ABSTRACT
The main goal of this paper is to research usefulness and satisfaction with the ERP (Enterprise Resource Planning) system from the end users’ point of view in companies in Bosnia and Herzegovina (BiH). The research was conducted using a questionnaire prepared on the findings from the literature. The data were statistically analysed in accordance with the research objectives. The results show that there is a significant difference in user satisfaction with ERP regarding numbers of modules in ERP. Research shows that end users in participating companies are relatively satisfied with their ERP solutions and consider them useful for business, but improvements are still possible.

KEYWORDS
End-User Perspective, ERP, ERP System, Satisfaction, Usefulness

INTRODUCTION
Almost 30 years after their first implementation, the ERP (Enterprise Resource Planning) systems are still experiencing increasing interest from both business and academic parties. The reason for that interest lies in the fact that ERP systems are one of the most important and sophisticated software solutions. ERP systems are developed to enable users to track business assets (raw materials, finished goods, capital assets, money, human resource, etc.) and to monitor all types of business processes and financial transactions.

ERP is an integrated information system developed to support different business processes inside the company (Fertalj & Kalpić, 2004). ERP enables accomplishing and automation of business processes in the same and coordinated way across the organization. It is the first generation of business systems whose aim is to integrate all the company’s data and to give comprehensive support to all crucial functions in the organization. ERP implies extensive software applications that support critical organizational functions. The main goal of ERP is to enable a dynamic and direct flow of information, which should raise the efficiency and value of information (Motiwalla & Thompson, 2009). According to Nah et al. (2001), the most important characteristics of ERP are the following: integrated data (centralized database), the capability of automation and integration of business processes, data sharing across the whole company, and creating and access to information in real-time (Nah et al., 2001).
The implementation of ERP is a complex process that includes different types of users from the whole organization. There is no guarantee that ERP implementation will be successful and that it will ensure all or any of the promising benefits for the organization. A closer look at the nature of reported problems suggests that the ERP implementation issues are not just technical, but encompass broader behavioral factors (Skok & Döringer, 2011). Chang et al. (2008) stated that organizations need to understand the system adoption from the user’s perspective to prepare their employees to face new challenges and learn how to make good use of the technology to reap tangible benefits (Chang et al., 2008). User perception related to ERP usefulness and satisfaction with ERP can be critical factors that influence successful ERP implementation.

The researches related to ERP usefulness have used different perspectives (usefulness as the result of improved job performance, factors influencing ERP usefulness at an individual level, usefulness as the result of improved organizational performance, etc.).

The research conducted by Thatcher, Stepina, and Boyle (2002) showed that factors as task productivity and innovation, customer satisfaction, management control, and decision making, high interdepartmental communication, and cooperation, together with data analysis and conversion could be enhanced by ERP implementation and result with higher job performance (Thatcher et al., 2002). Their results are supported by the results of studies conducted by Ang and Slaughter (2001), Herold et al. (2007), Devadoss & Pan (2007), Hall (2002), and Jalal (2011).

Sun et al. (2009) analyzed some other ERP factors (work compatibility, ease of use, behavior, and intention to use) and showed that these factors are significant for user’s performance (Sun et al., 2009). Huy et al. (2019) research the role of job satisfaction in the relationship between individual job performance and technology fit in an ERP environment. Their research showed that the technology fit was significantly and positively related to job satisfaction and individual job performance in an ERP environment (Huy et al., 2019).

Abugabah et al. (2015) evaluated the impact of the information system on the performance of users by proposing a model comprising of the variables from Delone and McLean Information System (IS) Success model, Technology Acceptance Model (TAM), and Task Technology Fit (TTS).

Eid and Abbas (2017) conducted a study to evaluate the measure of user adaptation of ERP post-implementation on the benefits provided to end-users by the ERP systems. Their study also examines the moderating effect of user experience with an ERP system between the relationships of user adaptations and with both the effectiveness and efficiency of user benefits (Ullah et al., 2018).

Rajan & Baral (2015) examined the effect of some of the individual, organizational, and technological factors on the usage of ERP and its impact on the end-user. Their analysis showed that computer self-efficacy, organizational support, training, and compatibility have a positive influence on ERP usage and individual performance.

Liu et al. (2011) used a multi-case study method in defining the individual level of ERP assimilation and identifying key influential factors. Interviews with ERP users at all levels in five organizations revealed four key drivers in fostering individual ERP assimilation: influence of supervisors, performance evaluation schemes, intrinsic motivation, and perceived usefulness, as well as two significant moderators: job specifications and individual absorptive capacity (Liu et al., 2011).

The study conducted by Kwak et al. (2012) incorporates the best practices of ERP system implementation projects, internal support, external (consultant) support, and functionality selection, into the extended technology acceptance model (TAM) that includes belief constructs and socio-environmental construct (subjective norm). The empirical analyses showed that managerial practices and socio-environmental factors are significantly related to the original TAM variables in the context of an ERP system. The interesting finding is the negative effect of consultant support on perceived usefulness, but a positive effect on the perceived ease of use (Kwak et al., 2012).

Usefulness as the result of improved organizational performance has been analyzed, among others, as ERP’s impact on the integration of organization (Jirava & Toseafa, 2017), value chain (Bac & Erkan, 2013; Hwang & Min, 2013; Qazi et al., 2017), operational, managerial and strategic
performances (Wibowo & Sari, 2018), organizational structure and governance (Shoeby & Rehman, 2018), business process and organizational knowledge (Elragal & Serafi, 2011), etc.

User satisfaction with ERP is also crucial for ERP success (Davis & Huang, 2007). The researches related to ERP satisfaction have used different perspectives: ERP satisfaction observed as a unique measure, ERP satisfaction observed through the evaluation of the use of ERP from the end user’s perspective, evaluation of ERP systems characteristics from the end user’s perspective, critical success factors that influence ERP user satisfaction, etc.

DeLone and McLean in 1992 developed an IS success model composed of six dimensions: system quality, information quality, use, user satisfaction, individual impact, and organizational impact (Petter et al., 2008). In 2003, DeLone and McLean modified their original model and showed how “information quality, system quality and service quality influence intention to use/use and user satisfaction” (DeLone & McLean, 2014).

Some of the authors observed ERP satisfaction as a unique measure (DeLone & McLean, 2014; Urbach & Müller, 2011; Petter et al., 2013; Eldrandaly et al., 2015). The other authors analyzed ERP satisfaction through the evaluation of the use of ERP from the end user’s perspective (Shoeby & Rehman, 2018; Elragal & Al-Serafi, 2011; Tenhiälä & Helkiö, 2015).

The researches related to the evaluation of ERP systems characteristics from the end user’s perspective evaluates how the ERP system is used in business (Johansson et al., 2016; Handoko et al., 2015; Bavarsad et al., 2013; Shatat & Udin, 2012). Common to those researches is that they analyze end users’ opinions about ERP systems characteristics, ways of using or benefits of ERP systems, during their continuous use, not just during the implementation process, which ends when the ERP system is put into operation. Some researchers evaluate the level of ERP system development in the enterprise (Euripidis & Fotini, 2012), the level of business process standardization derived from the ERP system (Chtioui, 2009), soft and hard characteristics of ERP system, quality of system and information maintenance (Tsai et al., 2011), or quality of implementation services (Tsai et al., 2007).

Several researchers analyzed critical success factors that influence ERP user satisfaction. Lotfy and Halawi (2015) developed a conceptual model to measure ERP user value based on three factors: technology, organization, and environment. Kumawat and Kumawat (2017) considered 14 critical success factors as input variables and user satisfaction (US) as output variables. An analytical approach is used to summarize these 14 CSFs in three factors that are human, technological, and organizational (Kumawat & Kumawat, 2017). Jenatabadi and Noudoostbeni (2014) developed a model to predict ERP user satisfaction based on eight factors: gender, age, education level, marital, experience, income, computer, and constant.

Proceeding from past researches, the main goal of the research presented in this paper is the analysis of ERP users’ perceptions related to ERP usefulness and users’ satisfaction with ERP in companies with headquarters in Bosnia and Herzegovina. Research questions are: (i) RQ1: To what degree do the large and medium companies in Bosnia and Herzegovina use ERP systems?; (ii) RQ2: What are the characteristics of analyzed ERP systems?; (iii) RQ3: Are there any differences in the assessment between ERP usefulness and ERP satisfaction respecting the size of companies and selected ERP characteristics - age of ERP, several modules and the information if the ERP is bought as off-the-shelf or developed as in-house solution according to users’ requirements?

The introduction of the article addresses two critical factors for successful ERP implementation - user perception related to ERP usefulness and satisfaction with ERP, as well as some of the researches related to those factors. The methodology part describes the sample, the research instrument, and the course and data processing methods. After that, the results of the empirical research are presented and discussed, and the paper ends with a conclusion.
METHODOLOGY

The empirical research was conducted during January 2019 in Bosnia and Herzegovina. The research instrument was a questionnaire prepared by authors on the findings from the literature. The questionnaire consisted of two main parts. The first part incorporated an eliminatory question asking if the company had an ERP system and further 8 questions about the characteristics of the company’s ERP system (the questions are presented in the results of research). The second part of the questionnaire had two sets of statements related to usefulness and users’ satisfaction with the ERP system. The statements and corresponding measures of internal consistency for two dimensions (usefulness and satisfaction) are presented in Table 1. The values of Cronbach’s alpha show that both dimensions have good internal consistency.

Table 1. Dimensions, statements and measures of internal consistency

| Code | Dimension/Item                                                                 | Cronbach’s Alpha |
|------|-------------------------------------------------------------------------------|-----------------|
|      | **Usefulness/utility**                                                        |                 |
| u1   | I use ERP reports during my daily work.                                      | 0.862           |
| u2   | ERP reports significantly facilitate the performing of my daily tasks.        |                 |
| u3   | ERP reports increase my productivity.                                        |                 |
| u4   | I use ERP reports regularly in the process of decision-making.               |                 |
| u5   | ERP reports facilitate my work and communication with my co-workers inside the company. |     |
| u6   | ERP reports facilitate my work and communication with other colleagues from other companies, banks, tax administration, and other public institutions. | |
|      | **Satisfaction**                                                             | 0.860           |
| s1   | Working with ERP is comfortable for me.                                      |                 |
| s2   | I am satisfied with the functionality/features offered by ERP.                |                 |
| s3   | I am satisfied with the ERP user interface.                                  |                 |
| s4   | I shall recommend my ERP to other companies.                                 |                 |

Source: Authors.

The survey was conducted online. The Google Forms tool was used for the preparation of the questionnaire. The link to the questionnaire was distributed by e-mail.

For acquiring the answers to the above-stated research questions, the research was conducted through two rounds. In the first round, the e-mails with an invitation to participate in the survey were sent to e-mail addresses of 1792 companies in Bosnia and Herzegovina. The invitation was accepted by 505 companies (the response rate is 28.2%). From 505 companies that responded to the questionnaire, 399 (79.0%) confirmed that they had an ERP system. In the second round of the survey, a new questionnaire with a set of statements related to ERP usefulness and users’ satisfaction was sent to the e-mail addresses of 399 companies with ERP. In the second round, 62 companies responded (29 medium-sized and 33 large companies, the response rate is 15.54%). An analysis of the data collected in the first round will provide answers to the first two research questions (RQ1 and RQ2), and an analysis of the data collected in the second round will provide answers to the third research question (RQ3).
Statistical tool IBM SPSS Statistics for Windows, Version 25.0 (Armonk, NY: IBM Corp.) was used for data analysis. The results are presented as absolute and relative frequencies (number and %) like mean and standard deviation or median and interquartile range (descriptive statistics), depending on the normality of distribution of answers to specific statements and dimensions. Kolmogorov-Smirnov test was used for testing the normality of distribution. The significance of differences was tested by the following tests (inferential statistics): χ² test, t-test for independent samples, ANOVA, Mann-Whitney U test, and Kruskal-Wallis H test (depending on normality of distributions and type of variables). The statistical significance limit was set at p = 0.05. P values that could not be expressed up to three decimal places are expressed as p < 0.001.

The above-mentioned descriptive statistics procedures were used to obtain answers to the first two research questions (RQ1 and RQ2) while the above inferential statistics procedures were used to prepare the results that will answer the third research question (RQ3).

RESULTS

As it was stated in the methodology, the research was conducted through two rounds, so the results are presented in the same way.

1st Round of Research

From 505 of those companies that responded to the questionnaire in the 1st round of research, 399 (79.0%) confirmed that they had an ERP system. There are significantly more companies with ERP than companies without ERP (χ² = 169.998; p < 0.001). This provided an answer to the first research question (RQ1) - how many companies (medium and large) in BiH use ERP systems in their business.

The second research question (RQ2) focused on the characteristics of ERP systems used in BiH companies, and the answer can be seen from Table 2 which presents the answers of companies that have ERP (n = 399) related to questions about ERP characteristics.

Table 2. ERP characteristics

| Time elapsed since ERP has been bought or developed – age of ERP in years | Number of companies | %    |
|------------------------------------------------------------------------|---------------------|------|
| > 10                                                                   | 173                 | 43.4 |
| 5 - 10                                                                 | 104                 | 26.1 |
| 2 - 5                                                                  | 77                  | 19.3 |
| < 2                                                                    | 45                  | 11.3 |
| Total                                                                  | 399                 | 100.0|

ERP is bought as an off-the-shelf solution

| Yes                                                                    | 283                 | 71.5 |
| No                                                                     | 113                 | 28.5 |
| Total                                                                  | 396                 | 100.0|

Number of ERP modules

| 1                                                                      | 26                  | 6.6  |
| 2                                                                      | 79                  | 20.0 |

Table 2 continued on next page
Most of the companies that responded to the survey have ERP which is older than 5 years. Almost three-quarters of companies state that they have off-the-shelf ERP. More than half of companies state that their ERP has more than three modules, while most companies buy all modules from the same vendor, and consequently, most of the modules have a similar user interface.

In most companies, ERP is based on a common centralized database that enables that all data (for example, data about customers, products, services, sales, and so on) is entered and stored only once and then used by all ERP modules simultaneously. Only 4.0% of companies state that their ERP cannot support automation and integration of different modules (for example, data from inventory module – quantities of goods entered from vendor invoice – is immediately visible in general ledger module for further financial processing). Around 90% of companies state that their ERP enables work in real, i.e., near real-time (for example, creating Receiving reports simultaneously with receiving and storing goods).

### Table 2 continued

| Number of companies | % |
|---------------------|---|
| 3                   | 66 | 16.7 |
| 4+                  | 224| 56.7 |
| Total               | 395| 100.0|
| All modules are bought from the same vendor | | |
| Yes                 | 335| 84.6 |
| No                  | 61 | 15.4 |
| Total               | 396| 100.0|
| Different modules have identical, i.e., very similar user interface | | |
| Yes                 | 353| 88.9 |
| No                  | 44 | 11.1 |
| Total               | 397| 100.0|
| ERP has a central database | | |
| Yes                 | 373| 93.5 |
| No                  | 26 | 6.5 |
| Total               | 399| 100.0|
| ERP enables the integration of different modules | | |
| Yes                 | 383| 96.0 |
| No                  | 16 | 4.0 |
| Total               | 399| 100.0|
| ERP enables near real-time work | | |
| Yes                 | 353| 88.7 |
| No                  | 45 | 11.3 |
| Total               | 398| 100.0|

Source: Authors.
2nd Round of Research

Table 3 presents the answers of companies (n = 62) that participated in the second round of research.

Table 3. The answers of companies that participated in the 2nd round of research

| Time elapsed since ERP has been bought or developed – age of ERP in years | Number of companies | % (n=62) |
|-------------------------------------------------------------------------|---------------------|----------|
| > 10                                                                    | 30                  | 48.4     |
| 5 - 10                                                                  | 16                  | 25.8     |
| 2 - 5                                                                  | 8                   | 12.9     |
| < 2                                                                    | 8                   | 12.9     |

| ERP is bought as an off-the-shelf solution                             | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| Yes                                                                   | 44                  | 71.0     |
| No                                                                    | 18                  | 29.0     |

| Number of ERP modules                                                 | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| 1                                                                     | 2                   | 3.2      |
| 2                                                                     | 14                  | 22.6     |
| 3                                                                     | 11                  | 17.7     |
| 4+                                                                    | 35                  | 56.5     |

| Different modules have identical, i.e., very similar user interface    | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| Yes                                                                   | 53                  | 85.5     |
| No                                                                    | 9                   | 14.5     |

| ERP has a central database                                            | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| Yes                                                                   | 60                  | 96.8     |
| No                                                                    | 2                   | 3.2      |

| ERP enables the integration of different modules                       | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| Yes                                                                   | 62                  | 100.0    |
| No                                                                    | 0                   | 0.0      |

| ERP enables near real-time work                                        | Number of companies | % (n=62) |
|-----------------------------------------------------------------------|---------------------|----------|
| Yes                                                                   | 54                  | 87.1     |
| No                                                                    | 8                   | 12.9     |

Source: Authors.

A quarter of companies that participated in the second round of research bought their ERP in the last 5 years, a quarter of companies have ERP which is between 5 and 10 years old, while half of the companies have ERP which is older than 10 years. Almost 3/4 of companies buy ERP as an off-the-shelf solution. More than half of companies state that their ERP has at least four modules. Most companies state that their ERP modules have the same/similar user interface with the central database and integration of different modules and enable near real-time work.
The mean grade of the usefulness of ERP is 4.16 (standard deviation = 0.51; median = 4.16; interquartile range = 0.71), while user satisfaction is 3.80 (standard deviation = 0.58; median = 3.75; interquartile range = 0.5).

The third research question (RQ3) focused on differences in ERP usefulness and ERP satisfaction influenced by enterprise size and ERP characteristics. Since it was identified that most companies have the same answer to some questions related to the characteristics of the ERP system (Table 3), a test of differences for evaluation of the usefulness and user satisfaction is made according to the size of companies, age of ERP, several modules and the information if the ERP is bought as off-the-shelf or developed as in-house solution according to users’ requirements. For this purpose, the new grouping is introduced: companies with ERP younger than 2 years and the companies with ERP which is between 2 and 5 years old are composing a single group now, and all the companies with ERP that has one, two, or three modules are part of the same group now. Evaluations of usefulness and satisfaction regarding the size of companies, together with other characteristics of ERP, are presented in Table 4.

### Table 4. Usefulness and satisfaction assessment according to companies’ size and ERP characteristics

|                        | Usefulness  | Satisfaction |
|------------------------|-------------|--------------|
| **Size of company**    |             |              |
| Medium                 | 4.14 (0.47) | 4.0 [0.63]   |
| Large                  | 4.18 (0.54) | 3.75 [0.63]  |
| p-value                | 0.735a      | 0.513c       |
| **Age of ERP (in years)** |           |              |
| > 10                   | 4.16 (0.56) | 3.75 [1.0]   |
| 5 - 10                 | 4.09 (0.43) | 4.0 [0.25]   |
| < 5                    | 4.23 (0.50) | 3.87 [0.75]  |
| p-value                | 0.758b      | 0.246d       |
| **ERP bought as an off-the-shelf solution** | | |
| Yes                    | 4.11 (0.50) | 3.87 [0.69]  |
| No                     | 4.28 (0.52) | 3.75 [0.44]  |
| p-value                | 0.251a      | 0.658c       |
| **Number of modules**  |             |              |
| -3                     | 4.02 (0.49) | 3.75 [1.0]   |
| 4+                     | 4.27 (0.50) | 4.0 [0.75]   |
| p-value                | 0.051a      | 0.036c       |

Source: Authors; Note: The results are expressed as mean (standard deviation) or median [interquartile range]; *t-test for independent samples; ANOVA; *Mann-Whitney U test; *Kruskal Wallis H test

Comparison of grades for ERP usefulness did not show significant differences regarding the size of the company, age of ERP, ERP performance, and development of ERP (ERP bought as the off-the-shelf solution). Anyhow, from average grades one can see that higher usefulness of ERP is found in larger companies, companies with younger ERP, companies with in-house ERP solutions, and companies with ERP that has four or more modules.

The significant difference in user satisfaction with ERP is found between companies with different numbers of modules in ERP. The results show that companies with an ERP consisting of four or
more modules are more satisfied with their ERP. Concerning other characteristics of ERP, there is no significant difference in the evaluation of user satisfaction. Still, the average grades show that the middle size companies, companies that buy ERP as off-the-shelf products, and companies that use ERP between 5 and 10 years are more satisfied.

Besides testing differences in the evaluation of researched dimensions (usefulness and satisfaction), testing is conducted for specific statements inside dimensions.

The analysis of differences according to the size of companies and the age of ERP did not show differences for any statement.

The analysis of differences regarding buying/development of ERP (off-the-shelf or in-house ERP) showed a significant difference for statement u2: “ERP reports significantly facilitate my daily tasks” (Mann-Whitney U = 273.000; p = 0.032). The companies with in-house ERPs that are developed according to their requirements stated that ERP reports significantly facilitate their daily business.

The analysis of differences regarding the number of ERP modules showed differences for the four statements: u1: “I use ERP reports in my daily work” (Mann-Whitney U = 316.000; p = 0.013), u2: “ERP reports significantly facilitate my daily tasks” (Mann-Whitney U = 317.500; p = 0.014), s2: “I am satisfied with functionality/features of my ERP” (Mann-Whitney U = 279.500; p = 0.001) and s3: “I am satisfied with ERP user interface” (Mann-Whitney U = 334.500; p = 0.027). The companies with ERP consisting of four or more modules use more ERP reports in their daily business and they also stated that ERP reports facilitate their business. Also, these companies are more satisfied with ERP functionality and user interface.

DISCUSSION

Conducted research shows that the significant number of companies in Bosnia and Herzegovina that responded to the research have (use) ERP systems. Most of the companies have bought ERP as the off-the-shelf solution corresponding with Thatcher, Stepina, and Boyle’s (2002) research. It is important to stress that off-the-shelf ERP solutions bring best practices of many other companies incorporated in ERP systems enabling users to have direct benefits and to learn from the experiences of other (mostly large) companies. However, one has to be aware of, usually significant, the difference in prices between off-the-shelf and customized solutions.

The results of the research show that grades obtained for usefulness and satisfaction correspond with the grades obtained in some other similar researches related to ERP usefulness (Thatcher et al., 2002; Ang & Slaughter, 2001; Herold et al., 2007; Devadoss & Pan, 2007; Hall, 2002; Jalal, 2001; Sun et al., 2009; Huy et al., 2019) and satisfaction (DeLone, & McLean, 2014; Urbach, & Müller, 2001; Petter et al., 2013; Eldrandaly et al., 2015). Namely, since ERP systems enable support for all business processes in one enterprise, ensuring their efficiency and fast running, it could have been expected that respondents found them useful. The overall grade for ERP satisfaction is above average grade in the range of 1 to 5, but it is lower than 4. It can be concluded that respondents are mostly satisfied with their ERP systems, but there is room for improvement. The question is would the average grade be higher if most of the companies used built-in (customized) ERP solutions. This query lays an interesting ground for another research.

As the results showed, the differences in usefulness related to size and other chosen characteristics of companies are not statistically significant. However, the average grades showed some differences. Namely, the large companies have a complex organizational structure, so it can be expected that they are in a greater need of ERP support for their business, so they consequently found ERP systems more useful. Furthermore, the perceived usefulness of ERP is likely higher if ERP is customized (developed according to the user’s needs), although the results did not show a significant difference (4.28 vs. 4.11). The reason may lie in the fact that most of the participating companies (71%) have off-the-shelf ERP solutions. In further research, it can be useful to equalize the number of companies with off-the-shelf and customized ERP solutions and then make the analysis.
The results of the research show that companies with a higher number of ERP modules are more satisfied with their ERP systems (4.0 vs. 3.75). Namely, one of the advantages of an ERP central database is that data is entered once, and then shared across the company. In that way, multiple entries of the same data are avoided, as well as numerous error places. Data is entered in near real-time and simultaneously visible across the company. Also, ERP systems automate most of the tedious tasks like invoicing, accounting, reporting, order entry, and similar, enabling employees (users) to focus on more complex tasks and to become more efficient and effective.

The results show that medium-size companies, companies that bought off-the-shelf ERP solutions, and companies that have been using ERP between 5 and 10 years, are more satisfied with their ERP systems. As previously explained, off-the-shelf ERP solutions incorporate best practices of many companies enabling some knowledge transfer from large to medium companies at relatively reasonable prices. Furthermore, off-the-shelf ERP systems are usually implemented by numerous companies, which means that they passed numerous testing, which made them more robust and user-friendly. Obtained results for ERP satisfaction related to the period of ERP usage are predictable. Namely, the implementation of ERP systems is complex and users need some period to adjust to ERP, so it is not realistic to expect that users will immediately perceive the benefits of their ERP system.

The results showed differences in some statements. The difference between companies that bought ERP as an off-the-shelf solution and companies that have in-house (customized) ERP exists for statement u2 (“ERP reports significantly facilitate my daily tasks”). It is expected, because off-the-shelf ERP systems have predefined reports, while companies with in-house ERP should have reports tailor-made, i.e., fully adjusted to their needs. The significant differences regarding the number of ERP modules exist for the following four statements: u1 (“I use ERP reports in my daily work”), u2 (“ERP reports significantly facilitate my daily tasks”, s2 (“I am satisfied with functionality/features of my ERP”) and s3 (“I am satisfied with ERP user interface”). Namely, as it was already explained, the higher number of modules enables users to better utilize ERP advantages related to the central database and automation of some tedious and repetitive tasks.

CONCLUSION

The results of the conducted analysis for the needs of the first research question (RQ1) show that most of the participated companies have ERP systems. The characteristics of ERP systems that were analyzed for the needs of the second research question (RQ2) show that most of the companies have bought ERP as the off-the-shelf solution.

Nevertheless, findings show that end-users in involved companies are satisfied with their ERP solutions and consider them useful for business. However, there is room for improvement, especially in the context of adapting to specific business activities/processes needs. Namely, ERP customization can increase its usefulness and, consequently, the level of user satisfaction. The results conducted for the needs of the third research question (RQ3) focused on the differences in satisfaction and usefulness of the ERP system “caused” by the size of the organization and the ERP system itself show that the higher usefulness of ERP is found for companies with an in-house ERP solution. Also, larger companies and companies with ERP that has four or more modules (business processes) are forced to use ERP in both daily work and their decision-making process if they want to improve their performance and competitiveness.

One of the practical implications of this research is a better understanding of ERP characteristics that make ERP users more satisfied with ERP solutions that can help ERP providers to develop solutions that will fulfill user needs and expectations. The importance of this research for the companies that have or plan to buy ERP is that it stressed the importance of ERP customization according to specific user needs. It means that in buying ERP, companies should look for solutions that offer a higher level of customization.
The limitations of this research are primarily related to the size and structure of the sample. Since there is no database of companies using ERP systems in Bosnia and Herzegovina, first, it was necessary to identify companies that use ERP systems. Then it was possible to explore the satisfaction and usefulness of ERP systems from the end users’ perspective in companies.

If there was such a base, the first round of research could be avoided, and the research could be done on a larger, pre-known database of companies.

Most of the participated companies bought ERP as an off-the-shelf solution. In further research, it can be useful to equalize the number of companies with off-the-shelf and customized ERP solutions and then make the analysis and conclusions.
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