

Financial Information Systems in Governments: Is it accepted by Public Employees?

Dua'a Sawalha¹ and Emad Abu-Shanab²

¹Ministry of Finance, Jordan

²Yarmouk University, Jordan

Abstract This study explored the factors that affect employees' acceptance of one of the important e-government systems in Jordan and plays a pivotal role in Jordanian e-government success. The study utilized the Technology Acceptance Model with an extension of two additional independent variables. The study indicated that Jordanians perceived all proposed constructs highly, which indicates the importance of all proposed predictors: usefulness, ease of use, social influence, and risk. On the other hand, multiple regression results identified two factors affecting three Jordanian governmental agencies employees' intentions to use GFMS simultaneously, which are social influence and perceived usefulness.

Keywords: E-government, Government-to-Government, governmental financial system, Technology Acceptance, Model, Government Financial Management Information System, employee's Technology Acceptance.

Received August 11, 2014; Accepted October 27, 2014

1. Introduction

Jordan has paced few steps toward applying e-government. From its initiation in 2001 till now, Jordan's e-government project is still not fully implemented in terms of its financial arrangements [30]. For example, Jordan ranked as "Low" in its e-payment systems [17], due to its financial system. Government Financial Management Information System (GFMS) provides an integrated system in the e-government infrastructure [39][25]. GFMS is still not mature enough to handle all the public financial transactions. The success of GFMS in Jordan is a premise for Jordan's e-government success.

User Acceptance is considered one of the critical success factors for e-government systems implementation [12]. Furthermore, user acceptance has been viewed as the pivotal factor in determining the success or failure of any information system project [19]. The adoption of GFMS would result into a success in GFMS implementation and then a success in implementing Jordan e-government. A common practice in measuring the success of technology is its adoption perceptions by users of the technology or system. GFMS acceptance would be explored in this research paper by employing an extended Technology Acceptance Model (TAM) to examine many factors that may predict such acceptance of GFMS [20].

Within the e-government community, research related to developing countries is still rare [48]. This research aims at extending our knowledge of the factors influencing the acceptance of new Governmental Financial Information System (GFMS) implemented in Jordan, a developing country in the

Middle East. The sample used in this research utilized public employees who are considered the end users of the system.

The extended TAM used is constructed from the following attributes: Behavioral Intention (BI), Perceived Usefulness (PU), perceived risk (PR) of using the system, social influence (SI) and Perceived Ease of Use (PEOU). A survey addressing the aforementioned attributes was disseminated among 100 employees from Jordan Ministry of Finance (MoF), Jordan Ministry of Education (MoE) and Jordan General Budget Department (GBD). The results of 96 usable surveys were utilized in the analysis. The purpose of this paper is to investigate GFMS adoption, using extended TAM, by a sample of its end users. The sample utilized three ministries that use the GFMS in Jordan.

The paper is organized into five sections. The second section provides a literature review of Information Systems' adoption, the related work to this study and a summary about GFMS. The third section discusses the research methodology. In the fourth section, the researchers provide statistical analyses of the results and elaboration. Finally, section five presents the conclusion and future perspectives of this work.

2. Literature Review

By reviewing the previous work on the e-government systems acceptance and adoption many literature reviews have been conducted in this area. Susanto conducted a literature review on e-government adoption and concluded that most e-government

studies are concerned with government related issues like strategies, policy, challenges, technical issues, and evaluation of the usability of e-government. The author proclaimed that the topic of e-government adoption is still new and emerging. Moreover, Susanto categorized the factors used in e-government adoption research into the following: demographic characteristics of the users, the impact of culture, and the psychological factors for using e-government services. He found that the primary determinants of user's acceptance of e-government services are user's attitude toward using e-government services and perception [43].

The issue of e-government adoption from an employee's perspective in the literature is relatively lacking theoretical development and rigor. Furthermore, many important aspects in employee's adoption like job relevance, security, perceived benefits, anxiety, and perceived quality have not been investigated to their potential [40].

The previous work of e-government adoption lacks sound theoretical frameworks addressing e-government systems' adoption [44].

2.1. User Acceptance of Information Systems

User acceptance is defined as "the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support" [21, p.4]. User acceptance of an information system has been viewed as an essential factor in determining the success or failure of any information system project [19]. Davis has viewed the user acceptance of a new information system as the pivotal factor in determining the success or failure of any information system project [19]. Many other researchers view the lack of user acceptance as a significant obstruction to the success of new information systems [21].

Researchers have been trying to find factors that influence individual's acceptance of information technology in order to enhance its usage [16]. Many technology acceptance models and theories have been developed in the last 40 years. The Diffusion of Innovation (DoI) is a sociological theory concerned with the manner in which a new technological idea, artifact or technique, or a new use of an old one, migrates from creation to use [41]. Another theory is the Theory of Planned Behavior (TPB) by Ajzen in 1991 [5], which is a descendant of the Theory of Reasoned Action (TRA) by Fishbein and Ajzen in 1975 [24] which has been widely used in examining user acceptance. "TPB adds a third antecedent of intention, perceived behavioral control, to the TRA model. TPB holds that attitudes, subjective norms, and perceived behavioral control are all direct determinants of intentions, which in turn influences behavior" [21].

The most studied acceptance model is the Technology Acceptance Model (TAM) introduced by Davis et al. in 1989. This model was derived from

TRA. The TAM is specified for the acceptance of information technology and aims to explain the general determinants of computer acceptance [20] with three major robust constructs that can be extended according to the context of the study [19].

TAM is considered as a mature model that has evolved along the past three decades; the progress of TAM in the past could be divided into four periods. The first period was the introduction period, in which TAM was introduced and several replication studies and comparison studies of TAM with TRA had been conducted in order to ensure the validity of this model. This period was from 1986 to the year of 1995. The second period was the validation period from 1992 to 1996. The studies in this period heavily investigated whether TAM is powerful, reliable, consistent, and valid. The third period was the extension period from 1994 to 2000. This period was characterized by extending the model by adding external variables. And the last period is the elaboration period from year 2000 to present, this period aggregates the previous researches and resolves the limitations [33].

In 1993, Davis proposed an extended TAM to include system design features as a factor that indirectly influences technology usage. Later in 2000, the TAM2 was introduced by Davis and Venkatesh with many factors added to estimate how such factors interact with the original TAM [45]. Finally, the same researchers tried to sum most constructs of the technology adoption domain into a unified model, where they proposed four antecedents of adoption and named the model the UTAUT [4].

2.2. E-government Adoption Models

The literature pertaining to e-government adopted different acceptance conceptual models that have been utilized for various types of technologies. The aim was to explore and test e-government adoption in several e-government areas, like G2C, G2B and G2G.

Alateyah et. al. proposed a conceptual model after conducting a comprehensive literature review to find out the technology acceptance metrics. The model integrates the influential factors that affect the intention of e-government adoption like: the quality of service, diffusion of innovation, computer and information literacy, culture, lack of awareness, technical infrastructure, website design, and security [7].

Another study that explores citizen's acceptance of e-government services adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) in an e-government context in Saudi Arabia. An amended version of UTAUT was proposed as a result of this study based on the empirical test conducted [15]. Similarly, trust was a strong construct in the e-government context, where research indicated a difference in trusting the government and trusting the

technology, which both influence the adoption of e-government services [3].

In a G2G context, an e-government adoption model was used by Belanche et al. where they tested a G2G information system in a public organization by developing a theoretical model to explore the role of top management commitment on the adoption process [18].

Due to its robustness and validity, the TAM was used in many e-government adoption studies. The Belanche et al. study integrated trust and two moderating factors of citizen's time consciousness and environmental concern into the TAM to test citizen's e-government adoption [18]. Another proposed model was utilized theories from technology acceptance and success and the diffusion of ICT-related innovations to integrate constructs from the TAM, TAM2, DoI, the updated DeLone and McLean (D&M) IS Success Model, and trust and risk literature, to explain and analyze the factors influencing government officers' acceptance of e-Government services [42].

Alawadhi and Morris used the UTAUT to investigate the factors affecting e-government adoption in a developing country, Kuwait. The study revealed that performance expectancy, effort expectancy and peer influence determine users' behavioral intention. Moreover, facilitating conditions and behavioral intentions determine the use of e-government services [8].

A comprehensive framework for citizen adoption of e-government was suggested by Al-Adawi et al. to determine the drivers of citizens' intention towards e-government and their relation to the use of e-government services' websites. Their proposed conceptual model integrated constructs from the TAM, trust and risk literature [6]. Finally, an environmental model was proposed by Abu-Shanab that categorized factors influencing the adoption of e-government services into three major environmental dimensions: governmental, infrastructural, and social [1].

2.3. E-government Adoption in Jordan

Many research studies examined e-government adoption and the factors influencing the acceptance of e-government services in Jordan. Abu-Shanab and Abu-Baker explored the influence of website content, functionality, service, ease of use, accessibility, usability and security and privacy issues on e-government intention to use (ITU). A comprehensive literature review was conducted on each factor added to the model. Results indicated a significant set of bivariate correlations for all proposed constructs, but only usability, accessibility and security and privacy issue were significantly predicting ITU Jordanian e-government website [2].

Khasawneh et al. tested two acceptance factors (trust and risk) and how they affect Jordanian's intentions to use e-government services. The authors used an empirical test which resulted in moderate means for the influence of trust and risk on the intention to use e-government services [32].

Other factors were explored and linked to the e-government acceptance with the organizational agility. Almahamid developed a theoretical framework that links e-government system acceptance with organizational agility. In his theoretical framework, he adopted the TAM and linked it with agility. The practical implication of the study was to help governmental managers to understand their employees' interaction with e-government system who should use e-government system to response to changes in IT and citizens expectations [11].

Other Jordanian researchers examine the social factors that may influence citizens' intention to use e-government. A study of 400 questionnaires disseminated among 400 Jordanian participants, examined four different social factors: trust in terms of the security and privacy and trust in government, attitudes and beliefs, education, and accessibility. Their research indicated that trust in government is an identifiable concern of Internet users in Jordan. Furthermore, beliefs, especially religious beliefs play an identifiable role in e-government adoption [13].

In conclusion, we can assert that the adoption of e-government projects is a vital measure for success. Researchers concluded that Jordanians' awareness of e-government projects/benefits is low [10], and governments need to increase citizens participation in such projects utilizing more ICT tools [9], and even utilizing social networks [31]. Another barrier in this regard is the digital divide and especially in rural areas in Jordan [14, 38], where citizens suffer from both skill and knowledge divide in the same level as the accessibility divide.

3. Government Financial Management Information System GFMIS

GFMIS is a computerized integrated system that works across all spending agencies to ensure transparency and accountability in the allocation, use and monitoring of Jordan's valuable public resources. The GFMIS links all government institutions to support an informed decision-making process. It computerizes the entire life-cycle of budget preparation, budget execution, and financial reporting [26].

The GFMIS main purpose is to support all governmental agencies in their accounting functions and financial management. It will allow for complete budget management and accounting cycle. It serves as one cornerstone in Jordan's e-government

infrastructure that achieves progress which strengthens e-government initiatives [39]. The system is a back office system which is not in direct contact with citizens. Public employees use the system for the internal transactions and budgeting processes. Based on that the users of the system are limited in count and only few ministries implemented the same system. This study will explore the perceptions of users (public employees) within three major ministries: Jordan Ministry of Finance (MoF), Jordan Ministry of Education (MoE) and Jordan General Budget Department (GBD).

GFMIS consists of eight modules and they are the following: Accounts Payable, Accounts Receivable, Cash Management, General Ledger, Purchasing, Project Management, Project Costing, Enterprise Planning and Budgeting [25].

Each employee has predefined permission to use a number of forms and reports in a module. For example, in the account receivables module, the end user whose role is a cashier has a permission to access five forms. An auditor has a permission to access three forms. The head of department has a permission on eight forms and reports. The manager has a permission to access twenty five forms and reports [27].

GFMIS end users could reach their permitted forms by navigating an easy to use standardized menu which allows them to choose their role from a main menu then access their assigned forms [27].

The "Help" function provided by the system enables the end users to view information about the fields on their screen once the end user click on a field. Also a "Help" option always appears on the top of the form to enable end users to query about their inquiries and questions. On the other hand, the documented training courses, available for end users to go back to them whenever they need, help them on how to deal with the system [27].

4. Research Method

This study aimed at understanding the perceptions of public employees in regard to using the financial systems utilized by the Ministry of Finance. The study surveyed governmental employees in Jordan Ministry of Finance (MoF), Jordan Ministry of Education (MoE) and Jordan General Budget Department (GBD) to sustain their perceptions of GFMIS in Jordan.

4.1. Research Model and Variables

The extended TAM used in this study is constructed from the following constructs: Behavioral Intention (BI), Social Influence (SI), Perceived Risk (PR), Perceived Usefulness (PU), and Perceived Ease of Use (PEOU). The main research question to be answered is: *What are the factors predicting the intention to*

using GFMIS? Figure 1 shows the proposed research model.

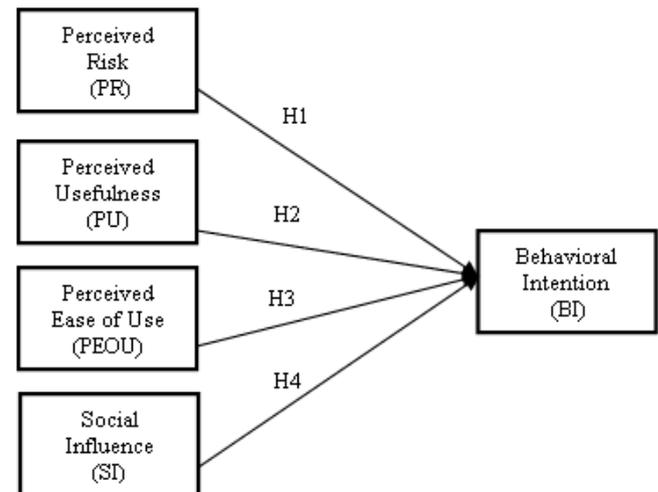


Figure 1. Research Model (An extended version of TAM).

To answer the research question, a set of hypotheses are stated:

- H1: PU will have a positive effect on BI to toward GFMIS use.
- H2: PEOU will have a positive effect on BI toward GFMIS use.
- H3: PR of GFMIS will have a negative influence on the BI toward GFMIS use.
- H4: SI will have a positive effect on BI toward GFMIS use.

4.2. Instrument and Validity

The key variables in this study were measured by a self-report questionnaire. The first part of the instrument assessed the five variables in the research hypotheses. The rest of the questionnaire included demographic characteristics of gender, age, length of the experience in working with FIS, and academic degree.

- **Behavioral Intention (BI)** is defined as “a measure of the strength of one’s intention to perform a specific behavior [24, p.288]; that is, use an information system” [29, p.5]. Participants responded to 4 items, indicating how true each statement was to them on a Likert scale from 1 (not at all agree) to 7 (totally agree). A sample item is "I intent to use GFMIS in my work".
- **Social Influence (SI)** is “the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology” [46, p.159]. Social influence has been labeled as subjective norms or social norms in different theories [37]. Participants responded to 7 items using the same scale described

earlier. A sample item is "People who are important for me, think that I have to use GFMS."

- **Perceived Risk (PR)** is defined in the context of citizen's adoption of e-government services as "the citizen's subjective expectation of suffering a loss in pursuit of a desired outcome" [47, p.160]. In a discussion of perceived risk, researchers identified risk to be the uncertainty that affects people's confidence in their decisions [28]. Furthermore, "risky situations can be those where the probabilities of outcomes are not known and the outcome is known or unknown". [28, p.2]. Participants responded to 3 items, indicating how true each statement was to them on the same 7 point Likert scale. A sample item is "when using GFMS, I prefer to be in a safe situation rather than taking risks."
- **Perceived usefulness (PU)** is defined as "the degree of which a person believes that using a particular system would enhance his or her job performance" [20, p.320]. Participants responded to 4 items, indicating how true each statement was to them on a 7 point Likert. A sample item is "Using GFMS improves my job performance."
- **Perceived ease of use (PEOU)** is defined as "the degree of which a person believes that using a particular system would be free of effort" [20, p.320]. Participants responded to 5 items, indicating how true each statement was to them on a 7 point Likert scale. A sample item is "Dealing with the system is often flexible".

The questionnaire used for data collection contained items to measure the various constructs depicted in the research model. The constructs with their detailed items are shown in Table 1. The scales for PEOU, PU, BI, PR and SI were adapted from prior studies, many of which have already established their reliability and validity [19, 20, 36, 45, 23, 4].

4.3. Sample and Sampling Process

The sample for this study included a group of employees who use GFMS in their work. The sample was collected from three groups of governmental employees from Jordan Ministry of Finance, Jordan Ministry of Education and Jordan General Budget Department and the collection process extended over a period of 5 weeks in November 2013. During work hours, the survey was administered by the researcher to the employees who were expected to complete the questionnaire at the end of the working day. These surveys were returned to the researcher before the employees leave their work. Overall, 100 questionnaires that were handed out during their working hours, 96 usable questionnaires were received

and were used for data analyses, thus yielding a response rate of 96%.

4.4. Final Sample Demographics

Table 1 shows the demographics of the sample used for model validation. The table shows numbers related to age, gender, years of experience in the department, years of experience using Automated Financial Systems AFSs, and academic qualifications.

Table 1. Sample demographics.

| Age | Percent | Total |
|-----------------------|---------|-------|
| Less than or equal 30 | 14% | 13 |
| 31 - 40 | 54% | 52 |
| More than 40 | 32% | 31 |

| Gender | Percent | Total |
|--------|---------|-------|
| Male | 69% | 66 |
| Female | 31% | 30 |

| Experience in the department | Percent | Total |
|------------------------------|---------|-------|
| 1-5 | 23% | 22 |
| 6-10 | 27% | 26 |
| More than 10 | 50% | 48 |

| Experience in using AFSs | Percent | Total |
|--------------------------|---------|-------|
| 1-5 | 36% | 35 |
| 6-10 | 42% | 40 |
| More than 10 | 22% | 21 |

| Academic Qualifications | Percent | Total |
|----------------------------|---------|-------|
| High School | 7% | 7 |
| Bachelor degree or Diploma | 75% | 72 |
| Masters or Doctorate | 18% | 17 |

All of the GFMS end users are well trained employees and managers, where they all conducted a well-planned training and many workshop sessions before starting to use GFMS. The end users training courses material included an introduction to the basics of using GFMS, theoretical training on GFMS business processes, and on-hand training on GFMS [25].

Based on one of the researchers experience in the ministry, the estimated ratios of respondents' ranks are the following: Managers approximately represent 2% of the sample, and heads of departments represent 10% of the sample. The rest of the sample can be considered regular employees who deal with governmental financial systems like: cashiers, accountants, auditors, budget workers, expenditures workers, etc. These regular employees represent 88% of the sample.

5. Data Analysis and Discussion

The analysis required in this study to test the research hypotheses includes a regression analysis of the research model and some descriptive statistics to see

how Jordanian public employees perceive the adoption details of GFMS.

It is common practice in social sciences to adopt the following scheme when using a 7 point Likert scale: values from 1-3 indicate low perceptions, 3-5 indicate moderate perceptions, and values from 5-7 indicate high perceptions. The descriptive statistics of the five factors and their detailed items are shown in Table 2.

5.1. Descriptive Statistics

Table 2. Summary of means and standard deviations (N=96).

| Factors | Question (item) | Mean | Std. Dev. |
|------------------------------|--|-------------|-----------|
| Behavioral Intention (BI) | Q1: I intent to use GFMS in my work. | 5.52 | 1.748 |
| | Q2: I expect to use GFMS in my work. | 5.47 | 1.645 |
| | Q3: I plan to use GFMS in my work. | 5.53 | 1.627 |
| | Q4: I expect to use GFMS in my work continuously. | 5.60 | 1.625 |
| Social Influence (SI) | Q5: People who influence me, think that I have to use GFMS. | 5.34 | 1.697 |
| | Q6: People who are important for me, think that I have to use GFMS. | 5.26 | 1.632 |
| | Q7: Top management of ministry will be\was helpful when using GFMS. | 5.08 | 1.685 |
| | Q8: The reason behind me using GFMS, is the core values of my organization. | 5.29 | 1.654 |
| | Q9: I am proud of using GFMS. | 5.16 | 1.814 |
| | Q10: My reward on using GFMS, is closely linked to my effort in using it. | 4.23 | 1.952 |
| Perceived Risk (PR) | Q11: My own opinion about GFMS is different from my stated opinion. | 5.13 | 1.848 |
| | Q12: I am very careful on making and implementing plans. | 5.50 | 1.581 |
| | Q13: I prefer to ascertain that I could do any step do, even though it seems exciting. | 5.44 | 1.527 |
| | Q14: When using GFMS, I prefer to be in a safe situation rather than taking risks. | 5.67 | 1.624 |
| Perceived Usefulness (PU) | Q15: Using GFMS will improve the quality of work I do. | 5.11 | 1.758 |
| | Q16: Using GFMS gives me greater control over my work. | 5.15 | 1.627 |
| | Q17: Using GFMS increases my productivity. | 5.05 | 1.737 |
| | Q18: Using GFMS improves my job performance. | 5.27 | 1.705 |
| Perceived Ease of Use (PEOU) | Q19: I find GFMS comfortable to use. | 4.65 | 1.817 |
| | Q20: Learning how to operate the system is easy for me. | 5.03 | 1.661 |
| | Q21: Dealing with the system is often flexible. | 4.69 | 1.683 |
| | Q22: I find it easy to get the GFMS to do what I want it to do. | 5.04 | 1.735 |
| | Q23: I find it is easy to become skillful at using GFMS. | 5.16 | 1.815 |

All means were high and moderate, which indicates the importance of all indicators adopted by this study. The values of the standard deviations ranged from 1.527 to 1.952 which also indicates a consistency in judgment for most items. The span of such standard deviation reflects an upper value perception as 68% of responses were from 3-7, which represents the upper segment of data.

The highest items perceived by respondents were for Q4 (BI construct), Q12 and Q14 (PR construct). It is obvious that the risk associated with financial systems is more potent than other items. On the other hand, the lowest perceptions with values under 5 were associated with Q10 (SI construct) and Q19 and Q21 (PEOU construct). Such result puts a highlight on the less importance of the ease of systems for people use such systems daily.

Analyzing the means and standard deviations for the overall factors, we can see that most of mean values scattered around the value of 5. We can consider that overall factors were rated highly by financial employees with minor deviations. The values of the means and standard deviations are shown in Table 3 below. This indicates that most of the employees tend to slightly agree rather than disagree with the suggested factors. The highest factor perceived by employees was associated to perceived risk, followed

by behavioral intention. The lowest factor was for ease of use.

Table 3. Factor means and standard deviations.

| Factor | Mean | Stand. Dev. |
|------------------------------|------|-------------|
| Behavioral Intention (BI) | 5.35 | 0.059 |
| Social Influence (SI) | 5.07 | 0.119 |
| Perceived Risk (PR) | 5.54 | 0.048 |
| Perceived Usefulness (PU) | 5.15 | 0.058 |
| Perceived Ease of Use (PEOU) | 4.92 | 0.072 |

The final step in the preliminary analysis was to measure the internal reliability of each factor to see how the items interact within each construct and if they are consistent with the overall measure. Results reported in Table 4 indicate that all Cronbach's alpha values are above 0.8, which is considered an acceptable level of internal consistency.

Table 4. Cronbach's alpha reliability coefficient.

| Factor | Items | Alpha |
|------------------------------|-------|-------|
| Behavioral Intention (BI) | 4 | 0.847 |
| Social Influence (SI) | 7 | 0.829 |
| Perceived Risk (PR) | 3 | 0.825 |
| Perceived Usefulness (PU) | 4 | 0.916 |
| Perceived Ease of Use (PEOU) | 5 | 0.901 |

5.2. Testing the Hypotheses and Research Model

The proposed model included four independent variables predicting behavioral intention (BI), perceived usefulness (PU), perceived ease of use (PEOU), perceived risk (PR) and social influence (SI). The first step was to investigate the bivariate relationships between the five major constructs in the study. Highly correlated factors are a concern in social sciences because of divergent validity. Table 5 shows

the correlation matrix of all constructs of the study (dependent and independent variables).

The correlation matrix describes the relationship between two variables. From this matrix we infer that social influence, perceived risk and perceived usefulness have significant values ($p < 0.001$) this indicates they are strong predictors of behavioral intention. Perceived ease of use is significant in all relationships with other variables except the relationship between it and perceived risk. Extremely high correlations (>0.8) are not present in the table.

Table 5. The correlations matrix.

| | | | | | |
|------------------------------|---------|---------|---------|---------|------|
| | BI | SI | PR | PU | PEOU |
| Behavioral Intentions (BI) | 1 | | | | |
| Social Influence (SI) | 0.747** | 1 | | | |
| Perceived Risk (PR) | 0.366** | 0.369** | 1 | | |
| Perceived Usefulness (PU) | 0.708** | 0.732** | 0.498** | 1 | |
| Perceived Ease of Use (PEOU) | 0.456** | 0.533** | 0.243 | 0.486** | 1 |

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

The proposed model was tested utilizing regression analysis which indicated significant results for only two variables (SI and PU) and an R value of 0.783, with standard error of estimate 0.87269. The R^2 value is 0.612 (adjusted $R^2 = 0.595$), with an $F_{4,91} = 35.937$, $p < 0.001$. The following two tables provide the output of the analysis (Tables 6 and 7).

$$BI = 0.602SI + 0.266 PU$$

6. Conclusion and Future Work

This study explored the factors that may affect the acceptance of one of new governmental information technology systems using TAM model with additional independent variables. It identified two factors affecting the Jordanian MOF employees' intentions to use GFMIS, which are social influence and perceived usefulness. The purpose of this study was to better understand the adoption of GFMIS. The factors affecting intention to use GFMIS were explored using a survey utilizing four independent variables. The proposed model in this study explores the effects of four independent variables (mentioned in the previous sections) on the behavioral intention to use GFMIS. The variables that were significant in predicting BI are SI and PU. Table 8 indicates the supported hypotheses and the related literature in alignment with each result. Figure 2 shows the significant predictor of BI and their related significance level.

Table 6. Testing the Model Summary.

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .783 ^a | .612 | .595 | .87269 |

Predictors: (Constant), PEOU, PU, PR, SI, and the dependent Variable: BI

Table 7. The Coefficients' table of regression analysis.

| Constructs | Unstand Beta | Std. Error | Stand. Beta | t | Sig. |
|------------------------------|--------------|------------|-------------|-------|------|
| (Constant) | .401 | .463 | | .867 | .388 |
| Social Influence (SI) | .602 | .102 | .526 | 5.887 | .000 |
| Perceived Risk (PR) | .170 | .089 | .155 | 1.910 | .059 |
| Perceived Usefulness (PU) | .266 | .088 | .295 | 3.025 | .003 |
| Perceived Ease of Use (PEOU) | -.032 | .096 | -.034 | -.332 | .741 |

Dependent Variable: BI

Behavioral intention (based on this model) can be predicted by using the following equation, which included PU and SI only. SI was more important in predicting behavioral intention than PU. The coefficients used in the equation are the unstandardized coefficients for each term in the equation. Finally, it might be important to see that PR was close to enter the model. The beta value was not enough to be significant, but with a t close to 1.96 (p value close to 0.05) it is important to consider PR in future research.

Table 8. Summary of findings and related hypotheses.

| Predictor | H# | Result | Literature support |
|-----------------------|----|---------------|---|
| Perceived Usefulness | H1 | Supported | Original TAM, Abu-Shanab & Al-Radaideh (2009) |
| Perceived ease of use | H2 | Not supported | Ma & Liu (2004), Legris, Ingham & Collette (2003) |
| Perceived risk | H4 | Not Supported | Abu-Shanab & Al-Azzam (2012) Faqih (2013) |
| Social influence | H5 | Supported | UTAUT, Malhotra, Y. et al.(1999) |

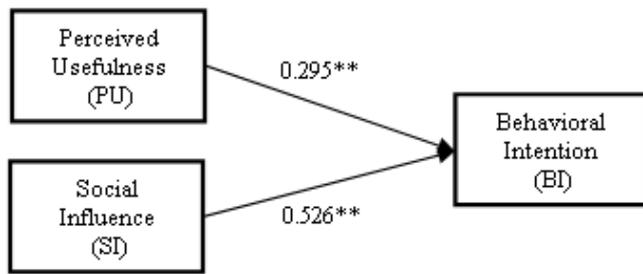


Figure 2. Final research model.

This study partially supported the TAM. Only the relationship between PU and BI from TAM was supported. The other TAM relationships were not supported. The results of the study supported additional predictors not mentioned in TAM but the TRA. SI influenced BI to use GFMIS, while PEOU did not predict behavioral intention. Such contradictory result is rare in previous research, but happens.

The results indicate that the social environment between employees and the importance of their collective attitudes towards the system is a determining factor. SI was a stronger predictor of BI than PU. Management could emphasize the role of SI as a factor affecting GFMIS acceptance by creating a strong encouraging social environment at the workplace in order to improve GFMIS use. Still, and in congruence with the previous dominating research in TAM, PU significantly predicted BI. Such result emphasizes the importance of the contribution of GFMIS into the performance of these employees. It is important to realize that the two insignificant predictors (PR & PEOU) were significantly associated with BI in a one-to-one relationship. Such result means that the conceptual foundation of this study is solid and failed to support the joint model because of sample used.

This study provides a significant understanding of the GFMIS acceptance. Further exploration is still in need, like testing some moderating factors or other predictors. Based on the significant results of this study, we are still in need of more research in the technology acceptance domain using other factors that could affect BI. The instruments of these types of studies need more investigation to reach an acceptable reliability levels.

This study contributed to the literature through an insider study that utilized real employees already using the GFMIS. Such contribution is important because it can be considered the first in the Jordanian context and a study related to the performance improvement of e-government phenomenon. Common studies are focusing on citizens perceptions when exploring e-government systems. This study is one of the first (up to the knowledge of authors) to explore the performance of government when using e-systems.

The Arabic instrument used is a new one in Arabic language and needs more testing with larger samples. The results of this research were surprising when focusing on PEOU, which calls for more research to

overcome the sample influence and to know if the results are generalizable. It is recommended to expand the sample size and to distribute the survey over other governmental departments who use the GFMIS. Further, longitudinal study could be done to explore the influence of experience and other moderating factors affecting behavioral intention of using GFMIS.

References

- [1] Abu-Shanab, E., "Digital Government Adoption in Jordan: An Environmental Model." *Int. Arab J. e-Technol.* Vol. 2, no. 3, pp.129-135, 2012.
- [2] Abu-Shanab, E., and Abu-Baker, A. "Evaluating Jordan's e-government website: a case study." *Electronic Government, an International Journal*, vol. 8, no. 4, pp. 271-289, 2011.
- [3] Abu-Shanab, E., and Al-Azzam, A., "Trust dimensions and the adoption of e-government in Jordan." *International Journal of Information Communication Technologies and Human Development (IJICTHD)*, vol. 4, no. 1, pp. 39-51, 2012.
- [4] Abu-Shanab, E., and Pearson, J. M., "Internet banking in Jordan: The unified theory of acceptance and use of technology (UTAUT) perspective." *Journal of Systems and Information Technology*, vol. 9, no. 1, pp. 78-97, 2007.
- [5] Ajzen, I., "The theory of planned behavior." *Organizational behavior and human decision processes*, vol. 50, no. 2, pp. 179-211, 1991.
- [6] Al-Adawi, Z., S. Yousafzai, and J. Pallister. "Conceptual model of citizen adoption of e-government." In *The Second International Conference on Innovations in Information Technology (IIT'05)*. 2005.
- [7] Alateyah, S., Crowder, R. M., & Wills, G. B., "Factors Affecting the Citizen's Intention to Adopt E-government in Saudi Arabia." *International Journal of Management Science and Engineering*, vol. 7, no. 9, pp. 561-567, 2013.
- [8] AlAwadhi, S., and Morris, A., "The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait." In *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual*, IEEE, Hawaii, pp. 219-219, 2008.
- [9] Al-Dalou, R., and Abu-Shanab, E., "E-participation levels and technologies." *Proc. 6th International Conference on Information Technology (ICIT 2013)*, Amman, Jordan, 8-10 May, pp. 1-8, 2013.
- [10] Al-Jaghoub, S., Al-Yaseen, H., & Al-Hourani, M., "Evaluation of awareness and acceptability

- of using e-government services in developing countries: The case of Jordan." *Electronic Journal Information Systems Evaluation*, vol. 13, no. 1 (2010): 1-8.
- [11] Almahamid, S. M., "E-government system acceptance and organizational agility: theoretical framework and research agendas," *Business and Management*, vol. 5, no. 1, 2013.
- [12] Al-Naimat, A., Abdullah, M. S., & Ahmad, M. K., (2013). "The critical success factors for e-government implementation in Jordan," *Proc. 4th International Conference on Computing and Informatics*, Sarawak, Malaysia, pp. 28-30, August, 2013.
- [13] Alomari, M. K., Sandhu, K., & Woods, P., "E-government adoption in the Hashemite Kingdom of Jordan: factors from social perspectives." *In Internet Technology and Secured Transactions, 2009. ICITST 2009. International Conference for, IEEE*, pp. 1-7, 2009.
- [14] AL-Rababah, B. & Abu-Shanab, E., "E-Government and Gender Digital Divide: The Case of Jordan," *International Journal of Electronic Business Management (IJEEM)*, vol. 8, no. 1, pp. 1-8, 2010.
- [15] Alshehri, M., Drew, S., & AlGhamdi, R., "Analysis of Citizens Acceptance for E-government Services: Applying the UTAUT Model," *arXiv preprint arXiv:1304.3157* (2013).
- [16] Al-Somali, S. A., Gholami, R., & Clegg, B., "An investigation into the acceptance of online banking in Saudi Arabia". *Technovation*, vol. 29, no. 2, pp. 130-141, 2009
- [17] Alzboun, F., Alatarwneh, H., Altarawneh, M., & Al Obisat, F. M., "An Assessment for Jordan's E-Government Initiative Projects: A Conceptual Framework," *Computer Engineering & Intelligent Systems*, vol. 4, no. 3, pp. 1-11, 2013.
- [18] Belanche, D., Casaló, L. V., & Flavián, C., "Integrating trust and personal values into the Technology Acceptance Model: The case of e-government services adoption," *Cuadernos de Economía y Dirección de la Empresa*, vol. 15, no. 4, pp. 192-204, 2012.
- [19] Davis, F. D., "User acceptance of information technology: system characteristics, user perceptions and behavioral impact". *International Journal of Man-Machine Studies*, vol. 38, no. 3, pp. 475-487, 1993.
- [20] Davis, F. D., "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS quarterly*, pp. 319-340, 1989.
- [21] Dillon, A. & Morris, M., "User acceptance of new information technology: theories and models," *In M. Williams (ed.) Annual Review of Information Science and Technology*, Vol. 31, Medford NJ: Information Today, pp. 3-32, 1996.
- [22] Faqih, K., "Exploring the Influence of Perceived Risk and Internet Self-efficacy on Consumer Online Shopping Intentions: Perspective of Technology Acceptance Model," *International Management Review*, vol. 9, no. 1, 2013.
- [23] Featherman, M. S., & Pavlou, P. A., "Predicting e-services adoption: a perceived risk facets perspective," *International journal of human-computer studies*, vol. 59, no. 4, pp. 451-474, 2003.
- [24] Fishbein, M. & Ajzen, I., *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, MA: Addison-Wesley Publishing Company Reading, 1975.
- [25] GFMIS information. Available: <http://www.gfmis.gov.jo>
- [26] GFMIS information Available: <http://www.frpii.org>
- [27] Ghanem, A. (2014, October 28). Personal interview with Darraj, K.
- [28] Im, I., Kim, Y., & Han, H. J., "The effects of perceived risk and technology type on users' acceptance of technologies," *Information & Management*, vol. 45, no. 1, pp. 1-9, 2008.
- [29] Jackson, C. M., Chow, S., & Leitch, R. A., "Toward an understanding of the behavioral intention to use an information system," *Decision sciences*, vol. 28, no. 2, pp. 357-389, 1997.
- [30] Kanaan, R., & Kanaan, G., "The Failure of E-government in Jordan to Fulfill Potential," *International Journal*. 2013.
- [31] Khasawneh, R. & Abu-Shanab, E., "E-Government and Social Media Sites: The Role and Impact," *World Journal of Computer Application and Technology*, vol. 1, no.1, pp. 10-17, 2013.
- [32] Khasawneh, R., Rabayah, W. & Abu-Shanab, E. (2013). "E-Government Acceptance Factors: Trust and Risk," *The 6th International Conference on Information Technology*, Amman, Jordan, pp.1-8, 2013.
- [33] Lee, Y., Kozar, K. A., & Larsen, K. R., "The Technology Acceptance Model: Past, Present, and Future," *Communications of the Association for Information Systems*, vol. 12, no. 1, Article 50, 2003.
- [34] Legris, P., Ingham, J., & Collerette, P., "Why do people use information technology? A critical review of the technology acceptance model," *Information & Management*, vol. 40, no. 3, pp. 191-204, 2003.
- [35] Ma, Q., & Liu, L., "The technology acceptance model: a meta-analysis of empirical findings," *Journal of Organizational and End User Computing (JOEUC)*, vol.16, no. 1, pp. 59-72, 2004.
- [36] Malhotra, Y. & Galletta, D. F., "Extending the technology acceptance model to account for

- social influence: theoretical bases and empirical validation,” *Systems Sciences, Proc. the 32nd Annual Hawaii International Conference HICSS-32*, Hawaii, USA, pp. 14-pp, IEEE. 1999.
- [37] Mazman, S. G., Usluel, Y. K., & Çevik, V. (2009). “Social Influence in the Adoption Process and Usage of Innovation: Gender Differences,” *World Academy of Science: Engineering & Technology*, vol. 49, 2009.
- [38] Obeidat, R. & Abu-Shanab, E., “ Drivers of E-government and E-business in Jordan,” *Journal of Emerging Technologies in Web Intelligence*, vol. 2, no. 3, pp. 204-211, 2010.
- [39] OECD (2010). “Progress in Public Management in the Middle East and North Africa Case Studies on Policy Reform: Case Studies on Policy Reform,” *A publication of the OECD* in Aug 3, 2010 – 260 pages, accessed from the Internet from www.oecd-ilibrary.org.
- [40] Rana, N. P., Dwivedi, Y. K., & Williams, M. D. (2012). “Evaluating suitability of alternative theoretical paradigm for examining citizen adoption of e-government,” *In tGov Workshop 2012*, pp. 8-9. 2012.
- [41] Rogers, E. M., *The Diffusion of Innovation*. New York: Free Press, 4th edition. 1995.
- [42] Sang, S., & Lee, J. D., “A conceptual model of e-government acceptance in public sector.” *In Digital Society, 2009. ICDS'09. Third International Conference, IEEE*, pp. 71-76, 2009.
- [43] Susanto, T. D., “Individual Acceptance of e-Government: A Literature Review,” *In The Second International Conference on Informatics Engineering & Information Science (ICIEIS2013)*, pp. 334-342. The Society of Digital Information and Wireless Communication, 2013.
- [44] Titah, R., & Barki, H., “E-government adoption and acceptance: A literature review,” *International Journal of Electronic Government Research (IJEGR)*, vol. 2, no. 3, pp. 23-57, 2006.
- [45] Venkatesh, V. & Davis, F. D., “A theoretical extension of the technology acceptance model: four longitudinal field studies,” *Management Science*, vol. 46, no. 2, pp. 186-204, 2000.
- [46] Venkatesh, V., Thong, J., & Xu, X. (2012). “Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology,” *MIS Quarterly*, vol. 36, no. 1, pp. 157-178, 2012
- [47] Warkentin, M., Gefen, D., Pavlou, P.A., Rose, G. (2002). “Encouraging citizen adoption of eGovernment by building trust,” *Electronic markets* vol. 12, no. 3 , pp. 157-162, 2002.
- [48] Weerakkody. V., El-Haddadeha, R., Sabolb, S., Ghoneima, A. & Dzupkab, P. (2012). “E-government implementation strategies in

developed and transition economies: A comparative study,” *International Journal of Information Management*, vol. 32, pp. 66-74, 2012.



Dua'a S. Sawalha earned her MSc. in Management Information Systems in 2011 from Yarmouk University (YU) – Irbid, Jordan. She earned her Bachelor degree in Computer Science from YU. Her research interests are in areas of E-government and technology acceptance. Dua'a worked as a Teaching Assistant in both Jordan University of Science and Technology (JUST) and YU. Also worked as a systems developer in the Jordanian Ministry of Finance (MoF).



Emad A. Abu-Shanab earned his PhD in business administration, majoring in MIS area in 2005 from Southern Illinois University – Carbondale, USA. He earned his MBA from Wilfrid Laurier University in Canada and his Bachelor in civil engineering from Yarmouk University (YU) in Jordan. His research interests are in areas like E-government, technology acceptance, E-marketing and E-CRM, Digital divide, and E-learning. Published many articles in journals and conferences and authored two books in e-government area. Dr. Emad worked as an assistant dean for students' affairs, quality assurance officer in Oman, and the director of Faculty Development Center at YU.