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DIGITAL LITERACY AND ERP TECHNOLOGY ADOPTION IN BOSNIA AND HERZEGOVINA

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Abstract

Even though the Enterprise Resource Planning (ERP) technologies have been significantly addressed in managerial literature, few studies investigated the effects of digital literacy. This study aims to explore the relationship between digital literacy and ERP technology adoption in Bosnia and Herzegovina (BiH), as well as the mediating effects of business innovativeness within that relationship. A valid and reliable structured survey has been prepared and delivered to companies in BiH which use ERP technologies. Based on the recent literature, first order structural equation model has been proposed and tested. The empirical data was based on 82 questionnaire responses from companies in BiH which use ERP technologies. Once the data has been collected, factory data analysis has been performed to purify scales through items' loadings and Cronbach's Alpha values. The resultant scales have been tested for convergent validity through partial least-square path modelling using Smart PLS 3 software. The results indicated that effects of digital literacy on actual system use are significant and positive, and that business innovativeness partially mediates the relationship.

Keywords: digital literacy, business innovativeness, actual system use, enterprise resource planning, Bosnia and Herzegovina

JEL: M30, J24, O14

1. Introduction

At times when data has been referred to as the new natural resource (IBM, 2019), having in mind globalization processes and specific conditions caused by the COVID 19 pandemic, more than ever before both, companies and individuals are expected to be digitally literate. Digital literacy (DL) evolved from ability to use word processor in the personal computer to

ability of using digital tools to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new data, produce new media, and communicate with others (Marsh, 2018). Companies use Enterprise Resource Planning (ERP) to achieve consistency and visibility or transparency over the whole enterprise. Additional benefits are simpler access to dependable, coordinated data which ends up repetitive tasks and generates significant savings (Davenport, 1998).

While studies mostly focus on the relationship between DL and mobile learning adoption (Callum, Jeffrey, & Kinshuk, 2014; Marsh, 2018) and technology overall (Amornkitpinyo & Piriyaasurawong, 2017), few studies addressed the relationship between digital literacy and ERP. On the other hand, only 41 percent of CEOs surveyed say that they have the people, skills and resources required to execute digital business strategies. Despite the importance of soft skills, digital skills remain vital (IBM, 2019). This study provides significant theoretical contribution by focusing on the relationship between digital literacy and ERP adoption.

The latest census conducted in Bosnia and Herzegovina (BiH) in the year 2013, indicated that the number of illiterate people was 89,794 out of the total number of people over the age of ten. Even though the census was conducted in 2013, it was the first time that data on computer literacy was collected in BiH. The result of this data collection indicated an alarming fact. Out of the total of 3,180,115 persons over ten, there were 1,229,972 or 38.7% informatically illiterate people. This means that 1.3 million of citizens in BiH could not use computers and the Internet. More precisely, it was reported that one third of the people in BiH never used a computer, while one

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fourth never used the Internet (Agency for Statistics of Bosnia and Herzegovina, 2016).

There are no studies on DL conducted in BiH, and there are very few original research studies on ERP predictors. So, even though many companies in BiH adopted and use ERP technologies on a regular basis, official data on their adoption does not exist.

According to Skopak (2016), ERP has become an established phenomenon in BiH, but the investments in ERP software are far from being fully utilized. Most of the companies have started to use ERP to integrate functional areas, but very few have moved to extended ERP. His study found that even though companies in BiH are familiar with ERP knowledge, they are not sufficiently well informed (Skopak, 2016).

Therefore, the primary objective of this study was to find out if ERP adoption problem identified by Skopak (2016) has something to do with DL level in BiH. More precisely, the study aimed to investigate the effects of DL on ERP technology adoption in BiH. In addition, the mediating role of business innovativeness (BI) in the above-mentioned relationship was investigated as well.

The information presented above kindled our interest in finding the answers to the following research questions:

- (1) Are there any direct effects of DL on BI and ERP adoption?
- (2) Are there any direct effects of BI on ERP adoption?
- (3) Does BI have a mediating role between DL and ERP adoption?

Answering the research questions has both practical and theoretical implications. While theoretically it provides empirical evidence that contributes to relatively scarce literature investigating effects of DL on ERP, practically it drives managers' attention to the importance of DL for implementing their business strategies.

Practical implication for the government on all levels would be to support DL related projects for both individuals and legal entities, because in this way they support digital business transformation process in the country.

To answer the above-mentioned research questions, a section of Bosnian companies which use ERP technologies was studied and modelled by deploying the structural equation modelling (SEM) technique.

The research was initiated by a piloting literature, developing a structured survey, proceeded with the results and concluded.

2. Literature review

The accompanying literature review is a consequence of the assessment of profoundly ordered textbooks and journals. It gives fundamental data which recognizes variables, structures the study model and hypotheses, and distinguishes enough items to quantify the variables.

The exploration yielded three factors that are analyzed in the accompanying sections, specifically DL, behavioral intention (BI), and actual system use.

2.1. Enterprise Resource Planning (ERP)

ERP gives the spine to a venture wide data system. At the center of this enterprise software is the main database which provides and sustains information into applications. In this way, business procedures and information are easily managed across the institution.

With an ERP system, information should be entered just once. The system gives consistency and visibility or transparency over the whole enterprise. An essential advantage of ERP is a simpler access to dependable, coordinated data. ERP represents the end of repetitive tasks and generates significant savings (Davenport, 1998).

It is important to mention that there are two main types of ERP, cloud ERP and traditional ERP. Hadidi, Al-Rashdan, Hadidi and Soubhi (2020) concluded that the cloud ERP is highly flexible, enabling organizations to add any module with ease and speed without having to reinstall it, contrary to traditional ERP whereby it takes time to install a module within the organizations.

Therefore, it is not surprising that organizations are increasingly switching to the cloud ERP system (Hadidi, Al-Rashdan, Hadidi, & Soubhi, 2020).

By observing financial performance indicators of companies that adopted ERP and those that did not, Ali, van Groenendaal, & Weigand (2020) provided empirical evidence that ERP implementation provides benefits for companies. More precisely, their results have shown that investing in ERP in Pakistan had a positive effect on the key financial performance indicators when comparing adopters and non-adopters (Ali, van Groenendaal, & Weigand, 2020).

AlMuhayfith and Shaiti (2020) focused on both factors of ERP usage and its financial consequences. They found that management support, user satisfaction, and training significantly impact ERP usage, while ERP systems enhance SME performance (AlMuhayfith & Shaiti, 2020). Costa, Aparicio, and Raposo (2020) tried to understand if ERP usage supports management learning. They reported that system quality, process quality, and training play a determinant role in individual performance (Costa, Aparicio, & Raposo, 2020).

Trying to show past, present, and future when it comes to ERP, Katuu (2020) covered the most recent developments, including discussions on cloud ERPs and postmodern ERPs. The author concluded that ERPs have evolved rapidly in response to both internal and external dynamics in the enterprises where they have been implemented. It is suggested to institutions with implemented ERP to consider updating their systems with the integration of artificial intelligence and robotic process automation (Katu, 2020). To maximize benefits from ERP, organizations must properly implement the ERP system. In this way, organizations need to experience several learning, adaptation and investment processes (Ross & Vitale, 2000).

2.2. Digital Literacy (DL)

The idea of advanced DL has changed over time along with the development of digital technologies. An individual used to be

perceived as digitally literate if he was able to use, for instance, a word processor in the personal computer. After some time, the idea starts to be viewed as someone's capacity to utilize a product or a gadget for various purposes. Jones-Kavalier and Fanningan (2006) stressed out that we cannot sufficiently comprehend these digital media if we continue viewing them as an issue of machines. Hence, the significance of innovation is not simply the innovation itself, but rather personal, social, and other types of benefits we make of it. These benefits are however impossible to be generated without DL.

DL is related to awareness, perspective and talent of people to use digital tools to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new data, produce new media, and communicate with others (Marsh, 2018).

Over the previous few years, due to the significant growth of digital skills, many DL measures have been projected. Even though the primary measurement instruments of DL were limited to computers, nowadays they cover a much wider range of devices. Therefore, it is not surprising that Jones-Kavalier and Fanningan (2006) emphasized that proper usage of the Internet requires additional skills, other than basic utilization of a computer.

Considering the reviewed literature, a model of DL with six important dimensions appeared to be most comprehensive: technological skills, personal security skills, critical skills, devices security skills, informational skills, and communication skills (Rodriguez-de-Dios, Igartua, & Gonzalez-Vazquez, 2016).

Although several studies have outlined and conceptualized this kind of literacy, there is an absence of analysis on evolving measures of DL. It is important to mention that most of the instruments to measure DL consider the Internet, while ignoring the rest of the wide range of digital aspects. Therefore, considering these arguments, the instrument developed by Rodriguez-de-Dios, Igartua and Gonzalez-Vazquez (2016) appeared to be the most comprehensive and very supportive to achieve the research objectives of this study.

2.3. Behavioral Intention (BI)

According to Warshaw and Davis (1985), BI refers to defined patterns of performing or not performing some predefined future conduct. This variable helps understand if a respondent has something at the top of the priority list that he/she plans to do, use, give, and so on. The reason for embracing this lexicon-based significance is twofold:

- (1) Intention has not been clearly articulated in social writing or maybe, it is normally left vague, apparently in the light of the fact that its importance is 'undeniable'. The hypothesis of Fishbein and Ajzen (1975) sees an individual's goal to be performed (or not to be performed) as the prompt determinant of the activity (Ajzen & Fishbein, 1980). Goal is characterized as self-prediction (Fishbein & Ajzen, 1975).
- (2) Studies that inspired the understanding of BI as "plan", through statements such as "I plan to (do X)" (Ajzen & Fishbein, 1980).

2.4. Actual System Use

The actual system use alludes to how regularly and how frequently the system is being used by the client (Davis, 1989). As actual system use may impact BI through consistence, it is extremely important that clients of the system are properly educated or trained about the usage of the system (Nakayima, 2011). In this study, the actual system use refers to how regularly a user uses an ERP technology in his/her work.

2.5. Digital Literacy & Behavioral Intention

A direct relationship was found between the BI of teachers to use mobile learning and their DL level (Callum, Jeffrey, & Kinshuk, 2014). Marsh (2018) provided empirical evidence on the impact of DL on BI to keep utilizing the advanced working environment.

Amornkitpinyo and Piriyaawong (2017) found that information and communication technology knowledge has a positive impact on BI, during their research about how information communication and technology skills affect the technology acceptance process.

Based on the above-mentioned literature, hypothesis 1 of this study is formed:

H1: Digital Literacy has significant and positive direct effects on Behavioral Intention.

2.6. Digital Literacy & Actual System Use

The idea of advanced DL has changed over time along with the development of digital technologies. Nowadays it represents a much more complex variable with six important dimensions: Technological skills, Personal security skills, Critical skills, Devices security skills, Informational skills and Communication skills (Rodriguez-de-Dios, Igartua, & Gonzalez-Vazquez, 2016).

The actual system use alludes to how regularly and how frequently the system is used by the client (Davis, 1989). Considering the lack of literature, it is important to hypothesize and for the first time in BiH offer the empirical evidence on the relationship between DL and ERP adoption measured through actual system use. Based on the above-mentioned literature, hypothesis 2 of this study is formulated as follows:

H2: Digital Literacy has significant and positive direct effects on Actual System Use.

2.7. Behavioral Intention, Actual System Use & Digital Literacy

Raymond (2019) investigated the behavioral intention of people to use money application in Indonesia called Bukareksa. The findings revealed that BI of people did affect actual use of this application. Considering the study of Raymond (2019) the following hypothesis is proposed for this study:

H3: Behavioral Intention has significant and positive direct effects on Actual System Use.

As already mentioned, direct relationship showed up between DL and BI to use mobile learning (Callum, Jeffrey, & Kinshuk, 2014). According to literature on triangular relationship among DL, BI and ASU, it is obvious that direct effects are well supported with empirical evidence.

Therefore, one may assume that BI plays a mediating role in the relationship between DL and ASU. Since this mediating relationship was not investigated before, with the aim to deliver theoretical contribution, the following hypothesis is proposed for the study:

H4: BI mediates relationship between DL and ASU.

The hypothetical model that involves the relationship between DL, BI and ASU is presented in Figure 1.

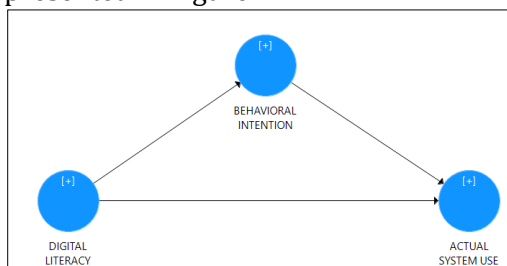


Figure 1 *Hypothetical Model*

Source: Authors' research

3. Methodology

3.1. Data Collection

The data used in this survey was collected by distributing a structured survey. The scales used for the preparation of this instrument were previously used by researchers and proven reliable and valid for measuring DL, BI, and ASU. For the measurement of DL, the work of Rodriguez-de-Dios, Igartua, & Gonzalez-Vazquez (2016) was used, while for the measurement of BI the work of Callum, Jeffrey, & Kinshuk (2014) was considered. Finally, the measurement of ASU was created on the basis of the work of Raymond (2019).

The items in the questionnaire for DL, BI and ASU were measured with a five-point semantic differential scale. The distributed survey contained questions in five diverse classifications as follows:

- Questions 1-7: Demographics
- Questions 8-10: ASU
- Questions 11-13: BI
- Questions 14-31: DL

The data was collected using online and paper-based approach. The respondents were contacted both via email and face to face.

3.2. Sample

The sample of this study were employees working in BiH companies which use ERP technology on a regular basis. As the official list of ERP users does not exist in BiH, the only realistic sampling methodology was convenient sampling.

Authors' personal contacts of employees working in companies with implemented ERP system were used in data collection process. Out of 150 invitations to participate in the study which were sent via email, 82 responses were collected indicating a response rate of 54%. Most of the responses were submitted in a digital form (through Google Forms) while the rest was submitted by the pen-and-paper method.

If we consider that the data was collected during the COVID 19 pandemic, which caused many difficulties in the process, the response rate could be labeled as satisfactory.

3.3. Data Analysis

Once the data was collected, it was processed using Software Package for Social Sciences and Smart PLS 3 software (a SEM software).

The causal relationships of the hypothetical model shown in Figure 1 were tested by means of the partial least square (PLS) path modelling method.

Following instructions of Becker, Klein and Wetzels (2012), the following steps were performed to prepare SEM using Smart PLS3: (1) The latent variables were created and related measurement items were assigned to them; (2) The independent variables are related to one dependent variable. The output of these steps is given in Figure 2.

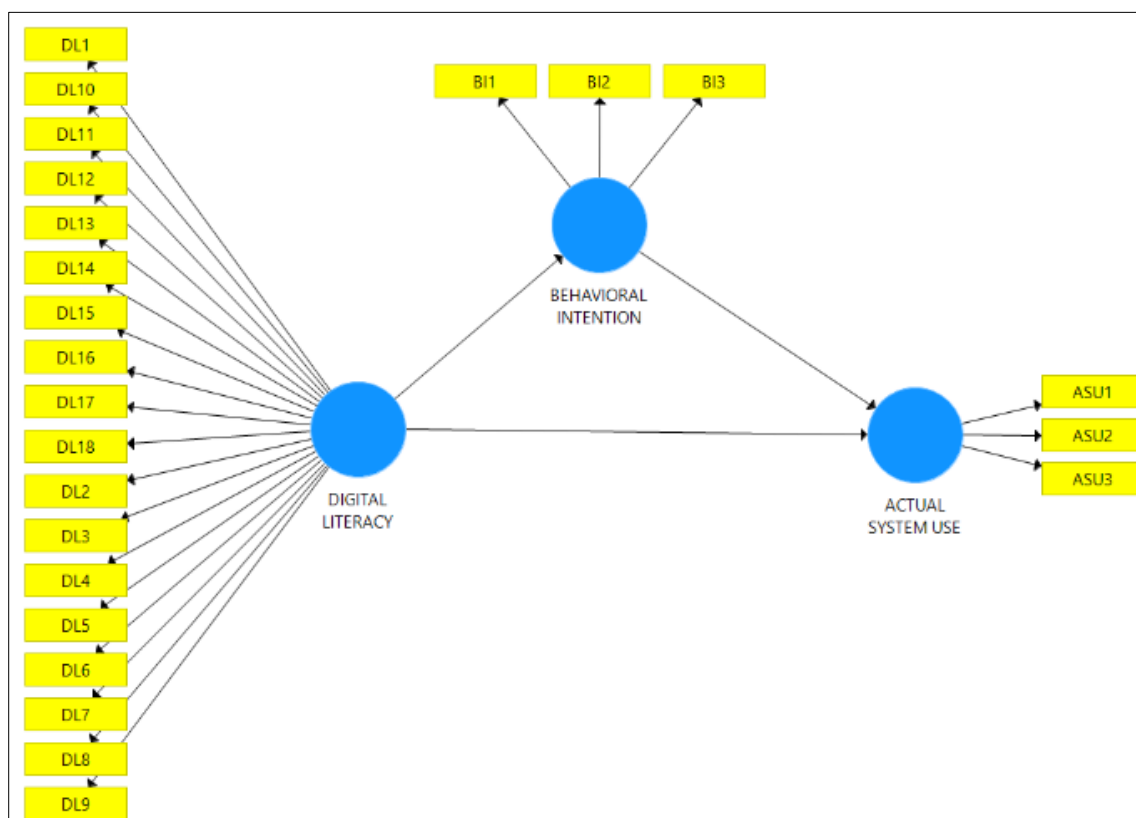


Figure 2. Model in Smart PLS 3

Source: Authors' research

This study relied on Software Package for Social Sciences for descriptive analysis while Smart PLS 3, a SEM program was used for confirmatory factor analysis, model fit and effects analysis. PLS could be applied in many instances of small samples when other methods fail (Henseler, et al., 2014).

Regular PLS algorithm and Bootstrapping technique were conducted in Smart PLS 3 to conduct exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and investigate direct effects of variables in the model.

To ensure stability of the results, following the recommendation of Hair, Sarstedt, Ringle, and Gudergan (2017), PLS Bootstrapping was completed using 10,000 bootstrap subsamples.

4. Validity, reliability and model fit

To test the construct validity of the instrument, both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were made using Smart PLS 3. The main findings of the two

mentioned analyses will be presented in the following paragraphs.

Factor loadings were observed for each item (see Table 4.1).

Items with factor loadings greater than .5 on the factor with which they were hypothesized to correspond were considered adequate indicators of that factor (Hair, Black, Babin, & Anderson, 2010).

Table 4.1 *Loadings of items per factors in measurement instrument*

<i>Code</i>	<i>Item</i>	<i>ASU</i>	<i>BI</i>	<i>DL</i>
ASU1	I frequently engage in ERP system when doing daily work-related activities.	0.864		
ASU2	I depend on ERP system in my job.	0.897		
ASU3	I cannot imagine doing my work without ERP system.	0.915		
BI1	I will always use ERP system.		0.864	
BI2	If I have the chance, I intend to use ERP system even via smartphones, tablets and other devices.		0.891	
BI3	I intend to use ERP system on a regular daily basis.		0.896	
DL1	I easily bookmark a website I like so I can view it later.			0.867
DL10	I use software to detect and remove viruses.			0.754
DL11	I easily detect a virus in my digital device.			0.658
DL12	I block unwanted or junk mail/spam.			0.734
DL13	I always use the best keywords for online searching.			0.793
DL14	I deal well with information online, regardless of various website designs.			0.868
DL15	I easily determine if information online is useful for me.			0.894
DL16	I am proficient in communicating using various methods (such as making a call, video call, email, WhatsApp, Viber, messaging, etc.).			0.896
DL17	I easily send any file to a contact using a smartphone.			0.902
DL18	I use all features of communication applications (such as emojis, stickers...).			0.616
DL2	I easily download/save a photo I found online.			0.841
DL3	I always connect to a Wi-Fi network no matter the device I am using, or the location where I am.			0.672
DL4	I know how to deactivate the function showing my GPS location (e.g., Facebook, applications).			0.794
DL5	I know when I can post pictures and videos of other people online.			0.650
DL6	I easily change the sharing settings of social media to choose what others can see about me (friends of friends, friends only, only me).			0.842
DL7	I always compare different sources to decide if the information is true.			0.788
DL8	I know how to determine if the information I find online is reliable.			0.684
DL9	I always compare different applications in order to choose which one is most reliable and secure.			0.705

Source: Authors' research

Cronbach's (1951) coefficient alpha is widely used to determine the reliability of multi-item scales and assess the internal consistency of model constructs. The reliability of the factors in this study is presented in Table 4.2 below.

Table 4.2 Construct Validation

Factor	<i>C's</i> α >0.7	CR >0.7	AVE >0.5	ASU	BI	DL
ASU	0.872	0.921	0.796	0.892		
BI	0.860	0.914	0.781	0.752	0.884	
DL	0.961	0.965	0.610	0.685	0.716	0.781

Note 1: The right-hand part of the table displays construct correlations and square roots of AVE on the diagonal).
 Note 2: For full name of 1st order latent variables, please see Figure 2.
 Note 3: C's α = Cronbach's Alpha

Source: Authors' research

PLS Bootstrapping is completed using 10,000 bootstrap subsamples indicating all AVE values between 0.610 and 0.781 which is above threshold of 0.5 defined by Fornell and Larcker (1981) and Hair, Black, Babin, and Anderson (2010).

Cronbach's coefficient alpha values of all first order latent variables conform to the rule of thumb defined by Cronbach and Richard (2004), and this is confirmed by composite reliability scores which are all higher than the recommended cut-off of 0.7 (Fornell & Larcker, 1981; Hair, Black, Babin, & Anderson, 2010).

According to Schmiedel, Brocke, and Recker (2014), discriminant validity is ensured once the AVE value for each construct exceeds the squared correlation between that and any other construct in the factor correlation matrix. Table 4.2 indicates a full compliance to this rule.

Considering factor loadings of all items higher than 0.4, composite reliability scores higher than 0.7, and AVE values higher than 0.5, it could be concluded that all conditions of convergent validity are met in this study.

Goodness of fit (GoF) represents the measure that accounts for the model quality at both the measurement and the structural models (Sanchez, 2013).

To calculate GoF for this study, the formula proposed by Wetzels, Odekerken-Schröder, and Oppen (2009) was applied. GoF values

have following meaning: GoF small = 0.1, GoF medium = 0.25, and GoF large = 0.36 (Wetzels, Odekerken-Schröder, & Oppen, 2009).

After application of their formula, the GoF value for the model investigated in this study was 0.65, which is characterized as a large GoF.

5. Results and disscusion

5.1. Descriptive statistics

The questionnaire provided 82 valid responses in total. There were 39 male and 43 female respondents, which shows that both genders are equally active ERP users.

Most of the respondents were graduates with bachelor's degree (41.5%) and master's degree (35.4%). Only five respondents are aged 51 years and more, but most of them are adults aged between 31-40 years (40.2%) and young adults aged between 20-30 years (35.4%).

Most respondents use ERP technologies monthly 11 times and more, precisely 64 users, while only two responded that they never use ERP. More than half of the respondents (57.3%) used five or more modules at the company currently, followed by three modules used by 13 respondents.

Most of the respondents answered that their company is using local server-based ERP, 61 precisely, while cloud server based ERP is used by 21 or (25.6%).

Table 5.1 *Sample Characteristics*

<i>Variable</i>	<i>Demographics</i>	<i>Number</i>	<i>Valid Percent</i>
Gender	Male	39	47.6%
	Female	43	52.4%
	Total	82	100.0%
Education	High School	18	22.0%
	Bachelor Degree	34	41.5%
	Master Degree	29	35.4%
	PhD Degree	1	1.2%
	Total	82	100.0%
Age	20-30 years	29	35.4%
	31-40 years	33	40.2%
	41-50 years	15	18.3%
	51 years and more	5	6.1%
	Total	82	100.0%
ERP Usage Frequency (<i>Times/month</i>)	Never	2	2.4%
	1-5 times/month	11	13.4%
	6-10 times/month	5	6.1%
	11 times and more	64	78.0%
	Total	82	100.0%
ERP Modules Used (<i>number of modules used in a respondent's company</i>)	1	8	9.8%
	2	6	7.3%
	3	13	15.9%
	4	8	9.8%
	5+	47	57.3%
	Total	82	100.0%
ERP Type Installed (<i>type of ERP installed in a respondent's company</i>)	Local server based ERP	61	74.4%
	Cloud server-based ERP	21	25.6%
	Total	82	100.0%

Source: Authors' research

5.2. Empirical findings

Figure 3 presents acceptable loading of items on all the variables. Accordingly, there was no need for the removal of any item(s).

The r^2 values for BI and ASU were above 0.5 which is a good indicator of variability explained.

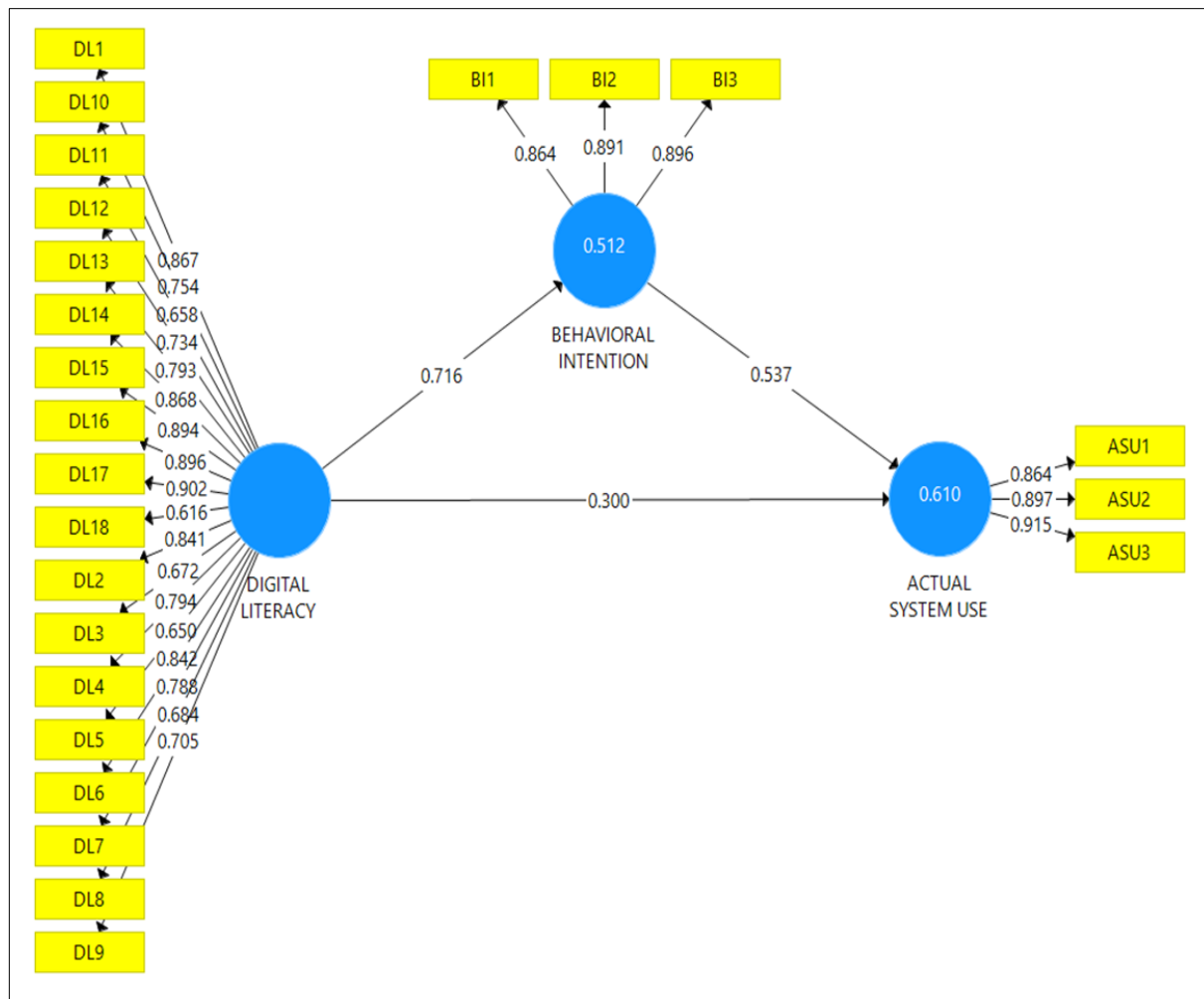


Figure 3. Loadings of Items per Factors, r^2 values
Source: Authors' research

All the empirical findings are summarized in Table 5.2.

Table 5.2 Testing Hypotheses

Hypothesis	Path in the Model	Direct Effects	Indirect Effects	Hypothesis Status
H1	DL-> BI	$p = 0.000^*$ $t = 8.123$	-	Supported
H2	DL-> ASU	$p = 0.013^*$ $t = 2.490$	-	Supported
H3	BI-> ASU	$p = 0.000^*$ $t = 5.477$	-	Supported
H4	DL-> BI -> ASU	-	$p = 0.000^*$ $t = 4.119$	Supported

Note 1: * Significant at 95% confidence interval

Source: Authors' research

Hypothesis 1 was supported with p value of 0.000, as well as the t value of 8.123. The direct effects are regarded as significant at 95% confidence interval. This means that the more digitally literate, the higher probability that the respondents are likely to use ERP system.

The confirmation of hypothesis 1 is in line with previous literature. Callum, Jeffrey and Kinshuk (2014) also found a direct relationship between BI and DL level of their respondents. Marsh (2018) provided empirical evidence on the impact of DL on BI to keep utilizing the advanced working environment.

Amornkitpinyo and Piriyaawong (2017) found that information and communication technology knowledge has a positive impact on BI.

Hypothesis 2 was supported with p value of 0.013, as well as the t value of 2.490. The direct effects are regarded as significant at 95% confidence interval.

s means that the more digitally literate, the higher probability that respondents will use ERP system in BiH. The results regarding hypothesis 2 are supportive towards the findings revealed by Callum, Jeffrey, & Kinshuk (2014), Marsh (2018) and Amornkitpinyo & Piriyaawong (2017).

The findings from hypotheses 1 and 2 are complementary to the study of Skopak (2016) who identified ERP adoption problem in BiH saying that the investments in ERP software are far from fully utilized. In other words, DL could be the barrier for a full utilization of ERP software.

Hypothesis 3 was supported with p value of 0.000, as well as the t value of 5.477. The direct effects are regarded as significant at 95% confidence interval.

This finding revealed that BI of people did affect ASU of ERP in BiH, which supports the previously reported findings of Raymond (2019) who also revealed that BI of people did affect ASU of the application.

Hypothesis 4 was supported with p value of 0.000, as well as the t value of 4.119. The

indirect effects of DL on ASU are regarded as significant at 95% confidence interval. If one observes the mediation results through the rules of Baron and Kenny (1986), it is easy to characterize BI as a partial mediator.

This is due to the fact that all three paths in a triangular mediating relationship, namely path a (DL -> BI), path b (BI -> ASU) and path c (DL -> ASU) were statistically significant. To conclude, BI mediates the relationship between DL and ASU, and according to Baron and Kenny (1986), it is partial mediation.

6. Conclusion

The primary objective of this study was to find out if ERP adoption problem identified by Skopak (2016) has something to do with DL level in BiH.

This was investigated by seeking answers to the research questions: (1) Are there any direct effects of DL on BI and ERP adoption? (2) Are there any direct effects of BI on ERP adoption? (3) Does BI have a mediating role between DL and ERP adoption?

The research reported in this study empirically proved that DL has significant direct and indirect effects on ERP adoption with BI as a statistically significant mediator.

The results emphasized the crucial role played by DL and BI in ERP adoption by users in BiH.

The results of this study confirmed the findings of studies from the literature review (Callum, Jeffrey, & Kinshuk, 2014; Marsh, 2018; Amornkitpinyo & Piriyaawong, 2017; Raymond, 2019).

In addition, it contributed to explaining why ERP systems in BiH are underutilized as alarmed by Skopak (2016).

Even though the number of observations was limited (82 responses), exploratory and confirmatory factor analysis conducted using a Smart PLS (a SEM program) indicated a high level of validity and reliability.

Data collection was done in BiH, and the data gathered was assumed to be the representative

for the entire population of BiH companies using ERP technologies.

This research provides supporting evidence to the already existing, yet modest literature on DL, BI and ASU.

The study provided a validation of scales to measure all the variables mentioned. This can be useful to practitioners to evaluate their DL, BI and ASU and to focus on areas for improvement.

The main theoretical contribution of this study is providing important evidence to relatively scarce literature investigating the effects of DL on ERP. There is hope that this study may serve as a stimulus for other researchers to address the topic and provide more opportunities for result benchmarking in future research.

Important practical contribution of this study for individual ERP users is the advice to work on their DL level so as to better utilize ERP system opportunities and maximize benefits.

On the other hand, the practical implication of this study for managers is to systematically support and encourage DL of their employees so as to improve implementation of their business strategies and support digital business transformation process.

The practical implication for all levels of government in BiH would be to initiate, develop and support DL-related projects for both individuals and legal entities, because in this way they contribute to digital business transformation process at the country level.

It is important to bear in mind that making conclusions based on data collected from 82 respondents could be treated as the limitation of the study. Future studies should consider larger samples. Another limitation of this study is poor basis for discussion.

More precisely, the lack of literature focused on the relationship between DL, BI and ASU of ERP systems forced the authors to compare the findings with the studies which were investigating hypothesized relationships for different technologies (such are ICT).

It is recommended to repeat the study at different times, and provide conclusions using data from a specific time period.

In addition, segmenting the sample according to size and providing specific studies of this type for small, medium and large companies would be another recommendation.

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