ANALIZA SAVREMENIH SISTEMA PLAĆANJA U SRBIJI I ZEMLJAMA REGIONA

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Apstrakt

Razvojem Interneta i sve bržim napretkom informacionih tehnologija, elektronsko bankarstvo postaje dostupno svim klijentima, bez obzira na geografsku dislociranost. Ukoliko analiziramo tržište Republike Srbije možemo uvideti da su plaćanja eloktronskim putem manje razvijena u Srbiji u odnosu na zemlje regiona, a posebno u poređenju sa svetom. Predmet istraživanja biće upotreba elektronskih sistema plaćanja, mobilna plaćanja kao i komparativna analiza upotrebe istih u Republici Srbiji i zemljama regiona sa ciljem da se ukaže koje su to prednosti ovog vida plaćanja. U radu će se razmatrati i uticaj siistema elektronskih plaćanja kao i u kojoj meri su korisnici spremni da prihvate ove sisteme.

Ključne reči: *elektronska plaćanja, elektronski novac, mobilna plaćanja, troškovi*.

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Uvod

Plaćanja se više ne obavljaju samo tradicionalnim metodama, već su u ponudi i elektronski sistemi plaćanja. Sa napretkom računarske tehnologije i Interneta imamo ubrzan proces prenosa i obrade podataka i sve veću upotrebu mobilnih i elektronskih plaćanja.

Elektronsko poslovanje pruža usluge korisnicima koristeći benefite informacionih tehnologija. Razvojem elektronskog poslovanja je stvorena nova kategorija novca – elektronski novac, kao zamena gotovog novca, koji se čuva u elektronskoj ili magnetnoj formi. Elektronski novac je postao predmet brojnih diskusija nakon pojave Bitkoina, Eterijuma, Lajtkoina i drugih kriptovaluta. Pojam digitalnog novčanika je relevantan za većinu novih sistema digitalnog plaćanja. Digitalni novčanik je virtuelni sistem za skladištenje koji može da sadrži novac i digitalni sertifikat identiteta korisnika.

U skladu sa definisanim predmetom i ciljevima istraživanja, kao i postavljenim hipotezama: korisnici brže usvajaju mobilne sisteme plaćanja, nego elektronske sisteme plaćanja zasnovane na računarima, u radu će biti korišćene relevantne naučne metode za prikupljanje, analizu i interpretaciju podataka.

Pojmovne karakteristike elektronskih sistema plaćanja

Generalno, elektronska plaćanja predstavljaju oblik finansijske razmene između kupca i prodavca koja je olakšana sredstvima elektronske komunikacije. Elektronski sistemi plaćanja olakšavaju nam da nakon odluke kupaca da kupe proizvod ili uslugu, realizuju plaćanja kupaca prodavcima na najefikasniji, najbrži i najsigurniji način. Uloga sistema elektronskog plaćanja je ključna za budućnost e-trgovine, čiji dalji rast zavisi od blagovremenog razvoja ESP.

Uloga Interneta u razvoju elektronskog poslovanja

Online poslovanje, poznato i kao e-poslovanje ili elektronska trgovina, odnosi se na obavljanje poslovnih transakcija putem Interneta, što uključuje razmenu informacija o vrednosti u obliku proizvoda i usluga, kao i plaćanja, koristeći Internet tehnologije. Upotreba Interneta uslovila je nastanak digitalne

ekonomije, koja predstavlja savremeni oblik privređivanja zasnovan na digitalnim tehnologijama i upotrebi informaciono-komunikacionih tehnologija i Interneta u svim oblastima ekonomije.

Informacije koje se mogu pronaći putem Interneta imaju važnu ulogu u donošenju odluka kako proizvođača, tako i potrošača. Ponašanje potrošača je uvek bio pod uticajem dostignuća u informaciono-komunikacionim tehnologijama. Internet i društvene mreže su značajno promenile način na koji pojedinci planiraju proizvodnju ili kupovinu određenih proizvoda ili usluga. Korišćenje Interneta i društvenih medija fundamentalno menja način sprovođenja poslovanja. Svi učesnici u poslovanju su više informisani, povećava se međusobna saradnja i otvaraju se nove mogućnosti za unapređenje poslovanja. Korisnici Interneta mogu da pretražuju ponudu, da se informišu o kvalitetu proizvoda ili usluge pomoću predstavljenih informacija, mogu da se informišu o načinu kupovine i korišćenja proizvoda, kao i da ugovore i plate kupovinu.

Pružanjem informacija o proizvodu ili usluzi organizacije na Internetu i mogućnosti rezervacije i ugovaranja prodaje, organizacije usklađuju svoj model poslovanja u skladu sa potrebama i očekivanjima nove generacije potrošača. Argumenti zašto organizacije koriste Internet i društvene medije u svom poslovanju su: mogućnost targetiranja, merljivost, pristupačnost i niska cena.

Karakteristike i trendovi razvoja online poslovanja

Online poslovanje ispoljava određene karakteristike kada se poredi sa tradicionalnim poslovanjem. Mogu se navesti sledeće: promene u odnosu prodavac – kupac, povećana brzina, udaljenost više nije bitan parametar, globalno tržište, smanjenje vremenskih disproporcija, veština upravljanja je ključ uspeha, otvorenost, interdisciplinarnost i zaštita intelektualne svojine.

Jedan od segmenata razvoja online poslovanja upravo je razvoj elektronske trgovine. To je revolucionaran i savremen način obavljanja trgovinskih aktivnosti, koji se zasniva na korišćenju informacionih i komunikacionih tehnologija. Shodno tome, najjednostavnije se može objasniti kao kupovina i prodaja robe i usluga koja se odvija uz značajnu primenu savremenih,

informaciono-komunikacionih tehnologija. Dinamičan razvoj elektronske trgovine počinje početkom devedesetih godina 20. veka, pod velikim uticajem otvaranja Interneta. Amazon.com je bio jedan od prvih sajtova za e-trgovinu u SAD, koji je započeo prodaju proizvoda na mreži. Nakon toga su kompanije u velikoj meri počele da posluju na ovaj način. Ozbiljniji začeci elektronske trgovine registrovani su nakon 1997. godine, kada mnogeorganizacije u svoj fokus poslovne primene Interneta stavljaju prodaju proizvoda, a ne samo promociju. Od 2000. godine kada je Internet postao dominantan poslovni kanal elektronske trgovine, organizacije akcenat stavljaju na smanjenje troškova poslovanja na Internetu i posmatraju kako Internet utiče na njihovu profitabilnost.

O dinamičnom rastu globalne elektronske trgovine svedoči i podatak da je prosečna godišnja stopa rasta elektronske trgovine u svetu 24,8%. Potencijal elektronske trgovine za dalji dinamičan razvoj nalazi se u koristima koje dolaze od primene ovog poslovnog koncepta, pre svega smanjenje troškova, u raznim segmentima poslovanja od nabavke i skladištenja do troškova poslovne komunikacije. Online kupovina je jedna od najpopularnijih online aktivnosti širom sveta, a sam obim elektronske trgovine razlikuje od zemlje do zemlje. Današnje poslovanje i izvršavanje plaćanja u velikoj meri se oslanja na tehnologiju kako bi olakšalo komunikacioni proces. U stvari, mnoge tehnologije koje se koriste u privatnom životu, takođe se koriste i u poslovanju. Gotovo je izvesno da su neki aspekti današnje globalizacije nezaustavljivi, kao što je to slučaj sa razvojem Interneta i opštom primenom informacionih tehnologija u svim aspektima društvenog i poslovnog života, pa tako i u sferi online poslovanja i elektronske trgovine.

Mobilna plaćanja i elektronski novac

Zahvaljujući sve većoj upotrebi online kupovine, sistemi plaćanja putem interneta postaju dominantan oblik plaćanja. Može se uočiti trend rasta plaćanja putem mobilnih telefona, pri čemu pametni telefoni u potpunosti preuzimaju funkciju tradicionalnog novčanika: u telefonima se mogu čuvati podaci o karticama, lična dokumenta, elektronski novac i sl. Pojedini elektronski sistemi plaćanja su projektovani kao elektronske verzije tradicionalnih platnih sistema, dok su napredniji sistemi zasnovani na razmeni

digitalnih informacija i imaju snažan uticaj na dalji razvoj finansijskih i monetarnih sistema.

Elektronski novac

U sistemima elektronskih plaćanja se sve više koristi elektronski novac, koji se u literaturi može naći pod različitim nazivima: digitalni novac, e – novac, sajber novac, i slično. Elektronski novac predstavlja zamenu za gotov novac, s tom razlikom što se čuva u elektronskoj ili magnetnoj formi – na čipu, serveru ili platnoj kartici. Ključni elementi elektronskog novca se odnose na višenamenski karakter upotrebe (elektronski novčanik) i unapred izvršenu uplatu određene kupovne snage (pre – paid kartice).

Francuski autor Robert Guttmann razdvaja kategorije elektronskog i tzv.sajber novca. Pod elektronskim novcem podrazumeva sve kategorije plaćanja u kojima se koriste kanali zasnovani na internet tehnologijama (internet, POS terminali) u kombinaciji sa platnim karticama, dok pod sajber novcem podrazumeva „elektronske novčanike“ (kartice sa pre – paid uplaćenom monetarnom vrednošću) i softverski novac kojim se raspolaže isključivo preko softvera instaliranog na računaru. Određeni autori ističu posebnu kategoriju virtuelnog novca, koji se odnosi na valutu koja je dostupna samo članovima određenog zatvorenog sistema.Virtuelni novac nije namenjen za korišćenje u stvarnom svetu, odnosno ne koristi se za kupovinu realnih dobara ili usluga, već predmet trgovine ima virtuelni karakter kao i sam novac (npr. video igre).Sve virtuelne valute su centralizovane, a kontrola nad novčanim snabdevanjem se nalazi u rukama programera virtuelnog sveta.

Mobilna plaćanja

Mobilni telefoni su u upotrebi širom sveta, pri čemu najveći broj predstavljaju takozvani pametni (eng. smart) telefoni. Oni su usvojili određene funkcije računara, pružaju mogućnost njihovog svakodnevnog korišćenja, uključujući brzi pristup Internetu, upotrebu Wi-Fi i mobilne mreže.

Uprkos mnogobrojnim prednostima, postoje i rizici sa kojima se suočavaju mobilni uređaji. Ovi rizici uključuju ograničenja vezana za probleme opsega, pitanja sigurnosti, ometanja prenosa, pretpostavke moći, kao i niz drugih sličnih stavki. Primarna ograničenja povezana sa opsegom i propusnim

opsegom mogu se pripisati činjenici da su mreže dostupne pomoću mobilnih uređaja uglavnom ograničene na niz komercijalnih mreža. Glavna pretnja povezana sa mobilnim uređajima odnosi se na bezbednosna pitanja.

Najznačajnija tehnologija kod mobilnog telefona je tzv. inteligentna kartica (eng. smart card) koja predstavlja osnovu za sve osnovne usluge i protokole koje pruža kako operater mobilne mreže tako i dodatne usluge koje pružaju treći subjekti. Inteligentna kartica omogućava upotrebu više sistema koji se bave organizacijom mobilnih plaćanja, kao i integrisanu upotrebu različitih elektronskih tehnologija.

Istraživanje mobilnih plaćanja privuklo je značajnu pažnju među stručnjacima u njihovom nastojanju da objasne logičnost o tome kako provajderi mobilnih plaćanja inoviraju i konkurišu na tržištu. Mobilni operateri imaju ključnu ulogu u procesu mobilnog plaćanja. Međutim, akcije drugih tržišnih aktera (regulatora, finansijskih institucija, proizvođača uređaja, trgovaca), kao i tržišni faktori (dostupna mreža, bankarstvo, trgovačka i potrošačka tehnologija, zakonodavstvo, navike korišćenja platnih instrumenta) mogu uticati na pružaoce usluga i druge aktere na tržištu. Dakle, ovaj okvir omogućava proučavanje načina na koji različite strateške opcije mogu uticati na konkurentsku poziciju aktera ili performanse čitavog tržišta. Kontingentni faktori utiču na sistematski način na aktere i tržište, ali su van direktnog uticaja i kontrole bilo kojeg tržišnog aktera. Teorija kontingencije je od suštinskog značaja za istraživanje razlika između tržišta mobilnih plaćanja (posebno različitih zemalja). U novijim studijama, ova pitanja su uglavnom ugrađena u strategiju i studije ekosistema, koji se koristi kao sinonim za "tržište m-plaćanja i provajdera".

Operateri mobilnih mreža značajno su uložili u poboljšanje komunikacije i razvoj novih tehnologija i usluga, usled čega je došlo do povećanja korisnika mobilnih telefona i njihove upotrebe za obavljanje platnih transakcija. Pored toga, došlo je do povećanje broja i kvaliteta bankarskih usluga pruženih putem Interneta, što je dodatno uticalo na snažan rast mobilnog bankarstva. Mobilno bankarstvo se posmatra kao model e-poslovanja banaka i operatora koji koriste mobilne telekomunikacione mreže kako bi pružili bankarske usluge klijentima i putem njihovih mobilnih uređaja. Ovaj model omogućava plaćanje putem

mobilnog bankarstva, kontrolu bilansa računa, uzimanje kredita i niz drugih finansijskih usluga i transakcija.

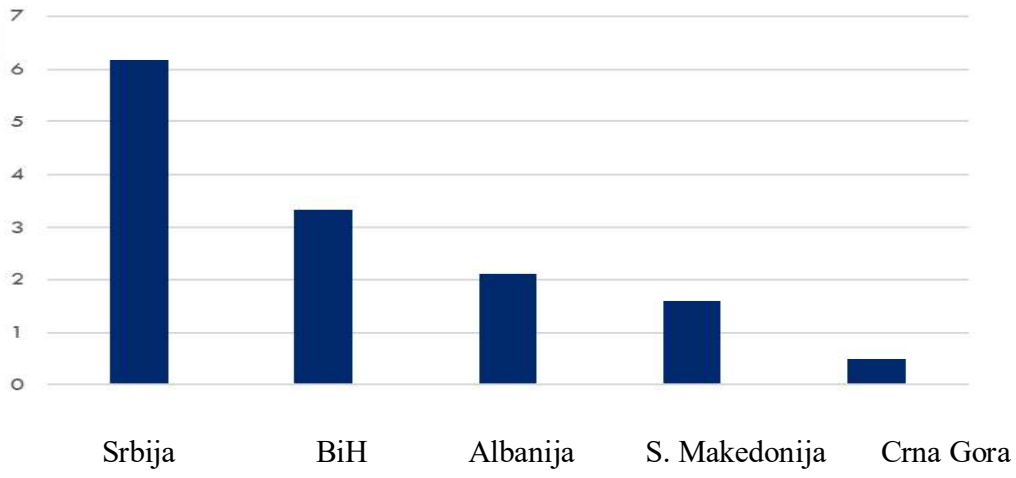
Mobilno bankarstvo ima veliki potencijal primene. Savremeni stil života je nezamisliv bez mobilnog telefona, a promene koje uvodi e-poslovanje bankarskih sistema podstiču razvoj mobilnih aplikacija za korišćenje usluga mobilnog bankarstva. Uzimajući u obzir broj korisnika mobilnih telefona, kao i mogućnosti koje oni pružaju, ne iznenađuje činjenica da se mobilna platforma široko koristi za elektronska plaćanja.

Upotreba i analiza savremenih sistema plaćanja u Srbiji i zemljama regiona

Sa svojom malom populacijom, relativno niskim prihodima i velikom neformalnom ekonomijom, zemlje regiona nisu najbolje okruženje za negovanje e-trgovine. Keš je i dalje kralj na ovom prostoru. Međutim, broj bezgotovinskih transakcija polako raste. Veliki izazov za online plaćanja u zemljama Zapadnog Balkana odnosi se na visoke troškove obrade transakcija — naknade za procenu kartice su do četiri puta veće nego u EU. Centralne banke su najavile planove za usklađivanje domaćih politika sa propisima EU, što bi moglo dovesti do liberalizacije tržišta i nižih transakcionih troškova.

Internet je u širokoj upotrebi u Srbiji, iako zemlja zaostaje za razvijenim zapadnoevropskim nacijama. Kako navodi Statista, očekivani broj korisnika interneta do naredne godine dostići će 86,21%. Kada je reč o apsolutnom broju, Srbija prednjači u regionu. U relativnom smislu, BiH i Crna Gora su ipak lideri. Srbija prednjači u regionu Zapadnog Balkana i po apsolutnom i po relativnom broju ljudi koji kupuju preko interneta.

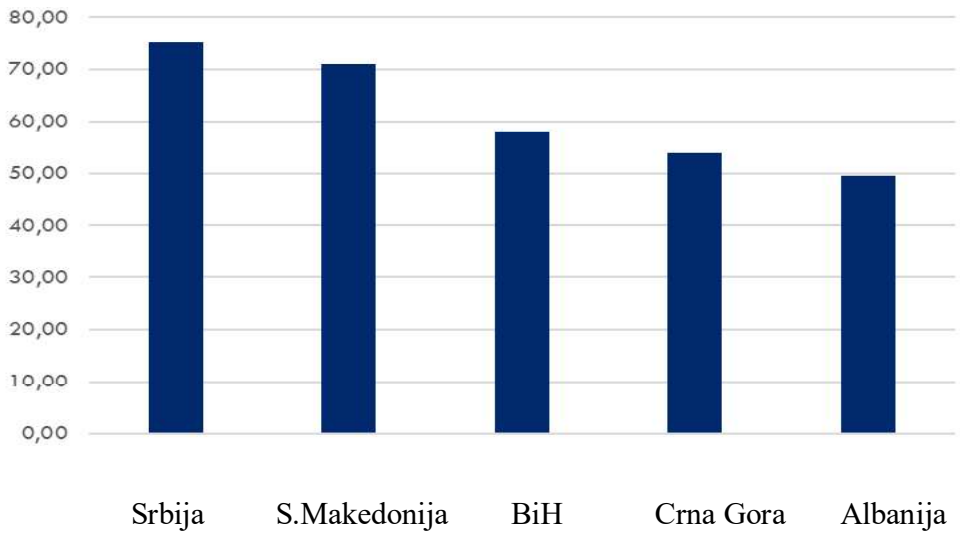
Grafik 1. Broj internet korisnika u zemljama regiona u milionima



Izvor: USAID, MASIT, STIKK, ICT NETWORK, *E-commerce ine Serbia: Increasing your sales through online and e-commerce solutions*, доступно на: https://masit.org.mk/wp-content/uploads/2021/09/digital-trasformation-serbia.pdf (05. 03. 2023.)

Prema UNCTAD B2C E-commerce Index Srbija je 2020. godine na 43. Mestu što je napredak u odnosu na prethodnu godinu kada je Srbija bila za jedno mesto lošije rangirana. Iza Srbije su sve ostale zemlje regiona a najlošije rangirana je Albanija.

Grafik 2. E-commerce Index za zemlje regiona



Izvor: USAID, MASIT, STIKK, ICT NETWORK, *E-commerce ine Serbia: Increasing your sales through online and e-commerce solutions*, доступно на: https://masit.org.mk/wp-content/uploads/2021/09/digital-trasformation-serbia.pdf (05. 03. 20223.)

Pandemija je dala podsticaj razvoju e-trgovine na Zapadnom Balkanu, kao i drugde, pošto su bile zatvorene prodavnice koje nisu neophodne.Ukupan broj online transakcija se udvostručio u jednoj godini zahvaljujući pandemiji, a očekuje se da će nivo ostati visok i u narednim godinama.

Mnoge prepreke utiču na elektronsku trgovinu u regionu. Ključno ograničenje za razvoj elektronskog tržišta je nedovoljno poverenja u online prodavnice, što je navelo tri četvrtine ispitanika na Zapadnom Balkanu. Predstavnici albanskih kompanija za e-trgovinu rekli su istraživačima Svetske banke da velika neformalna ekonomija takođe predstavlja ograničenje za razvoj formalne digitalne ekonomije. Neformalna ekonomija je problem u celom regionu, što pokazuje nedavna studija Centra za politiku i upravljanje iz Sarajeva, koja je procenila veličinu sive ekonomije na oko 30% BDP-a u Bosni, Crnoj Gori i Srbiji. U Severnoj Makedoniji, analiza koju je sprovela asocijacija za e-trgovinu pokazala je da je najveći izazov za sektor nizak nivo digitalnih veština među stanovništvom, ali je još jedan problem pronalaženje odgovarajućeg kadra. E-prodavci smatraju da su barijere za razvoj e-trgovine: nizak nivo svesti potrošača o onlajn kupovini (79%); nepoverenje u onlajn kupovinu (79%); nizak nivo digitalnih veština među kupcima (65%); i nelojalna konkurencija od strane neregistrovanih trgovaca i sive ekonomije (55%). Slede bankarski uslovi i procedure e-trgovine (39%); sistem plaćanja i nedovoljna upotreba platnih kartica (31%); mala ponuda na tržištu domaćih preduzeća (26%); i visoke naknade banaka za onlajn plaćanja (24%); sa bezbednosnim problemima na poslednjem mestu na listi (23%).

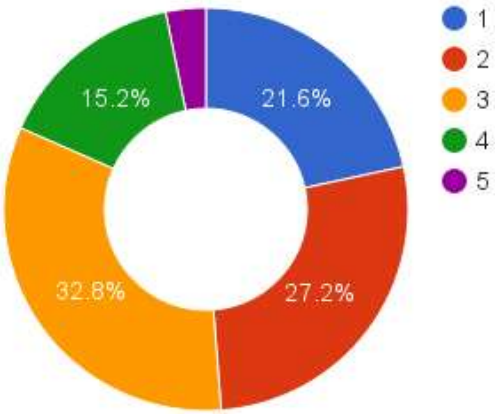
Da bi ukazali u kojoj meri su kupci u Republici Srbiji i zemljama regiona spremni da se preusmere na elektronska plaćanja, obavili smo istraživanje na uzorak od 100 ispitanika, gde smo do podataka došli elektronskim putem, metodom anketiranja. Vodilo se računa o podjednakoj zastupljenosti kupaca iz 5 zemalja, uključujući i Srbiju, različitih starosnih kategorija, nivoa obrazovanja i nivoa mesečnih primanja. U sledećoj tabeli su predstavljena pitanja na koja su pojedinci davali odgovore i prosečna ocena po pitanju.

Tabela 2. Prosečna ocena po pitanju

Pitanje	Prosečna ocena
Lakoća korišćenja	
1. Elektronska plaćanja su složena za upotrebu.	2,51
Sigurnost	
2. Ukoliko bi se povećala bezbednost sistema elektronskih plaćanja, to bi povećalo njihovu upotrebu.	3,82
Poverenje	
3. Smanjenje sigurnosti prenosa velikih količina novca elektronskim putem.	3,4
Primenjivost	
4. Spektar usluga koje nudi jedan sistem placanja utiče na njegovu primenjivost.	3,52
Pouzdanost	
5. Koristila/o bih elektronske sisteme plaćanja ako drugi korisnici pre mene nisu imali problema.	3,53
Privatnost	
6. Brine me što druge kompanije ili institucije mogu doći do podataka o istoriji mojih plaćanja.	3,14
Anonimnost	
7. Elektronski sistemi plaćanja dodatno narušavaju privatnost koja je već narušena upotrebom interneta.	3,29
Konvertibilnost	
8. Ako bi upotreba elektronskih sistema plaćanja omogućila da plaćam u različitim valutama, to bi povećalo moju želju da ih koristim.	3,22
Troškovna efikasnost	
9. Ako je neko plaćanje jeftinije uz upotrebu elektronskih sistema plaćanja, to bi povećalo moju želju da ih koristim.	4,12

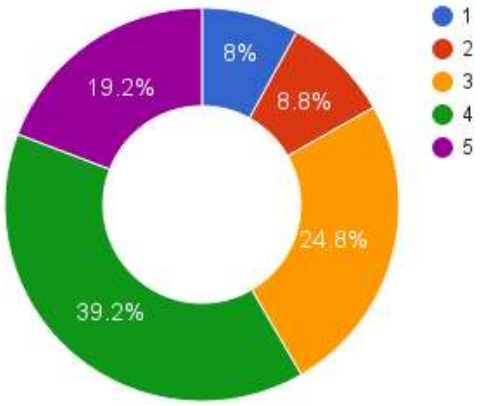
Na sledećih par grafikona su prikazane ocene ispitanika najbitnijih karakteristika elektronskih sistema plaćanja po autorima ovog rada, gde se sagledala složenost korišćenja elektronskih sistema plaćanja, iskustvo drugih prilikom korišćenja elektronskih sistema plaćanja, kao i naknada za korisnike ovih sistema plaćanja.

Grafik 3. Ocena složenosti upotrebe elektronskih sistema plaćanja



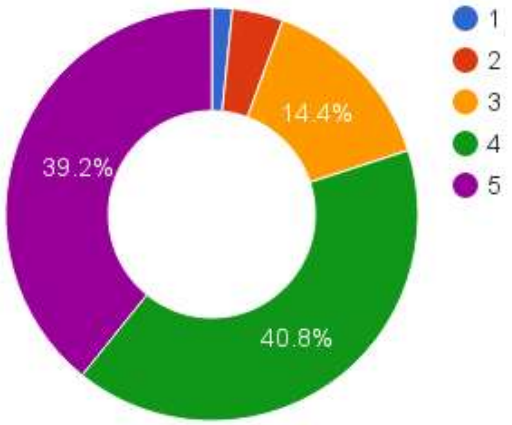
Jedna petina ispitanika smatra da elektronski sistemi plaćanja uopšte nisu komplikovani za korišćenje. Trećina ispitanika je neutralnog mišljenja, što znači da su indiferentni prema tome da li će plaćanja izvršiti nekim instrumentom elektronskog plaćanja ili gotovinom.

Grafik 4. Uticaj iskustva drugih na korišćenje elektronkih sistema plaćanja



Na osnovu prikupljenih podataka se može zaključiti da je većini ispitanika (58.4%) bitno da ljudi koji su pre njih koristili određeni sistem plaćanja imaju pozitivno iskustvo u pogledu funkcionisanja tog sistema. Poseban značaj će za njih imati preporuka koju su dobili od bliskih prijatelja ili od ljudi koje oni smatraju kompetentnim za tu oblast. Za razliku od njih za 8.8% ispitanika uopšte nije bitno mišljenje drugih, već će određeni elektronski sistem plaćanja koristiti ukoliko njima pruža uslove koje traže.

Grafik 5. Porast korišćenja elektronskih sistema plaćanja zbog manjih naknada za korisnika



Veliki broj ispitanika je spreman da koristi elektronske sisteme plaćanja ukoliko je naknada za korišćenje ovakvih sistema niža u odnosu na tradicionalne sisteme plaćanja. Jedan mali deo ispitanika je cenovno indiferentan u odnosu na naknadu za ovaj vid plaćanja i oslanja se isključivo na korišćenje gotovine.

Zaključak

Korišćenjem elektronskih sistema plaćanja ostvaruju se niži operativni troškovi, smanjenje sive ekonomije, razvoj novih platnih sistema. Korisnicima su usluge elektronskog bankarstva dostupne u svako doba i na svakom mestu, što smanjuje vreme i naknade za izvršavanje transakcija, čime se svakako povećava motivisanost za korišćenje elektronskih sistema plaćanja kako u Srbiji tako i u zemljama regiona.

S obzirom da je dan bez mobilnog telefona u modernom vremenu nezamisliv, prirodno je što je mobilni telefon zauzeo posebno mesto u oblasti elektronskih plaćanja. Generacije rođene u informatičko doba postaju platežno sposobni, pa samim tim će se upotreba elektronskih sistema plaćanja, naročito upotrebom mobilnih telefona, kretati uzlaznom putanjom.

Revoluciju u elektronskom bankarstvu predstavlja pojava elektronskog novca. Što se tiče Republike Srbije, donošenjem Zakona o platnim uslugama načinjen je korak napred u usklađivanju zakonodavstva Srbije sa evropskim pravnim odredbama, jer obezbeđuje pravni okvir za osnivanje i poslovanje platnih institucija i institucija elektronskog novca, kao i za zaštitu prava i interesa korisnika platnih usluga i imalaca elektronskog novca.

U radu je potvrđena prva hipoteza istraživanja, a to je da korisnici brže usvajaju mobilne sisteme plaćanja nego elektronske sisteme plaćanja zasnovane na računarima. Sve ovo se zasniva na odgovorima ispitanika u vezi korišćenja sistema elektronskih plaćanja. Više od polovine ispitanika više koristi plaćanja putem mobilnih telefona nego plaćanja zasnovane na računarima. Mobilni sistemi plaćanja su korisnicima postali način na koji redovno izmiruju svoja dugovanja, i koriste ih najčešće nekoliko puta mesečno. Porast informatičke pismenosti srazmerno povlači povećanje broja korisnika mobilnih sistema plaćanja, što u krajnjoj meri doprinosi povećanju upotrebe savremenih elektronskih sistema plaćanja u Srbiji i u zemljama u okruženju.

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ANALYSIS OF MODERN PAYMENT SYSTEMS IN SERBIA AND COUNTRIES IN THE REGION

Marko Savić[4], Nikola Pavlović[5], Miloš Milanović[6]

Abstract

With the development of the Internet and the increasingly rapid progress of information technologies, electronic banking becomes available to all clients, regardless of geographical location. If we analyze the market of the Republic of Serbia, we can see that electronic payments are less developed in Serbia compared to the countries of the region, and especially compared to the world. The subject of the research will be the use of electronic payment systems, mobile payments, as well as a comparative analysis of their use in the Republic of Serbia and the countries of the region with the aim of showing the advantages of this form of payment. The paper will consider the impact of electronic payment systems as well as the extent to which users are ready to accept these systems.

Keywords: *electronic payments, electronic money, mobile payments, expenses.*

Introduction

Payments are no longer made only by traditional methods, but electronic payment systems are also on offer. With the advancement of computer technology and the Internet, we have an accelerated process of data transmission and processing and an increasing use of mobile and electronic payments.

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Electronic business provides services to users using the benefits of information technology. The development of electronic business has created a new category of money - electronic money, as a substitute for cash, which is stored in electronic or magnetic form. Electronic money has become the subject of many discussions after the emergence of Bitcoin, Ethereum, Litecoin and other cryptocurrencies. The term digital wallet is relevant to most of new digital payment systems. A digital wallet is a virtual storage system that can contain money and a user's digital identity certificate.

In accordance with the defined subject and objectives of the research, as well as the set hypotheses: users adopt mobile payment systems faster than electronic payment systems based on computers, relevant scientific methods for data collection, analysis and interpretation will be used in the study.

Conceptual characteristics of electronic payment systems

In general, electronic payments are a form of financial exchange between a buyer and a seller that is facilitated by means of electronic communication. Electronic payment systems make it easier for us, after the customers' decision to buy a product or a service, to realize payments from customers to sellers in the most efficient, fastest and safest way. The role of the electronic payment system is crucial for the future of e-commerce, whose further growth depends on the timely development of EPS.

The role of the Internet in the development of electronic business

Online business, also known as e-business or electronic commerce, refers to conducting business transactions over the Internet, which includes the exchange of information of value in the form of products and services, as well as payments, using Internet technologies. The use of the Internet caused the emergence of the digital economy, which represents a modern form of economy based on digital technologies and the use of information and communication technologies and the Internet in all areas of the economy.

Information that can be found via the Internet plays an important role in decision-making by both producers and consumers. Consumer behavior has always been influenced by advances in information and communication technologies. The Internet and social networks have significantly changed the

way individuals plan to produce or purchase certain products or services. The use of the Internet and social media is fundamentally changing the way business is conducted. All participants in business are more informed, mutual cooperation increases and new opportunities for business improvement are opened. Internet users can search the offer, get information about the quality of the product or service using the presented information, they can get information about the way how to buy and use the product, as well as contract and pay for the purchase.

By providing information about the organization's product or service on the Internet and the possibility of booking and contracting sales, organizations adjust their business model in accordance with the needs and expectations of a new generation of consumers. Reasons why organizations use the Internet and social media in their business are: the possibility of targeting, measurability, accessibility and low cost.

Characteristics and trends of online business development

Online business demonstrates certain characteristics when compared to traditional business. The following can be mentioned: changes in the seller-buyer relationship, increased speed, distance is no longer an important parameter, global market, reduction of time disproportions, management skill is the key to success, openness, interdisciplinarity and protection of intellectual property.

One of the segments of the development of online business is the development of electronic commerce. It is a revolutionary and modern way of performing trade activities, which is based on the use of information and communication technologies. Accordingly, it can be simply explained as the purchase and sale of goods and services that takes place with the significant application of modern information and communication technologies. The dynamic development of electronic commerce began in the early nineties of the 20th century, under the great influence of the opening of the Internet. Amazon.com was one of the first e-commerce sites in the US to start selling products online. After that, companies started doing business in this way to a large extent. The

more serious beginnings of electronic commerce were registered after 1997, when many organizations put the sale of products, not just promotion, in the focus of their business application of the Internet. Since 2000, when the Internet became the dominant business channel for electronic commerce, organizations have been focusing on reducing the costs of doing business on the Internet and observing how the Internet affects their profitability.

The dynamic growth of global e-commerce is evidenced by the fact that the average annual growth rate of e-commerce in the world is 24.8%. The potential of electronic commerce for further dynamic development is found in the benefits that come from the application of this business concept, primarily cost reduction, in various business segments, from procurement and storage to business communication costs. Online shopping is one of the most popular online activities around the world, and the volume of e-commerce varies from country to country. Today's business and payment processing relies heavily on technology to facilitate the communication process. As the matter of fact, many technologies used in personal life are also used in business. It is almost certain that some aspects of today's globalization are unstoppable, such as the development of the Internet and the general application of information technologies in all aspects of social and business life, including online business and electronic commerce.

Mobile payments and electronic money

Thanks to the increasing use of online shopping, online payment systems are becoming the dominant form of payment. A growing trend of payments via mobile phones can be observed, whereby smartphones completely take over the function of a traditional wallet: card data, personal documents, electronic money, etc. can be stored in the phones. Certain electronic payment systems are designed as electronic versions of traditional payment systems, while more advanced systems are based on the exchange of digital information and have a strong influence on further development of financial and monetary systems.

Electronic money

Electronic money is increasingly used in electronic payment systems, which can be found in the literature under different names: digital money, e-money,

cyber money, and etc. Electronic money is a substitute for cash, with the difference that it is stored in electronic or magnetic form - on a chip, server or payment card. The key elements of electronic money are related to the multi-purpose character of use (electronic wallet) and prepayment of a certain purchasing power (pre-paid cards).

French author Robert Guttmann separates the categories of electronic and so-called cyber money. Electronic money means all categories of payments in which channels based on Internet technologies (internet, POS terminals) are used in combination with payment cards, while cyber money means "electronic wallets" (cards with pre-paid monetary value) and software money which is available exclusively through the software installed on the computer. Certain authors highlight a special category of virtual money, which refers to currency that is available only to members of a certain closed system. Virtual money is not intended for use in the real world, i.e. it is not used to buy real goods or services, but the object of trade has a virtual character as money itself (eg. video games). All virtual currencies are centralized, and control over the money supply is in the hands of the developers of the virtual world.

Mobile payments

Mobile phones are in use all over the world, with the largest number being the so-called smart phones. They have adopted certain functions of computers, offer the possibility of their daily use, including fast access to the Internet, use of Wi-Fi and mobile networks.

Despite many advantages, there are also risks that mobile devices face. These risks include limitations related to range issues, security issues, transmission interference, ability assumptions, and a variety of other similar issues. The primary limitations associated with range and bandwidth can be attributed to the fact that the networks accessible by mobile devices are generally limited to a range of commercial networks. The main threat associated with mobile devices is related to security issues.

The most important technology in mobile phones is the so-called intelligent card (eng. smart card) which represents the basis for all basic services and protocols provided by the mobile network operator, as well as additional

services provided by the third parties. The intelligent card enables the use of multiple systems dealing with the organization of mobile payments, as well as the integrated use of various electronic technologies.

Mobile payments research has attracted considerable attention among experts in their efforts to explain the rationale behind how mobile payment providers innovate and compete in the marketplace. Mobile operators play a key role in the mobile payment process. However, the actions of other market actors (regulators, financial institutions, device manufacturers, merchants), as well as market factors (available network, banking, merchant and consumer technology, legislation, habits of using payment instruments) can affect service providers and other market actors. Thus, this framework allows for the study of how different strategic options can affect the competitive position of actors or the performance of the entire market. Contingent factors affect actors and the market in a systematic way, but are beyond the direct influence and control of any market actor. Contingency theory is essential to explore the differences between mobile payment markets (especially different countries). In recent studies, these questions have been mainly embedded in ecosystem strategy and studies, which is used as a synonym for "m-payment market and providers".

Mobile network operators have invested significantly in improving communication and developing new technologies and services, as a result of which there has been an increase in the number of mobile phone users and their use for payment transactions. In addition, there was an increase in the number and quality of banking services provided via the Internet, which additionally influenced the strong growth of mobile banking. Mobile banking is seen as an e-business model of banks and operators that use mobile telecommunication networks to provide banking services to clients and through their mobile devices. This model enables payment via mobile banking, checking account balances, taking loans and a number of other financial services and transactions.

Mobile banking has great application potential. The modern lifestyle is unthinkable without a mobile phone, and the changes introduced by e-business banking systems encourage the development of mobile applications for using

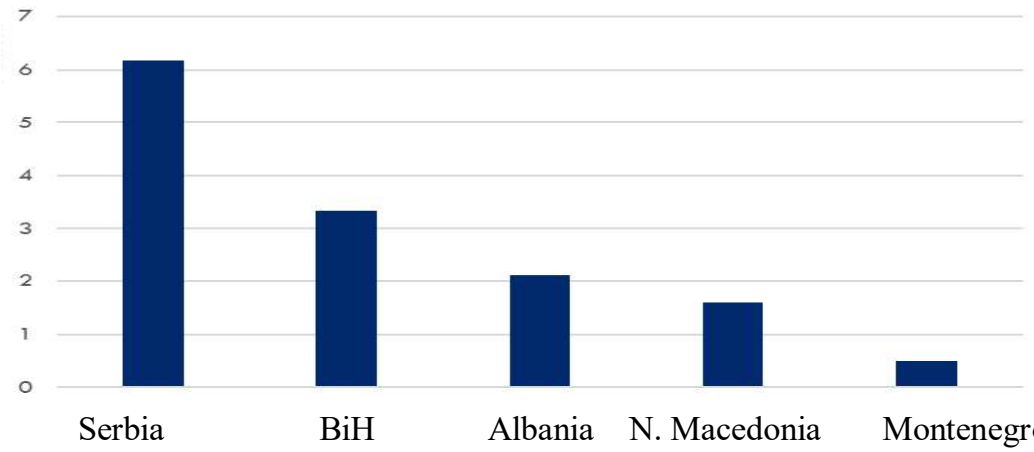
mobile banking services. Bearing in mind the number of mobile phone users, as well as the possibilities they provide, it is not surprising that the mobile platform is widely used for electronic payments.

Use and analysis of modern payment systems in Serbia and the countries of the region

With their small populations, relatively low incomes and large informal economies, the countries of the region are not the best environment for nurturing e-commerce. Cash is still king in this space. However, the number of cashless transactions is slowly increasing. A major challenge for online payments in the Western Balkans is the high cost of processing transactions — card evaluation fees are up to four times higher than in the EU. Central banks have announced plans to harmonize domestic policies with EU regulations, which could lead to market liberalization and lower transaction costs.

The Internet is widely used in Serbia, although the country lags behind developed Western European nations. According to Statista, the expected number of Internet users by next year will reach 86.21%. When it comes to the absolute number, Serbia is leading in the region. In a relative sense, Bosnia and Herzegovina and Montenegro are still the leaders. Serbia is leading in the Western Balkans region both in terms of absolute and relative number of people who shop online.

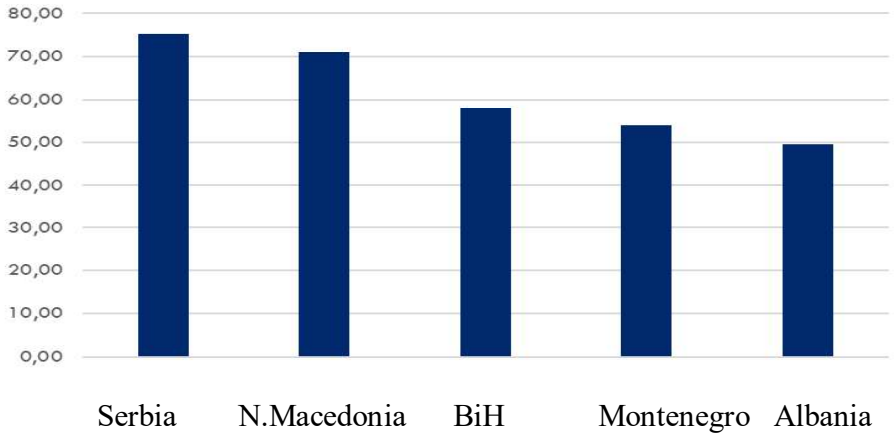
Graph 1. Number of Internet users in the countries of the region in millions



Source: USAID, MASIT, STIKK, ICT NETWORK, *E-commerce in Serbia: Increasing your sales through online and e-commerce solutions*, available on: https://masit.org.mk/wp-content/uploads/2021/09/digital-trasformation-serbia.pdf (05. 03. 2023.)

According to the UNCTAD B2C E-commerce Index, Serbia was in 43rd place in 2020, which is an improvement compared to the previous year, when Serbia was ranked one place lower. All the other countries of the region are behind Serbia, and Albania is ranked the worst.

Graph 2. E-commerce Index for the countries of the region



Source: USAID, MASIT, STIKK, ICT NETWORK, *E-commerce in Serbia: Increasing your sales through online and e-commerce solutions*, available on: https://masit.org.mk/wp-content/uploads/2021/09/digital-trasformation-serbia.pdf (05. 03. 20223.)

The pandemic gave a stimulus to the development of e-commerce in the Western Balkans, as well as elsewhere, as non-essential shops were closed. The total number of online transactions doubled in one year thanks to the pandemic, and the level is expected to remain high in the coming years.

Many obstacles affect e-commerce in the region. A key limitation for the development of the electronic market is insufficient trust in online stores, as stated by three quarters of respondents in the Western Balkans. Representatives of Albanian e-commerce companies told the World Bank researchers that the large informal economy is also a constraint to the development of the formal digital economy. The informal economy is a problem throughout the region, as shown by a recent study by the Center for Policy and Management from Sarajevo, which estimated the size of the grey economy at around 30% of GDP in Bosnia, Montenegro and Serbia. In North Macedonia, an analysis conducted by the e-commerce association showed that the greatest challenge for the sector is the low level of digital skills among the population, but another problem is finding the right staff. E-sellers believe that the barriers to the development of e-commerce are: low level of consumer awareness of online shopping (79%); mistrust in online shopping (79%); low level of digital skills among customers (65%); and unfair competition from unregistered traders and the shadow economy (55%). This is followed by banking conditions and e-commerce procedures (39%); payment system and insufficient use of payment cards (31%); small offer on the market of domestic companies (26%); and high bank fees for online payments (24%); with security issues last on the list (23%).

In order to indicate the extent to which customers in the Republic of Serbia and the countries of the region are ready to switch to electronic payments, we conducted research on a sample of 100 respondents, where we obtained the data electronically, using the survey method. It was taken care to ensure equal representation of customers from 5 countries, including Serbia, of different age categories, education levels and monthly income levels. The following table presents the questions to which individuals gave answers and the average score per question.

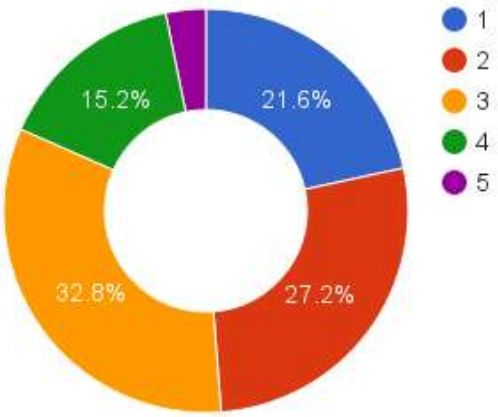
Table 2. Average grade per question

Question	Average grade
Ease of use	
1. Electronic payments are complex to use.	2,51
Security	
2. If the security of electronic payment systems were increased, it would increase their use.	3,82
Confidence	
3. Decreasing the security of transferring large amounts of money electronically.	3,4
Applicability	
4. The spectrum of services offered by a payment system affects its applicability.	3,52
Reliability	
5. I would use electronic payment systems if other users before me had no problems	3,53
Privacy	
6. I am concerned that other companies or institutions may obtain information about my payment history	3,14
Anonymity	
7. Electronic payment systems further violate the privacy that is already violated by the use of the Internet.	3,29
Convertibility	
8. If the use of electronic payment systems allowed me to pay in different currencies, this would increase my desire to use them	3,22
Cost efficiency	

9. If a payment is cheaper using electronic payment systems, this would increase my desire to use them.	4,12

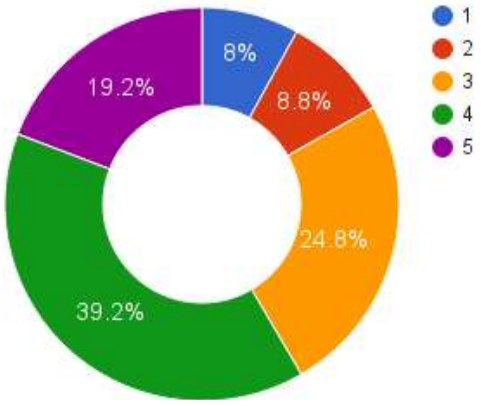
The following graphs show the respondents' evaluations of the most important features of electronic payment systems according to the authors of this study, where the complexity of using electronic payment systems, the experience of others when using electronic payment systems, and the fees for users of these payment systems were reviewed.

Graph 3. Assessment of the complexity of using electronic payment systems



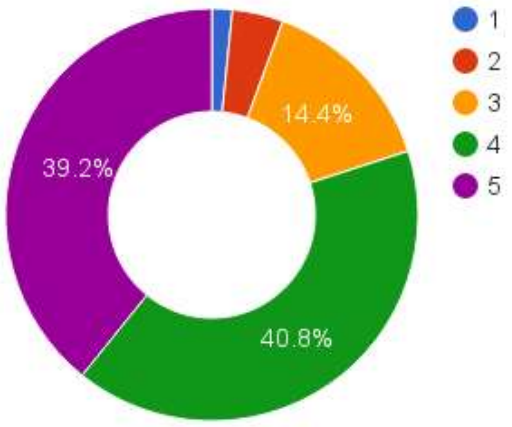
One fifth of the respondents believe that electronic payment systems are not at all complicated to use. A third of respondents have a neutral opinion, which means that they are indifferent to whether they will make payments with an electronic payment instrument or cash.

Graph 4. The influence of the experience of others on the use of electronic payment systems



Based on the collected data, it can be concluded that for the majority of respondents (58.4%) it is important that people who used a certain payment system before them have a positive experience regarding the functioning of that system. Recommendations received from close friends or from people they consider competent in that field will be of particular importance to them. Unlike them, for 8.8% of respondents, the opinion of others is not important at all, but they will use a certain electronic payment system if it provides them with the conditions they are looking for.

Graph 5. Increase in the use of electronic payment systems due to lower fees for the user



A large number of respondents are ready to use electronic payment systems if the fee for using such systems is lower compared to traditional payment

systems. A small part of respondents is price indifferent in relation to the fee for this type of payment and relies exclusively on the use of cash.

Conclusion

The use of electronic payment systems results in lower operating costs, reduction of the grey economy, and the development of new payment systems. Electronic banking services are available to users at any time and in any place, which reduces the time and fees of executing transactions, which certainly increases the motivation to use electronic payment systems both in Serbia and in the countries of the region.

Considering that a day without a mobile phone is unthinkable in modern times, it is natural that the mobile phone has taken a special place in the field of electronic payments. Generations born in the information age are becoming able to pay, so the use of electronic payment systems, especially the use of mobile phones, will move upward.

The revolution in electronic banking is represented by the appearance of electronic money. As far as the Republic of Serbia is concerned, the adoption of the Law on Payment Services has taken a step forward in harmonizing the Serbian legislation with the European legal provisions, as it provides a legal framework for the establishment and operation of payment institutions and electronic money institutions, as well as for the protection of the rights and interests of users of payment services and holders of electronic money.

The study confirmed the first hypothesis of the research, namely that users adopt mobile payment systems faster than electronic payment systems based on computers. All this is based on respondents' answers regarding the use of electronic payment systems. More than half of respondents use mobile payments more than computer-based payments. Mobile payment systems have become a way for users to regularly settle their debts, and they use them usually several times a month. The increase in information literacy proportionally leads to an increase in the number of users of mobile payment systems, which ultimately contributes to the increase in the use of modern electronic payment systems in Serbia and in neighboring countries.

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