of banking staffs (Khalifa and Saadan, 2013)

- POS Payments, it is used from banking consumers to provide their purchases (goods and services) easily and more quickly (Whitteker, 2014)

- E-banking Services, these included electronic services for banking consumers by using the internet to access banking transactions and other online banking services (Keivani et al., 2012).

2.3   *Methods of data analysis*

In this section are defined the research techniques for data analysis. Based on the research questions, quantitative techniques are used throughout the research. As it is argued (Creswell, 2009; Lacey and Luff, 2009), quantitative research techniques provide descriptive and numerical analysis and these need to be summarised, described and analysed. Then, the main research methods for data analysis are defined: the first method is data envelopment analysis (DEA) and the second method is ordinary least squares (OLS). At the beginning, it is necessary to explain and define the efficiency as a very important indicator in measuring inputs and outputs. So, the best-practice of efficiency is constructed through a linear combination of input-output, and its score varies between 0 to 1, as well the higher scores (close 1) determine more efficiency (Fethia and Pasiouras, 2010). In general, as it is argued (Vincová, 2005) the efficiency rate can be expressed as follows:

$$\text{Efficiency} = \frac{\text{weighted sum of output(s)}}{\text{weighted sum of input(s)}} + \frac{\sum_{i=1}^{s} U_i Y_{iq}}{\sum_{j=1}^{m} V_j X_{jq}} \tag{1}$$

where

ui, *i* = 1, 2, …, s, are weights assigned to *i*th output

Y = (*yij*, *i* = 1, 2, …, *s*, *j* = 1, 2, …, *n*) output matrix

vj, *j* = 1, 2, …, *m*, are weights assigned to *j*th input

X = (*xij*, *i* = 1, 2, …, *m*, *j* = 1, 2, …, *n*) – input matrix

*q*th shows quantified inputs / outputs per productive units.

In order to estimate the efficiency, the analysts have used the data envelopment analysis (DEA), which is a mathematical and statistical method that analyses the efficiency (Jemrić and Vujčić, 2002; Kirigia et al., 2010). Also, measurement of efficiency through DEA model should use the same resources, technology and goals in analysis (Toby, 2006). Moreover, DEA method has a wide use in measuring of efficiency in many other institutions (Mikušová, 2015). The most common models of DEA method are: variable returns to scale (VRS) model and constant returns to scale (CRS) model. The VRS model allows the possibility of production technology of DMUs which may exhibit increasing, constant and decreasing the return of scale (Lemonakis, 2015). The CRS model is the ratio of maximisation of weighted multiple outputs to weighted multiple inputs (Ozcan, 2008). As Kirigia et al. (2010) says, the DEA model is formulated in the following form:

Objective function of DEA model:

$$\text{Maximise} = \sum_{r=1}^{s} Ur Yrjz + Uz \tag{2}$$

Subject to:

$$\sum_{i=1}^{m} Vi Yijz = 1 \tag{3}$$

$$\sum_{r=1}^{s} Ur Yrj - \sum_{i=1}^{m} Vi Xij + Uz \leq 0; \qquad j = 1, 2, \ldots, n \tag{4}$$

$$Ur, \geq 0; \quad r = 1, \ldots, s,$$

$$Vi, \geq 0; \quad i = 1, \ldots, m,$$

where

Yrj (*r* = 1, 2, ..., *s*) = Actual amount of *r*th output for *j*th banks

Xij (*i* = 1, 2, ..., *m*) = Actual amount of *i*th input *j*th banks

Ur is the weights to be determined for output *r*

Vi is the weights to be determined for input *i*

n = number of banks included in the model

z = the banking (sector) being assessed in the set of *j* = 1, 2, ..., *n* banks

s = is the number of outputs

m = is the number of inputs.

The second method for analysing the impact of banking electronic services is the ordinary least squares (OLS) method and correlation method. It explains the relationship between a response variable (Y) and an explanatory variable (X) and it may be applied to single or multiple explanatory variables (Hutcheson, 2011). The data in this method are calculated through Stata program (econometric software). It is statistical program that combines ease of data use, data – management capabilities, and enables users to add further capabilities as needed (Hamilton, 2013). As Cottrell (2003) states, OLS method is based on the following equation:

$$Yi = \beta 0 + \beta 1(xi) + ui \qquad (5)$$

Variables that are used in the above equation are:

Yi = dependent variable

xi = independent variable

*β*0 and *β*1 = estimates of parameters

ui = random error.

Then, correlation method is defined when the values of one variable have negative or positive relationship (from –1 to +1) with the values of the other variables (Kozak, 2014). Also, data analysis on the correlation method is made by Stata program. As Freeman (2009) argues, correlation method is presented on the following equation:

$$r = \frac{\sum_{i=1}^{n}(x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \overline{x})^2 \sum_{i=1}^{n}(y_i - \overline{y})^2}} \qquad (6)$$

Variables that include the above formula are as follows:

Σ = sum of '*n*' variables

n = sample size (no of observations)

x_i and y_i= continuous random variables

$\overline{x}$ and $\overline{y}$ = sample mean of *x* and *y* variables.

3   Empirical results and interpretation

Empirical results are the basic component of research process and its interpretation is essential to understand the meaning of the research (Kothari, 2004). The banking electronic services in Kosovo are increased significantly in recent years (nearly 50%), and the main focus in this research is to measure the efficiency and the impact of banking electronic services through two main methods: DEA method (it includes CRS model and VRS model) and OLS method, as well as correlation matrix. The first method is about measuring efficiency of banking electronic services in net profit of Kosovo banking sector. The results have shown that the highest technical efficiency based on two technical models (CRS = 1.00 and VRS = 1.00) of the DEA method is in 2013

(see Table 2). Also, it reflects the highest ranging efficiency (per years) than other years, included in the research period. The highest technical efficiency in 2013 is as a result of the increased net profit of over 40% than in 2012, also at the same time, e-banking services are increased in the volume of transactions (over 67%) and the value of transactions (over 75%). The efficiency gap in 2013 is the lowest in both technical models of DEA method (CRS = 0.00 and VRS = 0.00) and on other side, the scale efficiency and lambda weigh in 2013 are 1.00 respectively 1.00.

Table 2 The DEA efficiency of banking electronic services (through CRS and VRA Models)

	CRS Model					*VRS Model*				
Years	*2012*	*2013*	*2014*	*2015*	*2016*	*2012*	*2013*	*2014*	*2015*	*2016*
No of variables (Output + Input)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)	(1+3)
Technical efficiency	0.96	1.00	0.84	0.70	0.91	1.00	1.00	1.00	0.97	1.00
Ranging efficiency (per years)	2	1	4	5	3	1	1	1	5	1
Efficiency gap	0.04	0.00	0.16	0.30	0.09	0.00	0.00	0.00	0.03	0.00
Mean efficiency			0.883					0.995		
Years	2012		2013		2014		2015		2016	
Scale efficiency (CRS/VRS)	0.96		1.00		0.84		0.72		0.91	
Lambda weight	1.00		1.00		1.00		0.87		1.00	

Source: Authors calculations

Despite the decreased banking net profit in 2012, it is characterised with the 2nd highest technical efficiency based on two technical models (CRS = 0.83 and VRS = 1.00) of DEA method. It is the result of improved infrastructure of ATM terminals (over 5%) and POS terminals (almost 14%). At this time, ATM and POS services have been as the main electronic banking services in Kosovo banking sector. But, the gap efficiency in 2012 is the lowest (except for 2013), based on two technical models (CRS = 0.04 and VRS = 0.00). In other side, scale efficiency (CRS/VRS) and lambda weight have shown the highest results when compared to other years included in the research period (except for 2013). Based on the results on two technical models (CRS = 0.91 and VRS = 1.00) of the DEA method, technical efficiency in 2016 is the 3rd highest efficiency when compared to other years included in the research period (see Table 2). It is the result of increased use of the ATM terminals (almost 18%), POS terminals (over 24%) and e-banking services (over 26%). The efficiency gap in 2016 based on two technical models is 0.045 score (CRS = 0.09 and VRS = 0.00), it is higher than in 2015 and 2014, but is lower than in 2013 and 2012. The scale efficiency (CRS/VRS) in 2016 is found to be 0.91 and it is one of the lowest scales (except for 2014 and 2015), but lambda weigh has higher values (1.00) compared to the other years that are involved in this research paper (except in 2015).

In 2014, technical efficiency based on two models (CRS = 0.84 and VRS = 1.00) of DEA method is characterised by low results (except 2015) and it has the 4th ranging efficiency (per years) in the research period (see Table 2). It comes as a result of increased ATM terminals (with only 7.3%) and POS terminals (3.1%). The efficiency

gap, based on the two models (CRS = 0.16 and VRS = 0.00) have shown the lowest results during the period referred to the research (except the result in 2015). Also, the scale of efficiency has shown one of the lowest results (0.84) in the research period, but the lambda weigh has the same high results as the other years in the research period (except 2015). Despite of the high increase of the banking net profit in 2015, technical efficiency in both models (CRS = 0.70 and VRS = 0.97) is characterised with the lowest results in the research period. On the other side, the efficiency gap (based on two models: CRS = 0.30 and VRS = 0.03) is the highest than other years of research period. But, scale efficiency (CRS/VRS) and lambda weigh have shown the lowest results in the research period (0.72 respectively 0.87). In terms of the mean efficiency, both models have shown high positive results (see Table 2), but if they get compared, the VRS model has higher mean efficiency (0.995) than CRS model (0.883).

The second analysis is OLS method and it determines the impact of banking electronic services in net profit of Kosovo's banking sector and include period of time 2012–2016 (see Table 3(A)). The results have shown that ATM has negative impact ($\beta1 = -0.004$) in net profit of Kosovo's banking sector, and it is as the result of the small increase of ATMs in Kosovo, where the annual growth of ATMs is 7.5% (from 483 ATM's terminal in 2012 to 522 ATM's terminal in 2016), while POS has 18.9% the annual growth and e-banking has over 68% during the research period. Then, e-banking service has positive impact ($\beta2 = 0.005$) in net profit of Kosovo banking sector. Despite the huge increase of volume and value of transactions in e-banking service in Kosovo, the number of users of this service has increased rapidly only from 2014 to 2016. However, POS as banking service has the highest positive impact ($\beta3 = 0.446$) in net profit of Kosovo banking sector, it is as a result of the continuous growth of users in POS service (the average annual growth 9.5%) as well in increase in volume of transactions (the average annual growth 19.3%) and value of transactions (the average annual growth 10.6%).

Table 3(A)   Test of ordinary least squares method

Net profit	Coefficient	Std. Err.	t-statistic	P > t	[95% Conf	Interval]
ATM	−0.004	0.014	−0.30	0.81	−0.189	0.180
E-banking	0.005	0.003	1.69	0.34	−0.034	0.044
Point of Sale	0.446	0.081	5.51	0.11	−0.583	1.475
Constant	−6.502	2.067	−3.14	0.20	−3.277	1.977

Source: Authors calculations

Then, as a significant result is the coefficient of determination, it is a statistical indicator that explains the amount of variance in the relationship between two or more variables in analysis and the results of variation are related from 0 to 1 (Salkind, 2010). Based on the results of the analysis (see Table 3(B)), the R^2 is 0.99 and it indicates that the results of analysis (closely 1.00) exactly explain the variability of relationship between two or more variables in analysis. Table 4 is present correlation matrix, it provides the strength of relationship between dependent(s) and independent(s) variables by using suitable statistical analysis, and its results range between −1 to +1 (Burghes, 2005). Based on the correlation results, three independent variables in analysis have shown positive correlation with Kosovo banking net profit. POS service has strong correlation (0.99) or

almost exactly in line with the net profit of the bank. Thus, e-banking service has strong (0.93) with banking net profit and the last one, ATM service has a higher correlation than average in banking net profit.

Table 3(B)   Test of ordinary least squares method

Source	SS	df	MS	F (3, 1) =	179.31
Model	4.1878	3	1.3959	Prob > F =	0.055
Residual	7.7851	1	7.7851	R-squared	0.998
Total	4.1956	4	1.0489	Adj R-squared	0.993

Source: Authors calculations

Table 4   Correlation matrix

	Net profit	*ATM*	*POS*	*E-banking*
Net profit	1.00			
ATM	0.71	1.00		
POS	0.99	0.61	1.00	
E-banking	0.93	0.89	0.86	1.00

Source: Authors calculations

4   Conclusion

In recent decades, the banking electronic services are one the most important and attractive services in the banking market in Kosovo and other countries in the region, but the process of using, improving and advancing the electronic banking services has been accompanied with different difficulties and challenges in some of the Balkan countries. Based on results of the first analysis, the highest technical efficiency based on both technical models (CRS = 1.00 and VRS = 1.00) of the DEA method is shown in 2013. It is a result of the e-banking services' increase in the volume of transactions (over 67%) and the value of transactions (over 75%), as well as the increase of the banking net profit (over 40%). But, despite of the high increase of the banking net profit in 2015, technical efficiency based on the two models (CRS = 0.70 and VRS = 0.97) has shown the lowest results. Based on the results of the second analysis (OLS method), ATMs have shown a negative impact in the banking net profit, but POS and e-banking services have shown positive impact. Based on the findings of the research, it is seen that POS services have shown the highest positive correlation, while e-banking and ATM services have shown the lowest positive correlation. Thus, the authors conclude that banks in Kosovo should increase their quality services through continuous improvement and modernisation of electronic banking services. It will also have impact on increasing of confidence and reduction of classical banking services (face to face). At the same time, results of this research likewise the ones of many other researches have shown that these services are the most useful, easy to use and the most appropriate in modern working style.

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