E-Government Adoption in Uzbekistan: Empirical validation of the Unified Model of Electronic Government Acceptance (UMEGA)

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ABSTRACT

This study aimed to investigate the underlying factors that play an important role in improving citizens' intention to use e-government services called Single Portal of Interactive Public Services (SPIPS) in Uzbekistan. To that end, a theoretical model known as Unified Model of E-government Adoption (UMEGA) was employed. A survey was conducted for 216 respondents in Uzbekistan to measure six constructs from UMEGA: (1) performance expectancy, (2) effort expectancy, (3) social influence, (4) perceived risk, (5) facilitating conditions and (6) attitude Reliability and validity test results indicated adequate consistency and validity. Results from structural equation model (SEM) indicated that performance expectancy had the greatest influence (β =0.745, p < 0.001) on intention to use e-government in Uzbekistan.

CCS CONCEPTS

• **Applied computing** → Computers in other domains.

KEYWORDS

E-Government, E-Services, UMEGA, Uzbekistan

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1 INTRODUCTION

It has been reported that globally, about 98% of the countries have implemented e-government system [1]. Subsequently, studies have attempted to evaluate the citizens' perspectives and adoption for the e-government system by employing theoretical models from e-commerce studies. To better reflect the unique context of e-government, a theoretical model specifically designed for the evaluation of e-government system was developed [2, 3]. Known as Unified Model of E-government Adoption (UMEGA), this comprehensive theoretical model was created based on the constructs from the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), the Diffusion of innovation (DOI)/innovation diffusion theory (IDT), and Unified theory of acceptance and use of technology (UTAUT). This study aimed to empirically validate UMEGA in the context of e-government system in Uzbekistan where no studies have yet been conducted to assess citizens' perspectives by UMEGA.

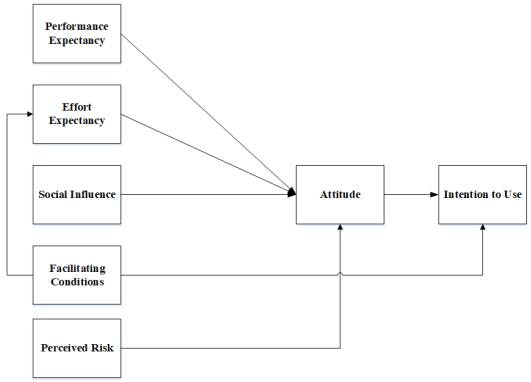

Figure 1: UMEGA (Dwivedi et. al., 2017).

2 THEORETICAL MODEL

Specifically, UMEGA identified the following constructs: (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) perceived risk that influence the behavioural intention to adopt e-government portals through the mediating role of attitudes towards e-government services. Additionally, (5) facilitating conditions and (6) attitude, were posited to directly influence the behavioural intention, while facilitating conditions indirectly influence the attitude via mediating role of effort expectancy (Figure 1).

3 METHODS

A survey was administered in the capital of Uzbekistan – Tashkent city during September and November 2019. In total, responses from 216 citizens were included in the analysis.

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3.1 Measures

The respondents were asked to express their opinion on a 7-point Likert scale for each of the six measures: (1) performance expectancy, (2) effort expectancy, (3) social influence, (4) perceived risk, (5) facilitating conditions and (6) attitude. The questions were slightly modified from the original study of UMEGA by Dwivedi et al. to address the Uzbek context [3].

3.2 Data Analysis

Reliability and validity tests were performed and a structural equation model (SEM) was used to validate the UMEGA in Uzbek context. Cronbach's alpha was calculated to measure the consistency of the survey questions. In terms of validity, convergent and discriminant validity were tested.

4 RESULTS

4.1 Demographic characteristics

Out of 216 respondents, 71.9% were males, with age ranging from 18 to 79 years old. With regard to occupation, majority of them are students and government sector employees. 62.7% of respondents were below 30 years old, indicating that the age distribution is reasonably similar to that in the original study of UMEGA as 61% of their respondents were below 30 years old [3].

4.2 Reliability, Validity and SEM

The results for reliability test showed that all constructs met the cut-off scales for Cronbach's alpha, which were all above 0.8. Composite reliability (CR) also met the cut-off value of 0.7. Average variance extracted (AVE) for validity test also met the criteria for cut-off value of 0.5. Figure 2 shows the results of path analysis of the UMEGA. Specifically, the independent constructs performance expectancy and effort expectancy positively and significantly affected attitude, while social influence and perceived risk are not statistically significant towards attitude. On the other hand, facilitating conditions significantly influenced effort expectancy. Lastly, facilitating conditions and attitude positively affected an Uzbek citizen's behavioural intention. Among those seven paths, performance expectancy demonstrated the greatest influence (β =0.745, $p < 0.001$), meaning that it is the most significant determinant in explaining behavioural intention to use of e-services in Uzbekistan. The explanatory power of the attitude (R^2= 0.601) in this study was higher than the previous studies of UMEGA in other contexts [2, 3].

5 DISCUSSION

The findings support, to some extent, the results from previous studies using UMEGA or other e-government and technology adoption models implemented in Sub-Saharan African [2] and Indian [3] contexts. However, this study indicated that the paths for social influence and perceived risk do not cohere with the original study of UMEGA. This discrepancy may imply that the UMEGA needs further empirical validation in various contexts. Nonetheless, this study sets the initial landscape for e-government adoption research using UMEGA in Uzbekistan.

Although this study is limited in terms of generalizability, it contributes to the empirical validation of the e-government-specific theoretical model known as UMEGA in Uzbek context. In doing so, the study can provide insights into citizens' perspectives that can be critical in improving the e-government system.

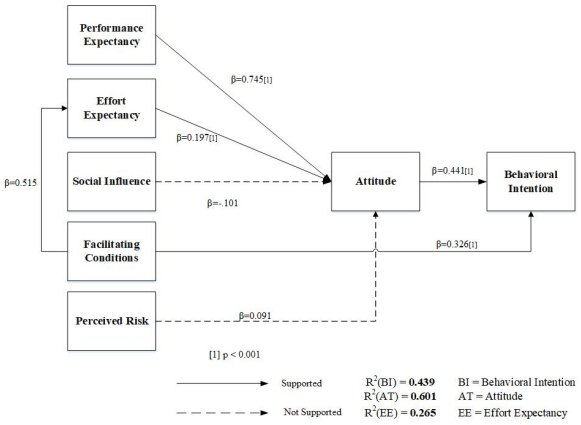

Figure 2: Path model validation of UMEGA for the adoption of e-government in Uzbekistan

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