# The Impact of Information Systems on Taxation: A Case of Users' Experience With an e-Recovery Information System

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**Abstract:** Although information technology's impact is evident in the everyday life of citizens and the private sector, the public sector has also gained and is gaining many benefits and could gain even more. Technology and information systems enable e-government processes to run more effectively and efficiently, changing organisations' structure, people, processes, and regulations. Information systems (IS) are especially efficient in environments where a great amount of data is available and exact calculations are needed for many different stakeholders. Such an area in the public sector is obviously the area of taxation. These systems gather a great amount of data from different sources, they need to be reliable and, since a multitude of different users within and outside of the public sector are using them, they have to be user friendly. The aim of the research was to test one such system, called e-recovery, and the influence of different factors, including the following: user training, user documentation, user support, system usability, user interface, system speed, and specific system functionalities. Through empirical quantitative research, we surveyed more than 170 executors that use the e-recovery system every day. The findings of the statistical analysis of the individual measured indices and correlations between them provide support for these indices and show that the e-recovery system was well accepted among users and found to be very useful. Users evaluated the majority of the indices as above average but stressed the issue of inadequate training. Users do acknowledge that their work is faster due to e-recovery system use, but their motivation for work is not affected. The imperfections stressed most often were the occasional system failures, upgrade delays, and connection interruptions, since users access the system through the internet.

**Keywords:** e-government, government to government, information systems assessment, e-recovery, user satisfaction, tax recovery

## 1. Introduction

Information technology (IT) is ever increasingly involved in the functioning of public administration today. So called "new styles" of policy and regulation implement cost effectiveness, co-operation, a bottom-up approach, flexibility, dynamism, responsive regulation, etc., often achievable by the implementation of IT. Information systems (IS) enable better work processes within and between governmental institutions as well as with external stakeholders, such as private sector organisations and citizens. Especially complex systems are used within compound activities, horizontally linking many governmental institutions, which are aimed at increasing efficiency and flexibility. Therefore, IT can radically improve the efficiency and effectiveness of public services.

Users represent one of the more important factors regarding the success of information system implementations. Not only must the systems be constructed according to their needs and the demands of the processes they perform, but these systems must be easy to use, include all the needed functionalities, and be backed up by help desk support and training. Therefore, our research focused on the influence of user training, user documentation, user support, and system usability, including user interface, system speed, and specific system functionalities.

The main purpose of this paper is to test whether the use of IS improves tax recovery procedures in Slovenia from an IS-user point of view. In the Slovenian public sector, IT solutions were developed for all three organisations included in the recovery procedure (i.e. the tax administration, the customs administration, and the courts). We tried to evaluate whether the IS improved the procedure as well as the efficiency, effectiveness, and user satisfaction. Therefore, we analysed the opinions of more than 74 executors who are users of the e-recovery system. The paper is structured as follows: following the introduction, the importance of IT in the public administration is discussed, followed by a presentation of the organisation of the recovery system in Slovenia. The next section presents an evaluation of e-recovery in Slovenia through the statistics of

the organisations and through empirical research on users and an analysis of the data gathered by the survey. A discussion with conclusions is presented at the end.

## 2. The importance of IT in public administration

Over the last decade, public administration around the world has been following the goal of increasing its efficiency and flexibility by using IT. This has been inspired by the success of IT in other environments, especially in the private sector. Various authors have demonstrated that IT enables improved quality and performance of services (easier, faster, better) (Gupta et al., 2008), improved quality and increased operational efficiency, reduced costs, and increased productivity (Gil-García and Pardo, 2005). But Wang and Liao (2008) stress that throughout the various efforts the focus must be multidimensional and interdependent. While the term "information technology in government" goes back at least to the 1970s, the term e-government emerged in the late 1990s with the internet boom (Grönlund and Horan, 2004). It does not rely only on the internet, but also includes other technologies and aspects. Throughout the e-government domain a classification of areas of interactions with citizens (G2C), businesses (G2B), internal employees (G2E), and other institutional government organisations (G2G) emerged and remain. In the case of G2G, which is the focus of this paper, integrated information systems are needed in order to gather, transfer, process, and store internal data, which is the foundation for the further elaboration of electronic government services offered to external users, namely citizens, the private sector, and other governmental organisations (Baležentis and Paražinskaitė, 2012).

We agree with Au and Cheng (2012) that ensuring that end users (in the case of G2G these are employees) are able and willing to use advanced information systems is critical for the organisation to gain operational efficiency and user satisfaction. Many researchers have recognised user satisfaction as a critical determinant of the success of IS. In their work DeLone and McLean (2003) proposed that higher levels of individual satisfaction with IS usage will lead to higher levels of intention to use, which will subsequently affect the use of the system. Hsieh et al. (2012) proved that employees' overall user satisfaction with their mandated use of IS has a positive impact on employee service quality. Thus IS performance, the organisational environment, and the people who use the IS are crucial. Iivari (2005) also showed that IS performance has a positive relationship with the satisfaction of the IS user. Considering user knowledge issues, Mahmood et al. (2000) noticed that end users may lack knowledge of software and hardware; thus, adequate support is required in order to realise productivity gains. Even if some knowledge is gained before using the IS, it is important that more is available subsequently through a help desk or support service. Chawner (2012) found that the extent to which the developers and support staff were perceived as responding quickly and appropriately, as well as how easy they were to understand, have a direct influence on end-user satisfaction with IS.

### 2.1 E-taxation as the field of public administration with great "e-" potential

Today, taxation-related services are among the most developed e-government services all over the world. At the same time, e-taxation services are among those most used by clients in many countries, sometimes even because clients are forced to use them. Even the eEurope measurement reports indicate that year after year the services included in the income-generating cluster (income and corporate tax, social contributions for employees, VAT, customs declarations) were and remain the most developed. When we explain e-taxation, we usually refer to on-line filing and assessment of tax returns, enabling electronic payment of taxes, sharing information on tax assessment between different government departments, and web-based portals for educating taxpayers on taxation issues. Use of e-taxation systems by the tax administration has been shown to have several advantages (Jiménez et al., 2013):

- it provides support, automation, workflow management, and authorisation management to tax administration functions;
- it provides information, education, and support to taxpayers and facilitates compliance and administration;
- a compliance performance system deploys risk-based procedures to detect and deter noncompliance;
- a management information system facilitates the collection and dissemination of performance information to staff and management.

Other important advantages are in reducing different costs connected to tax processing, i.e. costs associated with the procurement, printing, postage, storage, and distributing printed forms.

With the rapid development of e-commerce, e-taxation is faced with new or additional challenges. According to Onuiri et al. (2015), some of the challenges are connected to the prompt payment of taxes and effective reduction of tax evasion. Therefore, convenient payment methods and proper record keeping systems should be developed. That leads to improved productivity, database creation and records management, the simplification of operations, and reduced processing time. On the other hand, e-commerce forces tax administrations to adapt to new methods of tax collection and determining the domicile of taxpayers (Vanhorick, 2015).

The Slovenian government introduced a special e-taxation portal soon after the introduction of the main e-government portal. Slovenia's e-taxation portal was established at the end of 2003. Initially, taxpayers could find and print tax forms from the e-taxation portal. Subsequently, form completion was possible, such that taxpayers could complete forms and submit them to the tax administration. As of 2015, all communication with business taxpayers is carried out through the e-taxation system. Several small surveys among tax administrators were carried out in Slovenia before its establishment (by students for their graduation thesis or by journalists), and we can conclude from all of them that civil servants find e-taxation to entail an improvement in their working conditions, since information is available more quickly, less importing of different data is necessary, a finding of logical incorrectness is available promptly, archiving documents is easier and requires less space, processing of the calculation of tax obligations is much shorter, etc. One of the important advantages of e-taxation is also that it is a better analytical tool for preventing evasion. As explained below, the e-recovery system is part of the e-taxation system of the Slovenian tax administration, and the advantages are further analysed below.

### 2.2 Information system aspects for increased process efficiency and user satisfaction

User satisfaction is one of the most important determinants of the success of an information system (Aggelidis and Chatzoglou, 2012). Therefore, orientation towards users' needs and expectations is a mandatory part of system development and the evaluation of user satisfaction is a mandatory phase after the implementation of the information system. Many other researchers have also recognised user satisfaction as a critical determinant of the success of a given IS and have developed different theories and models to test and prove this. Among them, the model of DeLone and McLean (1992; 2003) is very well known and incorporates information quality, system quality, system use, and user satisfaction. This paper focuses on the system quality of information systems, which includes indices of: ease of use, ease of learning, efficiency, integration, and system features, defined by Gable et al. as "system quality" (2008). We also focus on an information quality index of usability and an individual-impact index of motivation. According to Aggelidis and Chatzoglou (2012), user satisfaction is a widely used measure of information system success and is linked to the information system aspect. A number of research studies in recent years have focused on the evaluation of end-user satisfaction and its parameters after a given information system has been implemented in the organisation for a while. Bokhari (2005) found a positive correlation between system usage and user satisfaction, stressing the complex nature of evaluation in terms of success.

While system usage is defined by Trice and Treacy (1988, p. 33) as "either the amount of effort expended interacting with an information system or, less frequently, as the number of reports or other information products generated by the information system per unit time," it points to the system speed and effectiveness. The speed of the system, which enables users to conduct work processes quickly, is also a part of the SITEQUAL model (Yoo and Donthu, 2001). These authors proved that processing speed is a significant factor influencing user satisfaction with online applications. In research on the e-filing system of the Malaysian tax administration, the responsiveness and speed of the system quality parameter were positively correlated with user satisfaction as well (Islam et al., 2012). Therefore, we included an index of "the ability to work fast with the IS" in our research.

Information system functionalities, set up according to users' needs, are a very important factor in every information system development. Functionality, as a system's capability, is expected to give users what they want and also to help the organisation meet its strategic objectives (Lu et al., 2012). Not only do they enable users to perform their work tasks, but if they meet the needs of the users they also reinforce their satisfaction with the system itself (Cyert et al., 1963a). These functionalities are usually known in advance, since systems are defined and set up according to the processes and often based on regulations, as is common in the e-government environment. But developers should be aware that system functionalities must be explained to

users and made easy to use (through training and other means), otherwise users will have difficulties using them (Khajouei et al., 2011; Lee and Xia, 2011). We wanted to test the impact of the functionalities implemented in e-recovery systems and therefore included adequate indices in the research.

Building user knowledge can be a part of the introductory phase, when the new information system is introduced to users, but is also necessarily always present when users use the IS. User knowledge of the IS can be gained through training, IS documentation, and support. Such support can be provided through written or spoken communication and IT can have a very positive impact within these processes (video lectures, functionality simulations, synchronous and asynchronous online communication, screen sharing, etc.). Sharma and Yutton (2007) claim that user training is an important external factor that influences user perception of new technology and users' actual first-hand use can be a learning process and an invaluable source when re-evaluating the IS (Lee and Xia, 2011). Kim et al. (2012) found that user training was the second highest positive response as regards overall IS satisfaction. Although user documentation had a bigger focus of research in the late 1990s, the researchers of that time stressed that user satisfaction of a system is strongly influenced by the documentation thereof (Gemoets and Mahmood, 1990). Even the more recent research results of Aggelidis and Chatzoglou (2012) underline the need to design highly effective user documentation and provide continuing training to end users. To meet the expectations of users and enable them to use the IS and the updates thereof to maximise their job performance, adequate support over time is also needed (Ajami and Mohammadi-Bertiani, 2012). Au et al. (2002) define user support with components such as promptness, reliability, responsiveness, technical competence, the attitude of the system support personnel, the ability to keep accurate records, and the provision of training courses. User support can be offered through insourcing and outsourcing, but in both cases it has a significant influence on the system quality perception of users and their satisfaction (Aggelidis and Chatzoglou, 2012). We therefore included indices of training, documentation, and support in our research.

An important component of system quality is its efficiency. The system must be useful to the user in performing tasks, easy to use, and enable the user to work with the system in a motivated way. Ajami and Mohammadi-Bertiani (2012) state that if users are not satisfied with the IS, they will not use it, or they will not use it correctly and efficiently. System usefulness was found to be the second highest IS satisfaction indicator, following information reliability as the highest (Kim et al., 2012). Teo (2001) found that if the IT is easy to use, it requires less effort on the part of users, thereby increasing the likelihood of its acceptance and motivated usage. In research on an e-filing system, Ambali (2009) stressed that ease of use of e-filing is one of the key determinants of the level of retention of users. Therefore, these factors were of interest to us in our analysis of the Slovenian e-recovery system.

## 3. The organisation of recovery processes and recovery systems in Slovenia

When debtors do not settle their liabilities to creditors, execution is carried out by means of a compulsory settlement of liabilities. In Slovenia, such execution takes the form of either an administrative execution, a tax execution, or a court execution, depending on which authority conducts it and which procedure is applied. Tax execution is regulated by the Tax Procedure Act (Official Gazette of the RS, No. 13/2011) and conducted by the tax or customs authority and from 2015 by the Financial Administration. In accordance with the Act, administrative execution comprises the collection of taxes and non-tax receivables under the competences specified by the Act. Since an administrative execution is primarily used to collect taxes and other public duties under the rules specified in the Tax Procedure Act, this type of execution is also referred to as a tax execution. Court executions fall within the competence of courts that conduct such executions to collect non-tax (civil) receivables owed to various creditors. In order to collect the receivables falling under the competence of the customs service, an execution regarding a debtor's real property, equity stake, or property rights is conducted through the court (Vasle et al., 2011).

As mentioned above, tax execution was performed by the tax authorities, specifically by two authorities, until 2014: the Tax Administration of the Republic of Slovenia (hereinafter: the TARS) and the Customs Administration of the Republic of Slovenia (hereinafter: the CARS). In 2012, the customs service took over the collection of fines and other non-tax receivables imposed by other non-tax authorities in minor offence proceedings. These involve more than 600 proposers, e.g. the police, administrative units of the state, inspections, social work centres, the Chamber of Craft and Small Business of Slovenia, the Health Insurance Institute of Slovenia, ministries, etc. It is the centralisation of the execution of public non-tax receivables that

led to IT support becoming indispensable. Since 2012 the CARS has been conducting all execution proceedings through the software application *e-Izvršbe* (hereinafter referred to as *e-Executions*).

Once the CARS assumed performance of non-tax executions, the TARS only collected tax revenues. The TARS also wanted to simplify and harmonise the procedures for collecting tax revenues, but it was among the last to introduce the use of IT in procedures. In 2011 it redesigned the information system, which resulted in a number of advantages in tax execution as well, as a uniform record was established enabling the comprehensive treatment of the debtor at a single location, covering all receivables and liabilities arising in the territory of the Republic of Slovenia, and thus led to a smaller number of tax execution proceedings and lower costs for the debtor and the Tax Administration of the Republic of Slovenia. System upgrades were also made, meaning that new tax execution processes were set up and existing ones optimised and transferred to the new production environment. A solution was prepared for the electronic exchange of writs of execution with banks.

The underlying law regulating execution proceedings for the settlement of a debtor's debt to the creditor is the Enforcement and Securing of Civil Claims Act (Official Gazette of the RS, No. 3/07). The Act was adopted in 1998, but it has evolved over the years. The electronic procedure was introduced based on an amendment to the Act at the end of 2006, while its 2010 amendment stipulated that electronic applications had to be submitted once the e-Executions system was established. Execution proceedings in court have been a problem in Slovenia for a long time, since they stretched out over several months and the backlogs were extensive. As a result, creditors were very poorly collateralised, because debtors managed to transfer their assets to other persons during the proceedings and companies went bankrupt. Until 2008, it was only possible to file for execution on paper, using prescribed forms submitted to the competent court in the place of the residence/registered office of the debtor. Once the Central Department for Authentic Documents (COVL) was established there was a shift in two directions. The Department began accepting applications for execution for all of Slovenia, meaning that applications no longer needed to be filed with the various specific courts. Moreover, an electronic procedure for submitting an application for execution was put in place in 2008. The entire procedure was electronic until the issued writ of execution became final. The COVL portal was operating from 2008 until the end of February 2012, when it was transferred to the *e-Sodstvo* (e-Judiciary) portal using the e-Execution sub-portal for execution proceedings.

## 4. E-recovery in Slovenia: a case of an efficient information system

Slovenia opened the doors wide to e-government in the year 2000 by adopting the e-commerce law and quite successfully followed the path of the relevant strategies and action plans over the following years. One of the most important areas was no doubt the area of e-taxation. As mentioned above, an electronic system was introduced for both tax execution and court execution proceedings. In all of these affected authorities the transition to IT is evident in the efficiency of executions, as the number of cases assigned to them increased and the number of complaints by debtors decreased, because records are more transparent. In addition, writs of execution have been expedited, and the number of cases resolved is higher, thanks to the faster proceedings.

The effects noted in the TARS are more difficult to evaluate, because the transition to the new information system has been taking place only in recent years and in several phases, the last one as recent as 2013. The effects of this redesign should have been evident in 2014, but on August 2014 the TARS and CARS were joined into one organisation (the Financial Administration of the Republic of the Slovenia – FARS) and this probably influenced the improvement. The TARS and FARS together increased the number of tax claims and the CARS decreased the number of tax claims at the same time. If we consider the claims from both institutions in 2013 and make a comparison to those in 2014, we can determine that the total number of claims decreased by 2.3% and claimed debt by 7.7%. During the transition to the new information environment the TARS even slowed the pace of issuing writs of execution, as it had to transfer data and re-arrange bookkeeping records as well as establish connections between the tax executions issued under the old system and the receivables posted under the new system. Owing to the high risks related to starting the mass implementation of tax executions, the TARS started issuing writs of tax execution in a limited scope first and then, under the necessary supervision, gradually increased the number of writs of tax execution issued. Moreover, within the process of re-engineering the information system in 2011, part of its competences were transferred to the CARS. Data on the volume and reduced pace of transition is presented in the following table.

**Table 1**: The number and volume of tax executions by the TARS

| Year | The number of telephone calls, reminders sent, and writs of execution issued | Claimed debt (in EUR million) |
|---|---|---|
| 2009 | 568,985 | 1798.8 |
| 2010 | 587,098 | 1995.5 |
| 2011 | 443,626 (of which 128,623 non-tax) | 1339.7 |
| 2012 | 474,810 | 1736.1 |
| 2013 | 633,256 | 1369.4 |
| 2014 (I-VII) | 320,998 | 779.9 |
| 2014* (VIII-XII) | 321,813 (tax) + 155,149 (non-tax) | 479.8 (tax) + 49.7 (non-tax) |

**The data are for TARS and CARS together. Source: Reports on the activities of the TARS for 2009–2014 and the FURS, 2015.*

As mentioned above, until 2012 the Customs Administration of the Republic of Slovenia (CARS) had gradually assumed a certain range of tasks from the Tax Administration of the Republic of Slovenia in the area of tax enforcement regarding the non-tax claims of other state authorities. In parallel with the acquisition of this extensive range of claims, the E-recovery information system came to life. The CARS especially pursued performance objectives when developing and building the E-recovery system. A complex and transparent information system with a high level of automatisation and access to all the information necessary for work in just one central application was established. The E-recovery system is used within a special administrative procedure for the financial recovery of debt in the area of customs, excise duties, environmental charges, administrative charges, fines from minor offence proceedings, and other non-tax claims. E-recovery is a centralised IS and accessible through a web-based interface. Integration with other external systems is also possible, enabling organisations to use their own information systems and seamlessly exchange data with the CARS via its web-based service. The biggest users of the E-recovery system are the police, local government inspection services, the courts, and traffic wardens. But the most regular users are definitely debt collectors (approximately 200 of them), which are obliged to use the system and also have mandatory training in use of the application. The reports on the activities of the CARS regarding execution show that in a very short period of time the authority received a significant number of new execution cases. As execution proceedings were assumed by the TARS and the COVL in 2012, the number of allocated cases increased seven-fold, since it also included other cases that had already been in the process of resolution and had been assigned by other authorities. In 2013 this figure doubled, even though no new competences were granted. The introduction of the e-Executions system was therefore urgent. However, as even more cases have been assigned to the CARS related to other receivables, the dynamics of tax executions, i.e. referring to taxes that are within the competence of the CARS, began to slow. In such cases, the activities involved in tax execution scaled down as a result of the introduced electronic system.

**Table 2:** The number and scope of tax executions by the CARS

| Year | Tax execution | | Other non-tax executions | |
|---|---|---|---|---|
| | Number of writs of execution | Value (in EUR millions) | Number of writs of execution | Value (in EUR millions) |
| 2009 | | | 10,050 | |
| 2010 | 1433 | 2.5 | 46,178 | |
| 2011 | 1442 | 7.7 | 24,367 | |
| 2012 | 944 | 2.7 | 167,855 | 91.6 |
| 2013 | 1270 | 5.6 | 332,889 | 100.1 |
| 2014 (I-VII) | 582 | 1.1 | 146,630 | 50.7 |

*Source: Reports on the activities of the CARS for 2009–2014.*

The information system has already improved the success of the collection of both tax and non-tax receivables. The year 2013 was successful. The system was already fully operational then, and 62% of tax execution cases were resolved and 32% of receivables collected. In comparison with 2012, the success rate nearly doubled, as 40% of cases were resolved and 10% of receivables collected in that year. In 2014 the percentages were still high (58% and 27%, respectively) and above the situation in 2012. An even greater effect is visible in non-tax executions, as the rate of cases resolved more than doubled, and even tripled in some customs offices (e.g. from 14% to 51% and from 25% to 75%). Furthermore, the rate of debt collection also rose, doubling on average in 2013 and in one customs office increased from 11% in 2012 to 52% in 2013.

The introduction of electronic court execution also increased the efficiency of that procedure. A year after the introduction of execution proceedings via the COVL, the caseload rose by 60%, while complaints by debtors decreased. On the other hand, the share of unresolved cases decreased by more than 10% (e.g. company executions – executory titles) to a little more than 12% in 2014. The deadline for issuing writs of execution decreased, as in more than 80% of cases a decision was issued within 5 days, while the number of applications received grew following the introduction of the e-Executions system, i.e. from 160,000 in 2008 to 218,789 in 2011; since 2012 the number has been decreasing, namely to 199,373 applications received in 2014 (Ministry of Justice, 2015).

### 4.1 Empirical research of the users of the e-recovery system – methodology and data analysis

In order to additionally focus on the users of the e-recovery information system, empirical research was conducted together with the CARS to test user satisfaction with the systems and supported activities. This system is used by more than 600 institutions with more than 1500 users and more than 170 external executors. The focus group of our research consisted of external executors (enforcement agents), which according to their powers under the law use the e-recovery information system for activities connected to the enforcement of non-tax claims for other state authorities. The empirical research was conducted by means of an online questionnaire. The invitation to complete the online questionnaire was submitted by e-mail to the above-mentioned external executors. After 14 days, 74 questionnaires had been received (response rate: 40%). The questionnaire contained closed-ended multiple choice questions using a standard 6-, 7-, or 8-point Likert scale, open-ended questions (focused on suggestions for improving the e-recovery information system) and demographic questions (focused on gender, age, years of work experience with the e-recovery system, frequency of use of the e-recovery system, and years of work experience in the area of enforcement).

### 4.2 Results

The first basic analysis was carried out using the IBM® SPSS® tool to compile basic statistical data. The mean values show that all the indices show average values above the middle point of usefulness or satisfaction with the e-recovery system. The values of skewness and kurtosis of the indices show a reasonable normality of distribution.

**Table 3**: Basic statistical values of the measured indices

| 5. | Index | Scale | Mean | Std. dev. | Skew. | Kurt |
|---|---|---|---|---|---|---|
| PU | How useful is the e-recovery system in your work? | 1-not useful at all ... 5-very useful | 4.15 | .855 | -.699* | -.279* |
| PF | With the e-recovery system my work is faster. | 1-completely untrue … 6-completely true | 4.84 | .951 | -1.138 | 2.983* |
| PM | The e-recovery system increases my work motivation. | 1-completely untrue … 6-completely true | 3.88 | 1.452 | -.472* | -.613* |
| EL | How hard was it to learn to use the e-recovery system? | 1-very hard … 6-very easy | 4.16 | .794 | -.133* | -.148* |
| EU | How easy-to-use is the e-recovery system? | 1-very complicated … 6-very easy | 4.14 | .926 | -.063* | .004* |
| UT | How useful was the training for the e-recovery system? | 1-very useless … 5-very useful | 3.27 | .910 | .078* | -.860* |
| UM | How useful is the user manual? | 1-very useless … 6-very useful | 4.12 | .832 | -.539* | 1.076* |
| US | How good is the user support? | 1-very bad … 6-very good | 3.84 | 1.027 | -1.310 | 1.814* |
| F1 | How useful is the *reminders* functionality? | 1-very useless … 5-very useful | 3.80 | .965 | -.142* | -1.089* |
| F2 | How useful is the *dossiers* functionality? | 1-very useless … 5-very useful | 4.04 | .898 | -.547* | -.590* |
| F3 | How useful is the *reports* functionality? | 1-very useless … 5-very useful | 3.58 | .993 | -.619* | .277* |
| F4 | How useful is the *interest calculation* functionality? | 1-very useless … 5-very useful | 4.22 | .815 | -.577* | -.791* |

| 5. | Index | Scale | Mean | Std. dev. | Skew. | Kurt |
|---|---|---|---|---|---|---|
| F5 | How useful is the *integration with other systems* functionality? | 1-very useless … 5-very useful | 3.82 | 1.077 | -.585* | -.358* |

**within the normal limits*

From the results, we can suggest that the e-recovery system does enable enforcement agents to work quickly (the highest mean of all indices), but it does not affect their motivation to a great extent. High means (Figure 1) are also detected when considering ease of learning to use the system, ease of using it daily, and the usefulness of the system at work. The lowest mean represented a low satisfaction rate with the training. Among the different functionalities of the e-recovery systems, the highest mean was detected for the *interest calculation* functionality and the lowest for *reports*.

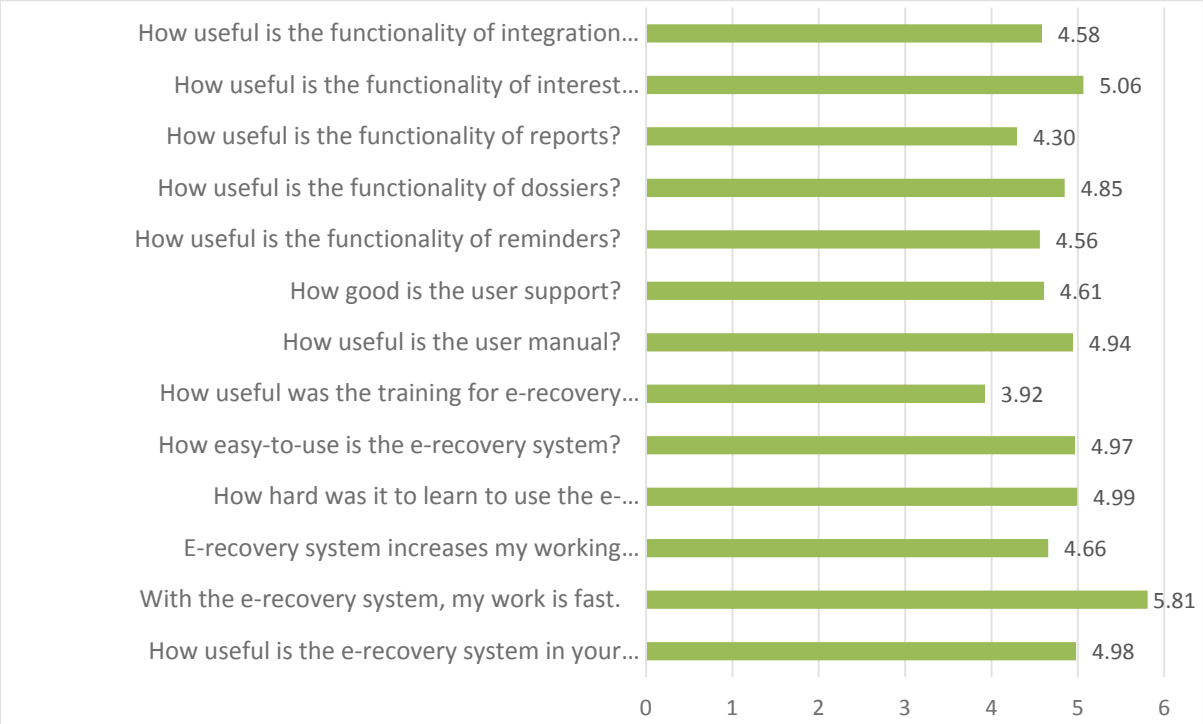


**Figure 1**: Mean values for survey indices

Additional statistical analyses were conducted to test the correlation between these indices. The results show significant correlations between indices of functionalities, indicating that general satisfaction with the systems does influence all functionalities at the same time and similarly. Although evaluations of different functionalities gave different average scores, the influence of general user satisfaction is detected in this way. Another interesting issue is the non-correlation of the user support index with any other index, indicating that user support is a strong but individual aspect of the IS user perspective. Other correlations indicate the following (Table 4):

- a strong correlation ($r$ = .407, $n$ = 74, $p$ < .001) between easiness to use the system and the usefulness of the system;
- a strong correlation between easiness to learn and easiness to use the system ($r$ = .640, $n$ = 74, $p$ < .001);
- a strong correlation between easiness to use the system and the usefulness of user training ($r$ = .501, $n$ = 74, $p$ < .001) and the user manual ($r$ = .507, $n$ = 74, $p$ < .001);
- a strong correlation between the increase in work motivation due to the speed of work as a result of working with the system ($r$ = .432, $n$ = 74, $p$ < .001);
- a strong correlation between work motivation and the usefulness of the user training ($r$ = .404, $n$ = 74, $p$ < .001) and the user manual ($r$ = .413, $n$ = 74, $p$ < .001);
- a strong correlation between the usefulness of training and the usefulness of the system

functionalities (see Table 4 below).

**Table 4**: Correlation of indices

| | | PU | PF | PM | EL | EU | UT | UM | US | F1 | F2 | F3 | F4 | F5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU | Pearson Correlation | 1 | .300** | .379** | .166 | .407** | .398** | .261* | .109 | .253* | .295* | .268* | .150 | .252* |
| | Sig. (2-tailed) | | .010 | .001 | .158 | .000 | .003 | .030 | .393 | .030 | .011 | .021 | .203 | .030 |
| PF | Pearson Correlation | .300** | 1 | .432** | .289* | .305** | .286* | .184 | .014 | .426** | .441** | .261* | .169 | .373** |
| | Sig. (2-tailed) | .010 | | .000 | .012 | .008 | .040 | .130 | .912 | .000 | .000 | .025 | .149 | .001 |
| PM | Pearson Correlation | .379** | .432** | 1 | .267* | .359** | .404** | .413** | .063 | .364** | .172 | .287* | .011 | .231* |
| | Sig. (2-tailed) | .001 | .000 | | .022 | .002 | .003 | .000 | .618 | .001 | .143 | .013 | .926 | .047 |
| EL | Pearson Correlation | .166 | .289* | .267* | 1 | .640** | .042 | .199 | -.100 | .186 | .144 | .191 | -.034 | .018 |
| | Sig. (2-tailed) | .158 | .012 | .022 | | .000 | .769 | .102 | .432 | .112 | .220 | .102 | .775 | .881 |
| EU | Pearson Correlation | .407** | .305** | .359** | .640** | 1 | .501** | .507** | -.059 | .399** | .388** | .375** | .233* | .257* |
| | Sig. (2-tailed) | .000 | .008 | .002 | .000 | | .000 | .000 | .644 | .000 | .001 | .001 | .046 | .027 |
| UT | Pearson Correlation | .398** | .286* | .404** | .042 | .501** | 1 | .258 | .137 | .457** | .417** | .504** | .205 | .487** |
| | Sig. (2-tailed) | .003 | .040 | .003 | .769 | .000 | | .067 | .343 | .001 | .002 | .000 | .145 | .000 |
| UM | Pearson Correlation | .261* | .184 | .413** | .199 | .507** | .258 | 1 | .225 | .294* | .202 | .303* | .089 | .163 |
| | Sig. (2-tailed) | .030 | .130 | .000 | .102 | .000 | .067 | | .076 | .014 | .096 | .011 | .468 | .182 |
| US | Pearson Correlation | .109 | .014 | .063 | -.100 | -.059 | .137 | .225 | 1 | .213 | .056 | .139 | .050 | .056 |
| | Sig. (2-tailed) | .393 | .912 | .618 | .432 | .644 | .343 | .076 | | .092 | .661 | .275 | .696 | .662 |
| F1 | Pearson Correlation | .253* | .426** | .364** | .186 | .399** | .457** | .294* | .213 | 1 | .579** | .696** | .474** | .572** |
| | Sig. (2-tailed) | .030 | .000 | .001 | .112 | .000 | .001 | .014 | .092 | | .000 | .000 | .000 | .000 |
| F2 | Pearson Correlation | .295* | .441** | .172 | .144 | .388** | .417** | .202 | .056 | .579** | 1 | .618** | .456** | .588** |
| | Sig. (2-tailed) | .011 | .000 | .143 | .220 | .001 | .002 | .096 | .661 | .000 | | .000 | .000 | .000 |
| F3 | Pearson Correlation | .268* | .261* | .287* | .191 | .375** | .504** | .303* | .139 | .696** | .618** | 1 | .316** | .532** |
| | Sig. (2-tailed) | .021 | .025 | .013 | .102 | .001 | .000 | .011 | .275 | .000 | .000 | | .006 | .000 |
| F4 | Pearson Correlation | .150 | .169 | .011 | -.034 | .233* | .205 | .089 | .050 | .474** | .456** | .316** | 1 | .403** |
| | Sig. (2-tailed) | .203 | .149 | .926 | .775 | .046 | .145 | .468 | .696 | .000 | .000 | .006 | | .000 |
| F5 | Pearson Correlation | .252* | .373** | .231* | .018 | .257* | .487** | .163 | .056 | .572** | .588** | .532** | .403** | 1 |
| | Sig. (2-tailed) | .030 | .001 | .047 | .881 | .027 | .000 | .182 | .662 | .000 | .000 | .000 | .000 | |

**. The correlation is significant at the 0.01 level (2-tailed).

*. The correlation is significant at the 0.05 level (2-tailed).

The results of the T-test statistics showed that none of the indices is statistically different considering age, but that less experienced users (work experience in the field of recovery is less then a year) rated the e-recovery system as less easy to use compared to more experienced users, $t(72) = -2.213$, $p = 0.030$. With regard to the gender differences, male users (N=56) rated the e-recovery system functionalities as less useful on average than did female users (N=18).

## 6. Discussion and conclusion

The importance of IT solutions for better performance of public administration is widely acknowledged in today's world. Even e-government has outgrown its childhood and is a crucial factory in ensuring the efficiency and effectiveness of public administration. Nevertheless, the evaluation of the efficiency of the e-recovery system in Slovenia presented in this paper showed that the introduction of an IT solution slowed down the process in the organisations at first, but subsequently improved it considerably. Although the improvements in the process were related to the increase in cases resolved and debt collected, our focus was directed at the users of this system with regard to their satisfaction with the system. The study evaluated and tested indices for IS evaluation, focusing on IS users and narrowing down the area to the e-government field of recovery, although the results could apply more broadly.

Ambali (2009) claimed that in this fast moving world, fast services should be the main priorities of every government in the world. We can confirm this statement with the results, which show that the participants in our research evaluated the speed of the e-recovery system with the highest average score. The analysed system of e-recovery proved to be useful to users, and impacted the speed of their work and the efficiency of recovery processes. Even in open-ended answers (general comments), users stressed the importance of fast and responsive functioning and reliability (no crashing of the IS). Since IS success is strongly correlated with user satisfaction (Aggelidis and Chatzoglou, 2012), and user satisfaction with system usage (Rahat H. Bokhari, 2005), responsive functioning and reliability are crucial. Adequate IS functionalities not only increase user satisfaction with the system (Cyert et al., 1963b), but also enable users and organisations to achieve their goals. Our results stress the importance of end-user inclusion in the phase of the planning and development of the given IS. The results show high user satisfaction with e-recovery functionalities, although users' open-ended answers indicate that there are possibilities to improve such functionalities. These results show that users do evaluate system functionalities, and that their opinion could be meaningful information for the developers of the system and should be taken into account.

Since only a few future users of the IS can participate in the developmental phase, training and persuasive communication are the next important phase, otherwise difficulties may arise (Lee and Xia, 2011). For many users, training is the "first impression" and its impact on later perception of the IS is significant. Only well-trained users who understand the abilities of the system can use it efficiently. The results show that training should be a scheduled, continuous activity, termed *continuing training* by Aggelidis and Chatzgolou (2012). In such a manner, it enables users who start working with the IS later (due to a new job, a new work task) to prepare, or for existing users to review, their knowledge or extend it (due to IS upgrades or added functionalities). In the case of the described e-recovery system, users rated the training very badly and at the same time stressed the importance of it, since they are often confronted with "learning by doing", using manuals, and unproductively spending a great deal of time on such. Continuing, reliable, competent, and responsive support was also detected in the results, although the high standard deviation shows a wide spectrum of user satisfaction. With modern technology or even cheap outsourcing, these factor should not degrade the overall impression of the IS by users.

The research focused on a small group of IS users and more empirical work is needed to validate the results in the wider field. The selected indices gave enough information for management to upgrade and improve the system and adjust the training and support processes, but these indices should be tested also with other e-government systems.

Management and IT departments can benefit from the findings of this research by using the indices for their IS and applying the results. The findings can already provide directions and areas where more focus should be devoted in cases involving evaluations of existing IS or the development of new information systems in the public sector.

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