



**39. Međunarodni kongres
o procesnoj industriji**
Negotin, 3. i 4. jun 2026.

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PROCESING '26**



ZBORNİK RADOVA
39. Međunarodnog kongresa o procesnoj industriji
(Negotin, 3. i 4. jun 2026)

IZDAVAČ

*Savez mašinskih i elektrotehničkih
inženjera i tehničara Srbije (SMEITS)
– Društvo za procesnu tehniku –
Kneza Miloša 7a/II, 11000 Beograd
2026. god.*

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PREDGOVOR

Procesna industrija ulazi u period velikih promena, u kome se od kompanija očekuje da proizvode efikasnije, smanje emisije, uvode obnovljive izvore energije i koriste digitalne alate.

Pred Vama je zbornik radova 39. Međunarodnog kongresa o procesnoj industriji - Procesing '26, kongresa koji već tradicionalno predstavlja ključnu tačku preseka naučne misli, tehnološkog razvoja i inženjerske prakse u procesnoj industriji.

39. Međunarodni kongres o procesnoj industriji Procesing '26, u organizaciji Društva za procesnu tehniku, pri Savezu mašinskih i elektrotehničkih inženjera i tehničara Srbije (SMEITS), u saradnji sa Katedrom za procesnu tehniku Mašinskog fakulteta u Beogradu i pod generalnim pokroviteljstvom kompanije Elixir Prahovo - Elixir Group, održan je 3. i 4. juna 2026. u svečanoj sali La Moara u Negotinu, gde se uspešno organizuje drugu godinu zaredom. Kompanija Elixir Group je po treći put pokazala da je pouzdan partner u organizaciji Procesinga, ove i prethodne godine u Negotinu, a prvi put u Šapcu 2023. godine. Kompanija Elixir Group nije samo formalno bila pokrovitelj već je uzela učešće u kreiranju programa Procesinga i predložila teme, moderatore i učesnike panela. Pomoć u organizaciji Procesinga '26 dali su predstavnici drugih fakulteta i instituta iz Srbije, među kojima su predstavnici Tehnološko-metalurškog fakulteta Univerziteta u Beogradu, Fakulteta organizacionih nauka i predstavnici Institut za nuklearne nauke "Vinča".

Pored generalnog pokroviteljstva od strane Elixir Prahovo – Elixir Group, finansijsku podršku skupu obezbedile su sledeće institucije i kompanije:

- Ministarstvo nauke, tehnološkog razvoja i inovacija, Republika Srbija*
- Inženjerska komora Srbije,*
- Institut za nuklearne nauke „Vinča“,*
- Beo čista energija, Beograd,*
- Numikon, Zagreb,*
- Geotaur, Beograd,*
- Grundfos Srbija, Beograd,*
- Kazantrade Srbija, Beograd i*
- Wilo Beograd.*

Osnovni ciljevi Procesinga '26 su uspešno realizovani spajanjem nauke i industrije, kroz umrežavanje i stručno usavršavanje inženjera i istraživača u oblastima procesne tehnike, energetike, inženjerstva zaštite životne sredine i menadžmenta kvaliteta i standardizacije. Pored tradicionalne podrške razvoju novih inženjerskih rešenja, težište ovogodišnjeg skupa usmereno je ka održivosti, primeni obnovljivih izvora energije, smanjenju štetnih emisija i implementaciji principa cirkularne ekonomije. Uz jasnu viziju potpunog zatvaranja ciklusa od otpada do novog proizvoda, kongres trasira put ka ostvarivanju ciljeva održivog razvoja u procesnoj industriji. Ovakva razmena iskustava i definisanje pravaca daljih istraživanja predstavljaju direktan doprinos modernizaciji postojećih kapaciteta i zelenoj tranziciji domaće privrede.

Ovakav sveobuhvatan pristup stvara ključne preduslove za podizanje tehnološkog razvoja naše zemlje i uvođenje naprednih, ekološki odgovornih tehnologija. Da su ovi preduslovi već uveliko u fazi realizacije, svedoče upravo radovi sabrani u ovom Zborniku. Publikovana istraživanja jasno pokazuju da domaća naučna zajednica uspešno ide u korak sa globalnim trendovima, nudeći konkretna rešenja za transformaciju

tradicionalnih procesa i optimizaciju raspoloživih resursa. Ujedno, ovi tekstovi donose jasnu viziju o tome kako oblikovati novi inženjerski kadar, sposoban da iznese teret ove kompleksne zelene i tehnološke tranzicije.

Kongres Procesing '26 je organizovan prema pravilima definisanim za međunarodne skupove što određuje svrstavanje i kvantifikaciju radova autora. U Naučnom i Organizacionom odboru Procesinga '26 bili su uključeni predstavnici mašinskih, tehnoloških i drugih fakulteta iz Srbije (Beograda, Novog Sada, Niša, Leskovca, Kragujevca, Kraljeva i Zrenjanina), kao i iz zemalja regiona i sveta, u okviru kojih je oblast procesne tehnike zastupljena u nastavi i istraživanjima (Podgorica, Sarajevo, Tuzla, Skoplje, Zagreb, Temišvar, Maribor, Trondhajm, Madrid, Vankuver).

Pored naučnih i stručnih radova, program skupa su obogatili i paneli posvećena najaktuelnijim pitanjima procesne industrije, Industrija i veštačka inteligencija: od digitalne spremnosti do Industrije 5.0, zatim Industrija i klimatski zahtevi: smanjenje emisija gasova sa efektom staklene bašte, monitoring i regulatorni okvir, kao i tradicionalni panel posvećen opremi pod pritiskom, kao jednoj od najvažnijih i najzahtevnijih oblasti procesne industrije. Učesnici su kroz pažljivo odabrane teme dobili konkretna znanja i jasne preporuke za unapređenje rada. Na ovim dinamičnim platformama za otvoreni dijalog, razmenu iskustava i kreiranje smernica za dalji razvoj sektora, učestvovali su vodeći stručnjaci iz industrije, predstavnici akademske zajednice, nadležnih ministarstava i vodećih domaćih i međunarodnih kompanija.

Kao i na prethodnom Procesingu, ovogodišnji skup je obogatio i sajamski prostor, gde je u izložbenom delu bio organizovan sajam opreme koja se koristi u procesnoj industriji, i koji je okupio brojne izlagače i učesnike.

Kongres je završen stručnom posetom učesnika skupa Industrijskom kompleksu Eliksira u Prahovu, odnosno Ogranku Eco Energy - Postrojenju za energetske iskorišćenje otpada u Prahovu, gde su imali priliku da se upoznaju sa skorim početkom rada postrojenja, savremenim procesima upravljanja i energetskog iskorišćenja otpada, kao i o standardima zaštite životne sredine koji se u njemu primenjuju. Takođe, učesnici skupa su imali priliku da obiđu i muzej, jedinstven u Srbiji, jer predstavlja svedočanstvo o izgradnji i razvoju jedne hemijske industrije od 1960. do danas.

*U Beogradu,
jula 2026.*

Predgovor

Energija u procesnoj industriji

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FAKTORI KOJI UTIČU NA KVALITET USLUGE U MOBILNOM UČENJU: PLS-SEM PRISTUP

Key words:

*mobile learning; service quality; quality
management; PLS-SEM*

FACTORS INFLUENCING SERVICE QUALITY IN MOBILE LEARNING: A PLS-SEM APPROACH

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Razvoj mobilnih tehnologija značajno je uticao na obrazovno okruženje, ističući značaj upravljanja kvalitetom i standardizacije u pružanju obrazovnih usluga. Mobilno učenje (m-učenje), kao nastavak e-učenja, omogućava studentima fleksibilan i interaktivan pristup obrazovnom sadržaju putem mobilnih uređaja, što doprinosi standardizaciji i poboljšanju kvaliteta obrazovnog procesa u visokom obrazovanju. Cilj ovog istraživanja je ispitivanje faktora koji oblikuju percepciju kvaliteta usluga mobilnog učenja, sa fokusom na očekivani napor, uticaj predavača, i ličnu inovativnost studenata. Predloženi model istraživanja testiran je korišćenjem modeliranja strukturnih jednačina parcijalnih najmanjih kvadrata (PLS-SEM), na osnovu podataka ankete prikupljenih od studenata Univerziteta u Beogradu, pružajući uvid u ključne determinante koje doprinose kvalitetu usluga mobilnom učenju. Rezultati istraživanja potvrđuju sve postavljene hipoteze, ukazujući da očekivani napor, uticaj predavača i lična inovativnost studenata imaju statistički značajan i pozitivan efekat na percepciju kvaliteta usluga mobilnog učenja. Dobijeni rezultati pružaju smernice donosiocima odluka i visokoškolskim institucijama za unapređenje dizajna i implementacije mobilnih obrazovnih platformi u cilju postizanja višeg nivoa kvaliteta i standardizacije obrazovnih usluga.

The development of mobile technologies has significantly affected the educational environment, emphasizing the importance of quality management and standardization in the provision of educational services. Mobile learning (m-learning), as a continuation of e-learning, allows students flexible and interactive access to educational content via mobile devices, which contributes to the standardization and improvement of the quality of the educational process in higher education. The aim of this research is to examine the factors that shape the perception of the quality of mobile learning services, with a focus on the expected effort, the influence of the lecturer and the personal innovativeness of the students. The proposed research model was tested using partial least squares structural equation modeling (PLS-SEM), based on survey data collected from students at the University of Belgrade, providing insight into the key determinants that contribute to the quality of services in mobile learning. The research results confirm all proposed hypotheses, indicating that effort expectancy, instructor influence, and students' personal innovativeness have a statistically significant and positive effect on the perceived quality of mobile learning services. The obtained findings provide valuable guidance for decision-makers and higher education institutions in improving the design and

implementation of mobile learning platforms, with the aim of achieving higher levels of service quality and standardization in education.

1. Introduction

The rapid development of digital technologies has significantly transformed educational systems, with mobile learning (m-learning) playing an increasingly important role in higher education. Mobile learning enables students to access course content and participate in educational activities via mobile devices, providing flexibility, accessibility, and continuous learning regardless of time or location [1, 2]. In the current context of digitalization, m-learning is increasingly regarded as a key element of modern, student-centred educational approaches [3].

The effectiveness of mobile learning systems largely depends on users' perceptions of the quality of services these systems offer. Service quality in digital educational environments includes aspects such as system reliability, ease of use, speed of access to information, and ease of navigation [4]. Previous research indicates that higher perceived service quality positively affects user satisfaction, engagement, and the intention to continue using m-learning platforms [5].

Although mobile learning has been widely accepted, the factors influencing perceptions of service quality have not yet been thoroughly explored. Previous research mainly focuses on technology acceptance, while recent literature stresses the importance of examining user perceptions and individual characteristics [6]. Expected effort is a key factor, referring to how easy users perceive a system to be. Systems that are intuitive and demand little effort are more likely to be rated positively [7]. Furthermore, the influence of lecturers as a form of social influence plays a significant role in shaping students' attitudes. Support and recommendations from teachers can boost students' confidence and encourage the use of m-learning systems [8]. Personal innovativeness is also a key individual trait, as users who are open to new technologies are more likely to accept and evaluate them positively [9].

Based on the above, this paper aims to examine the influence of expected effort, instructor influence, and personal innovativeness on the quality of mobile learning services. To test the proposed model, the partial least squares structural equation modelling method was utilized. This approach enables the simultaneous examination of multiple relationships among constructs and provides reliable insights into the factors affecting service quality in the m-learning environment.

2. Literature review

In recent years, substantial research has explored the factors influencing the acceptance and use of mobile learning (m-learning), with increasing focus on service quality as a key outcome of digital education systems. Previous studies reveal that expected effort, lecturer influence, and personal innovativeness have a statistically significant impact on user behavior and their assessment of the m-learning system [10]. Similar findings are reported in other studies, where all key constructs were found to have a notable effect, with personal innovativeness often emerging as one of the strongest predictors of technology acceptance [11]. Regarding expected effort, research suggests that systems which are simple to use and intuitive are more likely to be positively evaluated by users, although its impact is sometimes less prominent compared to other factors [7].

The influence of lecturers, as a form of social influence, has been confirmed as a significant factor in educational contexts, where teacher support and recommendations foster greater confidence and willingness among students to engage with m-learning systems [8].

Personal innovativeness is consistently recognized in the literature as an important individual factor, with more innovative users demonstrating a greater propensity to accept new technologies and

a more favorable assessment of their quality [9]. In addition, contemporary research highlights that system quality, user experience, and platform design play vital roles in shaping perceptions of service quality in mobile learning [3, 5]. Recent studies also reaffirm that the combination of technological, social, and individual factors underpins the successful implementation of m-learning systems, with integrated models providing a reliable framework for analyzing these relationships [8, 12]. Based on a review of relevant literature, it can be concluded that expected effort, lecturer influence, and personal innovativeness are key determinants of perceived service quality. However, there remains a lack of research directly examining their impact on the quality of mobile learning services, representing a research gap this paper aims to address.

2.1. Research dimensions and hypothesis

Understanding the factors that influence the perception of service quality in mobile learning requires integrating technological, social, and individual determinants. Contemporary research indicates that the success of digital educational systems depends not only on technical characteristics but also on how users perceive ease of use, environmental support, and their own readiness to adopt new technologies [12, 13]. In this context, models such as UTAUT are often used to explain user behavior in digital environments, while recent research emphasizes the need to expand them by including service quality as a key outcome [5, 14]. Based on the literature review, this paper analyses expected effort, lecturer influence, and personal innovativeness as determinants of service quality in mobile learning.

Expected effort refers to the extent to which users perceive a system as simple to use and not requiring significant effort. In the context of mobile learning, this construct encompasses perceptions of ease of use, interface clarity, and speed of system adoption. Research indicates that simple and intuitive systems significantly influence perceptions of service quality, as they allow users to operate them more efficiently without additional difficulties [7]. Recent studies confirm that ease of use remains a key factor in evaluating digital educational platforms, particularly in mobile environments where quick access to information is crucial [13]. Based on this, the following hypothesis is proposed:

H1: Expected effort has a positive effect on the service quality of m-learning.

The influence of lecturers is a key form of social influence and refers to students' perception that they should use m-learning systems based on teachers' recommendations and support. In an academic environment, lecturers play an important role in shaping students' attitudes and behavior. Empirical findings indicate that teacher support positively impacts the acceptance and evaluation of digital educational systems [8]. Recent research further confirms that interaction with teachers and their involvement in technology use increase students' confidence and positively influences the perception of service quality [14]. Accordingly, the following hypothesis is proposed:

H2: Lecturer influence has a positive effect on the service quality of m-learning.

Personal innovativeness is an individual characteristic that reflects users' willingness to accept and experiment with new technologies. This construct is particularly important in the context of digital innovation and mobile learning. Previous research shows that innovative individuals are more likely to accept new technologies and develop positive attitudes towards their use [9]. Recent studies confirm that personal innovativeness significantly influences the perception of quality and the successful use of m-learning systems [12]. Such users are more open to new functionalities and more

readily recognize the advantages of digital platforms. Based on this, the following hypothesis is defined:

H3: Personal innovativeness has a positive effect on the service quality of m-learning.

The conceptual framework of this study, derived from the literature review and formulated hypotheses, is illustrated in Figure 1.

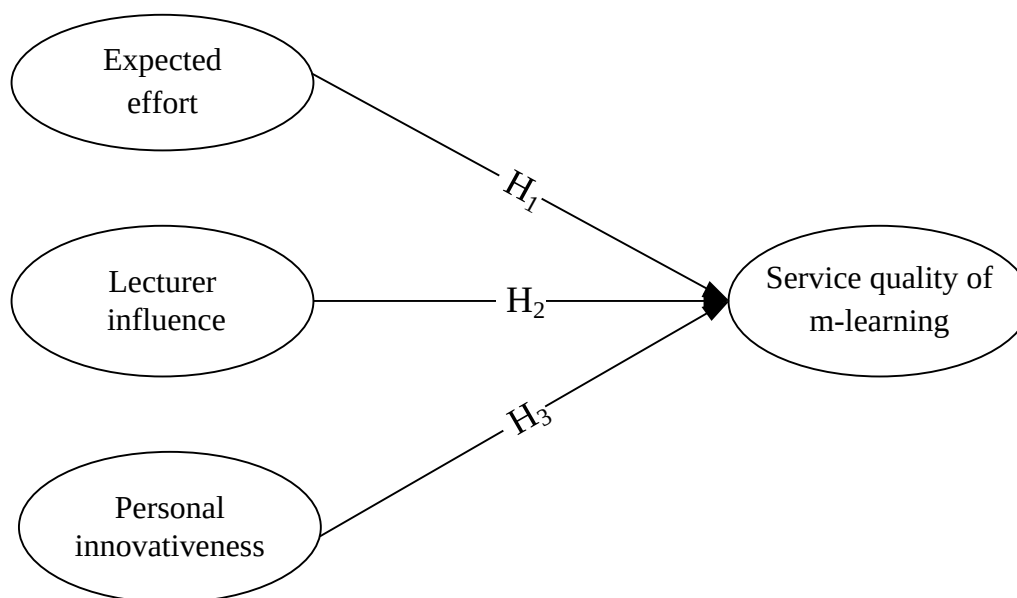


Figure 1. Conceptual model of research

3. Research methodology

For this research, empirical data were collected to examine the influence of expected effort, lecturers, and personal innovativeness on students' perceptions of the quality of mobile learning services at the University of Belgrade. A total of 247 valid responses were obtained. A five-point Likert scale was used to measure respondents' attitudes, ranging from 1 (completely disagree) to 5 (completely agree). The questionnaire used in this research was adapted from previously validated measurement scales in the relevant literature, ensuring the reliability and validity of the observed constructs [10]. The instrument is based on research into factors influencing the acceptance of mobile learning, with certain adaptations to align with the objectives of this paper. The questionnaire was divided into two parts. The first part contained questions about respondents' demographic details. The second part included statements aimed at assessing the following constructs: expected effort (EE; 3 items), lecturer influence (LI; 2 items), personal innovativeness (PI; 2 items), and service quality (SQ; 4 items). These items were developed to evaluate respondents' perceptions of how easy it is to use the m-learning system, the influence of lecturers, their willingness to adopt new technologies, and the quality of mobile learning services.

Of the 247 respondents included in the research, 99 are male and 148 are female, representing 40.1% male and 59.9% female. The results indicate that the female population is significantly more represented than the male population among respondents, and that women showed greater interest in enrolling in this faculty. The research results show the following distribution: the smallest group comprises 11 students of metallurgical engineering (4.5%), followed by 42 students of mining engineering (17.0%). In third place are 47 students of technological engineering (19.0%), while the largest

group consists of 147 students of engineering management (59.5%). The research also shows that the largest number of respondents are aged 22 to 25, with 143 students (57.9%), followed by 83 respondents aged 18 to 21 (33.6%), 19 respondents aged 26 to 30 (7.7%), and only 2 respondents over 31 years old (0.8%).

Of the total respondents, 57 (23.1%) are poorly familiar with the term e-learning, 140 (56.7%) are well aware of it, and 50 (20.2%) are very familiar with it. Most respondents are partly or well acquainted with the concept of e-learning, indicating that they do not fully understand it. Therefore, it can be concluded that e-learning is familiar to most students.

The results also show that 1 respondent (0.4%) has used a mobile phone for less than a year, while 6 students (2.4%) have reported 2 to 4 years of experience with mobile phones. The majority, 240 respondents (97.2%), have used a mobile phone for more than 5 years. This is expected, as young people today generally cannot live without mobile phones; all respondents own mobile phones and have considerable experience using them. The first mobile phone in Serbia appeared at the end of December 1995, and the year 2000 was significant for mobile phones, as it brought changes in design, screen appearance, and device features.

Based on the data obtained, 192 respondents (77.7%) have been using a smartphone for more than four years, 48 respondents (19.4%) have been using smart devices for two to four years, and only seven respondents (2.8%) have been using a smartphone for at least two years. The first phone described as a smartphone was released in 1999 and featured a touchscreen similar to those found on today's smartphones. M-learning in education is utilized by 150 respondents (60.7%), while 97 respondents (39.3%) do not use it. Based on these results, it can be concluded that more respondents use m-learning, as most recognize the importance of knowledge and education. Data analysis shows that 96 respondents (38.9%) do not use m-learning services at all. The largest group of respondents who use m-services for learning do so once to five times a day (53.4%), while 17 respondents (6.9%) use them six to ten times daily, and only two respondents reported using m-services for learning more than ten times a day. The number of respondents who stated they know nothing about m-learning is 38 (15.4%), while 70 respondents (28.3%) have some knowledge of the concept, 110 respondents (44.5%) understands the process well, and 29 respondents (11.7%) are very familiar with the concept and significance of m-learning.

4. Data analysis and results

The data analysis was carried out in two main phases. First, the measurement model was assessed to verify whether all constructs satisfied the necessary standards of reliability and validity. After confirming the measurement model as suitable, the second phase involved analysing the structural model to examine the hypotheses regarding the impact of expected effort, lecturers, and personal innovativeness on the quality of mobile learning services.

4.1. Measurement model

The measurement model was evaluated by analyzing factor loadings, internal consistency, and convergent and discriminant validity. As shown in Table 1, all loading values exceed the recommended threshold of 0.70, indicating that the indicators adequately represent their latent constructs. Cronbach's Alpha and composite reliability values for all constructs are above the recommended minimum of 0.70, confirming the internal consistency of the measurement model. Additionally, the average variance extracted (AVE) values for all constructs are greater than 0.50, confirming satisfactory convergent validity.

Table 1. Construct reliability and validity (Authors)

Construct	Items	Loadings	Cronbach's Alpha (C α) *	Composite Reliability (rho ^a) **	Composite Reliability (rho ^c) **	Average Variance Extracted (AVE) ****
Expected Effort (EE)	EE_1 EE_2 EE_3	0.812 0.847 0.852	0.787	0.792	0.875	0.701
Lecturer Influence (LI)	LI_1 LI_2	0.926 0.896	0.797	0.811	0.907	0.830
Personal Innovativeness (PI)	PI_1 PI_2	0.960 0.936	0.980	0.924	0.947	0.899
Service Quality (SQ)	SQ_1 SQ_2 SQ_3 SQ_4	0.780 0.870 0.717 0.785	0.798	0.890	0.868	0.623

Notes: * $C\alpha \geq 0.70$; ** $\rho^a \geq 0.70$; *** $\rho^c \geq 0.70$; **** $AVE \geq 0.50$.

Discriminant validity was assessed using the HTMT criterion, as shown in Table 2. All HTMT values are below the recommended threshold of 0.90, indicating that the constructs are clearly differentiated from each other. Based on these results, it can be concluded that the measurement model demonstrates a satisfactory level of reliability and validity, and is suitable for further analysis of the structural model.

Table 2. HTMT matrix (Authors)

	1	2	3	4
Service Quality (1)	-			
Personal Innovativeness (2)	0.451			
Lecturer Influence (3)	0.501	0.400		
Expected Effort (4)	0.829	0.450	0.474	-

4.2. Structural model

The structural model was analyzed by examining the path coefficients (β) and their statistical significance. As shown in Table 3, all observed relationships between constructs are statistically significant. The results show that expected effort has a positive and statistically significant effect on service quality ($\beta = 0.559$; $p = 0.000$), confirming hypothesis H₁. The influence of the lecturer also has a positive and significant impact on service quality ($\beta = 0.149$; $p = 0.011$), confirming hypothesis H₂. Personal innovativeness has a positive and statistically significant impact on service quality as well ($\beta = 0.128$; $p = 0.021$), confirming hypothesis H₃.

Table 3. Results of hypothesis testing (Authors)

Hypothesis	Construct	Path Coefficient (β)	Sample mean (M)	Standard deviation (STDEV)	t-statistics	p-value (p)*	Remark
H ₁	EE $\rightarrow$ SQ	0.559	0.560	0.061	9.197	0.000*	Accepted
H ₂	LI $\rightarrow$ SQ	0.149	0.151	0.059	2.549	0.011*	Accepted
H ₃	PI $\rightarrow$ SQ	0.128	0.126	0.056	2.301	0.021*	Accepted

Note: * significant at level of 0.05.

The coefficient of determination for the dependent variable (service quality) is $R^2 = 0.480$, indicating that the model with the included constructs of expected effort, lecturer influence, and personal innovativeness explains 48.0% of the variance in service quality. This value can be considered moderate, confirming the adequate explanatory power of the model. The results of the structural model obtained by applying the PLS-SEM method are shown graphically in Figure 2.

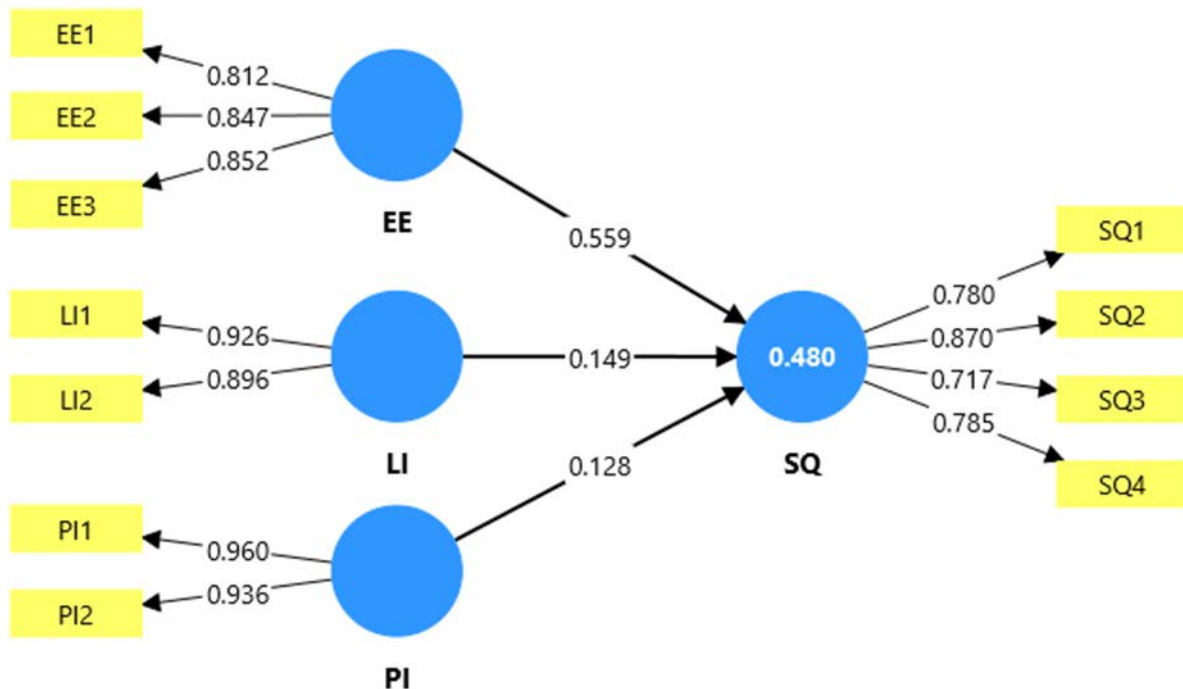


Figure 2 Results of structural model analysis (Authors)

5. Discussion

The research findings show that all observed factors, expected effort, lecturer influence, and personal innovativeness have a statistically significant and positive effect on the quality of mobile learning services. This confirms all three hypotheses and aligns with previous research on the acceptance and evaluation of m-learning systems [5, 7, 8]. Expected effort has the most pronounced impact on service quality ($\beta = 0.559$), indicating that the perception of ease of use is a key factor in the evaluation of m-learning systems. This finding is consistent with research emphasizing ease of use as one of the main determinants of positive user perceptions and satisfaction [7, 15]. In a mobile environment, where users often access content on the move, the system's intuitiveness and simplicity become especially important, which explains its dominant influence in this research.

The influence of the lecturer was also found to be statistically significant ($\beta = 0.149$), though weaker than the effect of expected effort. This result supports previous studies that highlight the importance of social influence, particularly in educational contexts, in shaping students' attitudes towards digital technologies [8]. However, the relatively lower coefficient may suggest that students in modern digital environments are increasingly making independent decisions about technology use, thereby reducing teachers' direct influence. Personal innovativeness also has a positive and significant effect on service quality ($\beta = 0.128$), consistent with previous research indicating that more innovative individuals have more positive attitudes towards new technologies and adopt them more readily [9,16]. Nevertheless, its influence is weaker than expected, which may suggest that, although individual characteristics are important, the system's functional features play a greater role in evaluating service quality.

The coefficient of determination indicates that the model explains 48% of the variance in service quality, which is considered a moderate level of explanation. This result is consistent with similar research in the field of m-learning, which indicates that a combination of technological, social, and individual factors can significantly contribute to explaining user perception, but also that additional factors should be included in future research [5,17]. Based on the above, it can be concluded that the system's functionality and simplicity are key determinants of service quality in mobile learning, while social and individual factors play a supplementary yet significant role. These results have important implications for improving the design and implementation of m-learning systems in higher education.

6. Conclusion

Mobile learning (m-learning) is becoming an increasingly important form of education in the digital age, offering student's flexibility in accessing educational content and fostering autonomous learning. Its application is especially relevant in higher education, where technological tools assist in enhancing the learning process and boosting student engagement. This research aimed to examine the impact of expected effort, lecturer influence, and personal innovativeness on students' perceptions of the quality of mobile learning services at the University of Belgrade. The results indicate that all the examined factors have a positive and statistically significant effect on service quality. Expected effort has the strongest influence, confirming that ease of use and system intuitiveness are essential for a favorable perception of m-learning services. Teacher influence and personal innovativeness also play complementary yet significant roles, illustrating that a combination of system characteristics, social influence, and individual user traits shapes the user experience.

The scientific and theoretical contribution of this paper lies in applying and verifying the research model among students in Serbia, as well as confirming previous findings on the determinants of acceptance and evaluation of the m-learning system. The study provides an empirical foundation for further investigation into the factors that shape the quality of digital education and enhances understanding of how students perceive and utilize mobile educational technologies.

Limitations of this study include a sample exclusively composed of students from a single university, which may limit the generalizability of the findings. Future research could broaden the sample to include students from multiple universities and different educational backgrounds, as well as incorporate additional factors such as content quality, system performance, and student motivation. It would also be advantageous to conduct longitudinal studies to monitor the long-term effectiveness and acceptance of the m-learning system, alongside employing complementary methodologies, including experimental and qualitative approaches.

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