

Determinants of the continuous use of E-GOV information systems and services in Morocco : Proposing an integrative model.

Déterminants de la continuité d'utilisation des systèmes d'information et services E-GOV au Maroc : Proposition d'un Modèle intégratif.

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Abstract :

The digital transformation of public administration is a strategic project that has been initiated by Morocco several years ago. It is a very ambitious project that is of great importance for the development and growth of the country. Yet, its success depends highly on the involvement and participation of citizens. However, in Morocco, there is a lack of comprehensive information regarding the adoption and usage of these solutions, as well as the e-gov satisfaction levels among citizens.

This research aligns with theories of information system usage behavior in a post-adoption context and focuses on the user's perspective, emphasizing the importance of studying the peculiarities of their usage behavior in order to promote the success of the systems and solutions offered to them.

After addressing the situation of e-gov services in Morocco and presenting the theoretical basis of the research, this article proposes, in its third part, an integrative model composed of a fusion between several theories with the objective to study the continuous use behavior of e-gov services and systems in Morocco. This model includes motivation and satisfaction constructs to explain usage continuance. The proposed model will be the starting point of an empirical study whose goal is to explore all the assumed relationships in the model and to analyze them.

Keywords : Intrinsic motivation ; Extrinsic motivation ; Usage continuance ; E-government ; Satisfaction.

Résumé :

La transformation numérique de l'administration publique est un projet stratégique qui a été entamé par la Maroc depuis plusieurs années. C'est un projet très ambitieux qui relève d'une très grande importance pour le développement et la croissance du pays. La réussite d'un tel chantier passe impérativement par l'implication et la participation des citoyens. Or, au Maroc on ne dispose pas encore d'information pour nous éclaircir sur le degré d'utilisation de ces solutions, encore moins, sur celui de la satisfaction des citoyens. Cette recherche s'inscrit dans la lignée des théories des comportements d'usage des systèmes d'information dans un contexte post adoption et se positionne du côté de l'utilisateur en mettant le point sur l'importance d'étudier les particularités de son comportement d'utilisation afin de promouvoir le succès des systèmes et solutions qui lui sont proposées.

Après avoir aborder la situation des services e-gov au Maroc et présenter le soubassement théorique de la recherche, cet article propose, dans sa troisième partie, un modèle intégratif composé d'une fusion entre plusieurs théories dont l'objectif est d'étudier le comportement d'utilisation continue des services et systèmes e-gov au Maroc. Ce modèle comporte des construits de motivation, de satisfaction pour expliquer la continuité d'utilisation. Le modèle proposé va constituer le point de départ d'une étude empirique dont le but est d'explorer l'ensemble des relations supposées et de les analyser.

Mots clés : Motivation intrinsèque ; Motivation extrinsèque ; Continuité d'utilisation ; E-gouvernement ; Satisfaction.

Introduction

Public administrations today are no longer institutions whose only purpose is to provide administrative services to citizens, they are considered nowadays as central actors that must necessarily participate in the socio-economic development of their countries. The effectiveness of public administration is a crucial criterion for assessing a country's progress, its business climate stability, and its economic attractiveness.

Therefore, the success of any national development strategy must necessarily involve a profound and serious reform of the administration. To meet this requirement, it is essential to rethink organizational processes and establish a modern management system with the aim of creating a new administration that is more agile, user-oriented, capable of meeting the requirements of the information economy, and addressing the challenges of socio-economic openness.

Being the focal point of all digital transformation projects, the citizen must play an important role in all policies aimed at improving and modernizing the functioning of public administration (HILMI & KAIZAR, 2023). They should no longer be seen as the last link in the chain whose only role is to solely consume the provided services. On the contrary, a true reform of the administration must also involve a real change of vision and culture in the approaches adopted to understand the relationship with the citizen. Today, the focus should be on communicating, satisfying, and even building loyalty with the citizens. Loyalty, not to buy a product, obviously, but to integrate them into the path of development and growth.

To satisfy citizens, it is necessary to understand their needs, analyze their usage patterns, comprehend their perception, and grasp their motivations. This involves discovering what drives them to use and adopt the proposed systems over time, as well as identifying any barriers or reasons for non-adoption. It's indeed the central issue of this research, which aims to uncover the following question : what are the determinants and influencing factors that impact citizens' continuance usage and adoption behavior over time ?

In this article, we propose an integrative model that serves as the foundational framework for our empirical study. This model encompasses a set of factors and criterias that will be employed to analyze user intentions and examine the influencing factors that affect their continuous usage behavior.

The first part of this article provides an overview of the status of digitization projects in Morocco. Then, the article presents the theoretical framework of the study, followed, in its last part, by the research model adopted including the constructs and the different relationships it encompasses.

1. The Situation of e-government initiative in Morocco

The information and communication technology (ICT) sector is undoubtedly one of the largest sectors of economic activity globally. The size of the digital economy reached 15.5% of global world GDP in 2019, with 40% of its added value coming from IT services activities (United Nations Conference on Trade and Development, 2019). In Morocco, the ICT sector employed approximately 58,000 workers in 2019 and contributed to 7% of the national GDP (International Data Corporation, 2012). At the national level, this sector presents enormous potential, especially considering the growth of ICT with the democratization of the internet and the development of telecommunications technologies.

Since the royal speech of His Majesty the King Mohammed VI on the occasion of the Throne Day in 2008, the government, in line with the royal guidelines, has launched several programs and strategies to give the country the rightful place it should have in this sector. The National Strategies for the Information Society and the Digital Economy (Maroc Numeric 2013 and 2020) aimed to position Morocco as a key regional player in this industry. The ambition was to make IT a driving force for economic growth and human development. The strategic action plan involved developing the national technology sector, initiating social transformation, and providing efficient digital public services. The implemented policies aimed to improve economic competitiveness, promote local development strategies (such as advanced regionalization), enhance the quality of public services, and reduce social inequalities.

Today, the internet penetration rate in Morocco exceeds 95%, with mobile internet specifically surpassing 130%. Over 89% of internet users connect through mobile devices, and the number of mobile connections is equivalent to 117.1% of the total population. These indicators are concrete examples showing that Morocco has made significant progress in terms of telecommunication infrastructure since the early 2000s (NTRA, 2022).

However, despite all the efforts, a report from the Court of Accounts released in 2019 pointed out several gaps between the expected objectives of the strategies and the reality. The report highlighted that the majority of services offered to citizens are interactional rather than

transactional, with a low level of maturity and issues related to ergonomics and transparency. It also noted significant delays in the implementation of major projects since the launch of the strategies in 2009, such as online civil registration and online business creation. These issues, among others, have contributed to Morocco's relatively low ranking in the United Nations' assessment (United Nations Survey, 2020).

From the user's perspective, a survey conducted by the National Digital Agency (DDA) in 2020 revealed that the average Moroccan citizen still spends around 50 hours per year in the corridors of public administrations to handle administrative matters, leading to dissatisfaction among 85% of citizens. The survey also highlighted that 92% of citizens and 87% of businesses claimed to be unsatisfied or slightly satisfied with the e-services provided by public administrations. These figures confirm the observations made in the Court of Accounts' report, which identified communication problems and issues with utilization in the Moroccan e-gov ecosystem. The report emphasized the absence of national indicators to measure usage, impact, and user satisfaction. Thus, among the various recommendations in the report, placing the citizen at the center of digital public services is crucial for any new e-gov strategy.

Based on this, the new General Guidelines for Digital Development by 2025, developed by the Digital Development Agency (DDA), include a directive that emphasizes the establishment of a citizen-centric digital administration, with an ambitious target of achieving a citizen satisfaction rate of 85%. Given the efforts and investments made, it is now more important than ever to conduct a comprehensive examination of user satisfaction and usage of e-gov systems in Morocco. The success of this national challenge requires collaboration and participation from all stakeholders, including the public, private, and academic sectors. This research has been motivated by the pressing need to address these issues in the national academic context.

2. Theoretical background

2.1. Self-Determination Theory

In the scientific literature, motivation has been associated with the satisfaction of fundamental needs, either as the driving force that pushes individuals to seek satisfaction or as the process that determines how effort is used to achieve this satisfaction (Pritchard and Payne, 2003). On the other hand, the concept of motivation is seen as a hypothetical construct that is supposed to describe the internal and/or external factors that produce the initiation, direction, intensity, and persistence of behavior (Vallerand and Thill, 1993).

Researchers in information systems have found motivation to be an intriguing construct for explaining and interpreting usage and adoption behaviors, similar to other concepts in psychology such as reasoned action and planned behavior.

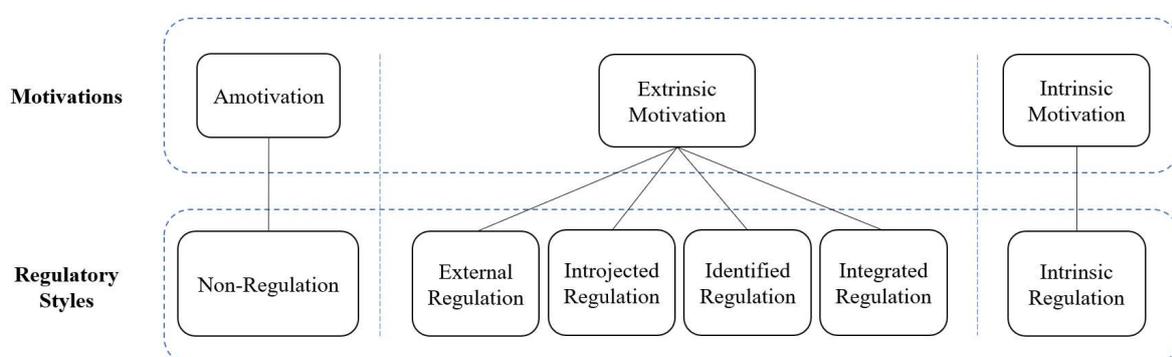
Self-Determination Theory is one of the most widely used motivation theories in IS research (Menard et al., 2017 ; Rezvani et al., 2017; Luo et al., 2021). It proposes a theoretical framework composed of two forms of motivation (intrinsic and extrinsic) centered around three fundamental psychological needs : the need for competence (feeling effective and competent), the need for relatedness (developing social relationships), and the need for autonomy (feeling free and independent making choices, and taking decisions). These needs, which are innate, essential, and universal (Deci and Ryan, 2002), play a crucial role in social development and personal well-being.

Intrinsic motivation, the first form of motivation, is inherent to the individual and emanates from within oneself. It reflects an individual's inherent desire for improvement, development, exploration, and learning. It is related to the activity itself and the satisfaction it provides.

Furthermore, extrinsic motivation, refers to the external factors that can more or less significantly influence an individual's behavior. Extrinsic motivation refers to doing something because it leads to a positive outcome for the person.

Extrinsic motivation can vary considerably and can influence an individual's behavior at various levels. The theory proposes a classification of these levels of influence into four regulations arranged along a "continuum of self-determination"

Figure n° 1 : Continuum of Self-Determination



Source : Deci and Ryan (2000).

The theory adds another level of motivation called amotivation (Figure No. 1). Amotivation is the situation in which an individual simply does not act or has no intention to act. Amotivation is the absence of motivation caused either by a lack of interest in an activity (Ryan, 1995), a feeling of insufficient competence (Bandura, 1986), or a belief that the desired outcome cannot be achieved (Seligman, 1975).

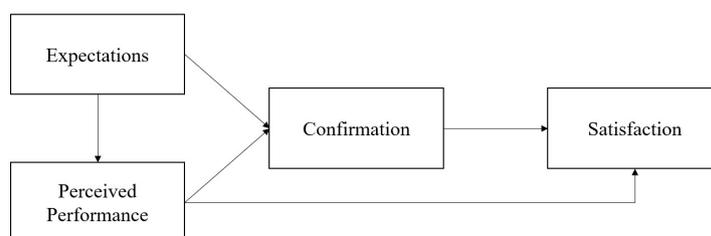
2.2. The expectation confirmation theory

The expectation confirmation theory (also known as the disconfirmation theory) is a theory primarily used in marketing research to study the determinants of consumer satisfaction and the effect of satisfaction on repurchase behavior.

The theory defines a cognitive process in which a consumer initially purchases a product based on their prior expectations and, after a period of use, begins to form an assessment of the actual performance of that product. During the usage period, the consumer compares their pre-consumption expectations with the product's performance. This evaluative confirmation process generates a feeling of satisfaction if the product's performance matches or exceeds the initial expectations, or a feeling of dissatisfaction otherwise. Ultimately, it is satisfaction that influences repurchase or abandonment behavior depending on the situation. Therefore, the theory considers satisfaction as the key factor that can predict loyalty and reuse behavior.

The model proposed by Oliver (1980) highlights the relationships among three main constructs. The first of these constructs is initial expectation, which directly influences confirmation. Perceived performance, resulting from the consumption experience, has a direct effect on confirmation and satisfaction. Furthermore, confirmation (whether positive, negative, or neutral) as the third construct directly influences satisfaction (Figure No. 2).

Figure n° 2 : Model of Expectation Confirmation Theory (ECT)



Source : Oliver (1980).

This same principle has been adopted in the field of Information Systems (IS) to study the continuance behavior of usage. The concept of consumer has been equated to that of the user, and the concept of product to that of the system. The ECT model has been adopted by Bhattacharjee (2001b) in his research on the use of online banking services, giving rise to the Model of Continued Use of Information Systems (MCUIS).

2.3. Post-Adoption Models (PAM)

In contrast to usage models like TAM 3 (Venkatesh and Bala, 2008) and UTAUT 2 (Venkatesh et al., 2012), Post-Adoption Models (PAM) focus on explaining the intention to continue using an information system or technology based on the actual user experience over time. These models aim to overcome the limitations of acceptance models, which, in their approach to usage, only consider preliminary acceptance or abandonment behavior.

This aspect of information system research acknowledges that acceptance or initial use of an information system is merely an initial step that needs to be complemented by the study of usage behavior in the post-adoption period (Jasperson et al., 2005) in order to effectively determine the actual success of an information system. Bhattacharjee (2001b) argues that despite the importance of initial acceptance, the long-term viability and eventual success of a system depend on its continuous use.

Based on Expectation Confirmation Theory (ECT) and Technology Adoption Model (TAM), Bhattacharjee proposed the first model of information system continuance, which subsequently gave rise to a whole stream of research (Nabavi et al., 2016). He posited in his research that usage continuance is primarily determined by satisfaction and perceived usefulness. The model he proposed later served as a foundation for most subsequent studies. Several proposals for integrated models and improvements followed. (See Appendix 1).

3. Research on E-Gov Services Usage continuance in Morocco

In Morocco, most studies have relied on the constructs of UTAUT and TAM acceptance models to develop their research models (Lafraxo et al., 2018; El Khalkhali and El Byere, 2018; Dahab and Bouqlila, 2020; Iaich et al., 2021; Bahetta et al., 2021; Boussta and Mdarbi, 2022; Niniss, 2022) as well as the IS success model (El Khalkhali and Yejjou, 2017; Ouiddad et al., 2018; Khadir, 2021; Fechtane et al., 2021; Elazzaoui and Lamari, 2022; Alami and Aftiss, 2022) to study usage and adoption behavior.

Regarding the study of usage continuance, Belaiassaoui And Khadir (2017) proposed an integrated model to analyze user intention in the field of open source ERP based on Bhattacharjee's (2001b) continuance model, studying the moderating effect of variables such as attitude and experience. In the context of management applications, Khadir (2022), following his proposed model in 2021 (Khadir, 2021), suggested that the technical qualities of the application and the perception of benefits (constructs from the IS success model) directly affect usage continuance. In the same context of ERP studies but in a mandatory usage context, Lamhimida And Sidmou (2020) demonstrated the importance of the impact of the environment on usage continuance, showing in their research that the imposed aspect of ERP usage automatically implies individual usage continuance.

In the e-gov context, Khaddar And El Boukhary (2019) presented a theoretical analysis of the determinants of adoption by bidders on the public procurement portal. They grouped seven determinant constructs into three groups of factors in the proposed model : individual factors, organizational factors, and technological factors.

Lafraxo et al. (2018) expanded upon the UTAUT model to investigate the acceptability of information technologies in the field of computerized accounting and tax teledeclaration in Morocco. Their findings indicated that usage intention is positively influenced by expected performance, media influence, self-manipulation, and trust in the system's governance. Conversely, Aderkaoui and al. (2018) confirmed, during their study on acceptance among employees in a public organization, that attitude and perceived risk significantly influence the intention to use e-gov systems. However, perceptions of usefulness and ease of use did not have a substantial impact on intention. In a similar vein, Moksit and Ahsina (2020) proposed a theoretical model to explore user satisfaction with e-gov systems employing the same constructs from the aforementioned models. Finally, El Khalkhali and El Byere (2018) adopted the UTAUT model while incorporating two direct influencing factors (trust, resistance to change) and one indirect influencing factor (education level).

In conclusion, despite the recent interest in information systems at the academic level, IS research in Morocco is still in a very early stage. Research on e-gov information systems is not very extensive, with most of the studies focused on analyzing usage intention and many studies presenting theoretical models only.

4. The Research Model :

The theoretical model proposed in this study is an integrative model composed of a combination of several constructs derived from the previously presented theories and organized into two perspectives. Each perspective represents an axis of influence : motivation reflects the set of internal and external factors that can influence the citizen's intention, and satisfaction refers to the degree of contentment after the usage experience.

4.1. Satisfaction :

The use of satisfaction as an explanatory variable in post-adoption research has been widely studied in various contexts (Bhattacharjee, 2001b; Limayem et al., 2007; Hadji et al., 2014; Dağhan and Akkoyunlu, 2016). Satisfaction is a feeling that occurs after an information system usage experience and is often manifested as a result of comparing actual performance with initial expectations. This relationship between confirmation, satisfaction, and intention has been demonstrated by Bhattacharjee (2001b) in his model of information system continuance, and further supported by many other post-adoption studies (see Appendix 1).

In the context of e-gov, research has clearly shown that satisfaction plays a significant role in influencing usage behavior (Welch et al., 2005 ; Jiang, 2011 ; Alawneh et al., 2013 ; Danila and Abdullah, 2014 ; Weerakkody et al., 2014 ; Al-Ma'aitah, 2019 ; Al-Kubisi, 2020 ; Nguyen et al., 2020 ; Alkrajji, 2020 ; Alkrajji and Ameen, 2022 ; Myint, 2022). Satisfaction is commonly accepted as an antecedent and an important condition that influences the intention to use and contributes to the continuance of that intention.

In this perspective, satisfaction will constitute an important construct in the proposed research model. The study will attempt to analyze its influence on intention and also how it is influenced, in return, by motivation. To do this, the following hypotheses are proposed in this research :

H1 : Expectation confirmation has a positive influence on satisfaction.

H2 : Satisfaction has a positive influence on the citizen's intention to continue using e-gov services.

4.2. Motivation

As mentioned earlier in this article, self-determination theory proposes considering motivation in two forms : intrinsic motivation, which is inherent to the individual, and extrinsic motivation, which is mostly related to the outcome of the action. This same foundation is used in IS research to study usage behavior.

Yoo et al. (2012) studied the effect of motivation on the usage of an e-learning solution. They represented each form of motivation with three different factors : anxiety, expected effort, and attitude for intrinsic motivation ; facilitating conditions, expected performance, and social influence for extrinsic motivation. They found that both forms of motivation influence employees intention, with a stronger effect of intrinsic motivation. They also proposed that intrinsic motivation has a moderating effect on extrinsic motivation.

The moderating effect of intrinsic motivation on extrinsic motivation was also found by Sällberg and Bengtsson (2016), who proposed a motivational model to study the intention to continue using smartphones and computers in Sweden. Based on three constructs (see Appendix 1), they also found that both intrinsic and extrinsic motivations directly affect intention.

Panisoara et al. (2020), in their study on the use of online instructional systems by teachers during the confinement period, demonstrated that both forms of motivation have an effect on intention. They specified that intrinsic motivation has a direct effect, while extrinsic motivation has an indirect effect. However, they found in this context that the first form of motivation has a negative effect on the second.

In the same perspective, Agrifoglio et al. (2012) revealed the predominant role of intrinsic motivation and perceived ease of use in the continued use of Twitter. Furthermore, during a study on the relationship between motivation and students' intention to use e-learning services in China, Luo et al. (2021) showed that the intention to continue the usage is strongly related to intrinsic and extrinsic motivations, each with its defining needs among the three selected needs for the study, namely : perceived belongingness, perceived competence, and perceived relatedness.

However, motivation has been rarely associated with satisfaction and usage continuance in information systems, especially in an e-gov context. In this perspective, we will try to explore the relationships that may exist between these three constructs, which are as important as they are fundamental. In this research, motivation is considered as a determining factor that needs to be introduced into the model to study its effect on the continuous usage behavior of Moroccan citizens. Thus, the following hypotheses are formulated :

H3 : Intrinsic motivation has a direct and positive influence on citizen satisfaction.

H4 : Intrinsic motivation has a direct and positive influence on the citizen's intention to continue using e-gov services.

H5 : Extrinsic motivation has a direct and positive influence on the citizen's intention to continue using e-gov services.

H6 : Intrinsic motivation has a direct and positive influence on citizen extrinsic motivation.

4.3. Continuance Intention

The intention to continue using an information system (or technology) is a concept of great importance in IS research, because it is through long-term use that we can truly assess the success of system implementation. Understanding the reasons why users continue to use a technology involves trying to determine the factors that influence their decisions (intention) and their behavior (usage). This approach is essential to ensure the viability and sustainability of information systems (Bhattacharjee, 2001b).

Continued usage is considered as a behavior that occurs following the adoption of a system (application, technology, etc.) once the system is installed, made accessible, and used to perform tasks at work (Jasperson et al., 2005). Continuance usage has also been linked to the user's willingness to use a system in the future and recommend it to others (Chang, 2013). In general, all definitions agree that continued usage is a behavior undertaken by the user following reasonable utilization of a system over time. Duration and conscious decision-making are therefore two essential aspects of continued usage behavior.

In e-gov research, the intention to continue using a system has been rarely addressed (Nabavi, 2016). The results of data analysis from a study on the use of online public services in Jordan by Almahamid And Mcadams (2010) revealed that the intention to continue using these services depends on perceived usefulness, perceived ease of use, perceived self-efficacy, and perceived information quality.

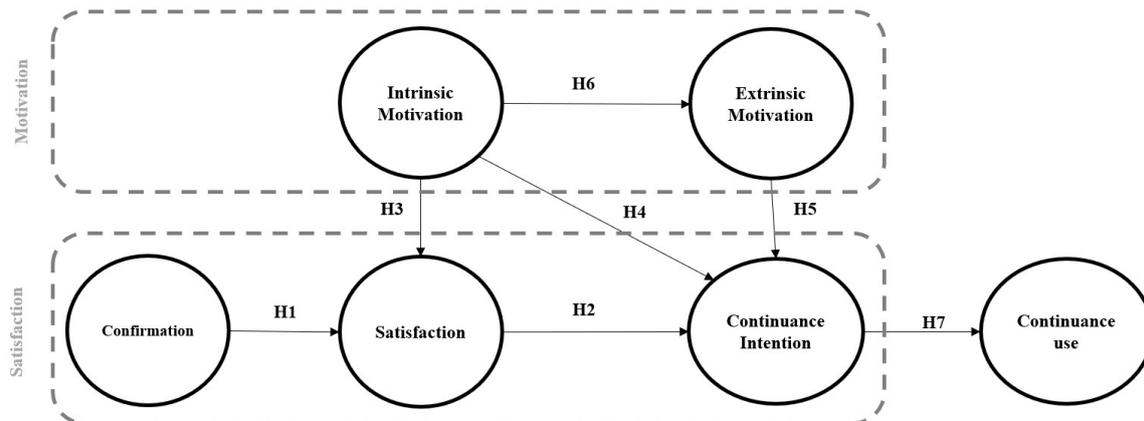
Teo et al. (2008), using the IS Success Model, show that trust in the government is positively related to trust in e-gov websites. Furthermore, trust in e-gov websites is positively linked to system quality, which in turn have direct but different effects on satisfaction and the intention to continue using these sites.

This research will not only focus on studying intention but will also take into account continued usage behavior. Thus, it proposes the following hypothesis :

H7 : The intention to continue using e-gov services has a direct and positive influence on continued usage.

Therefore, to conduct the study, we propose the following research model :

Figure n° 3 : Proposed research model



Source : Author

Conclusion

Nowadays, the importance of information systems for improving the performance and efficiency of public administration is undeniable. This importance has been further emphasized by the rapid growth of ICT and the increasing scale of digital transition and digitization projects. The success of digitalization depends on the involvement of citizens and their long-term adoption of the various services offered by the government. This requires the administration to pay special attention to citizen motivation and satisfaction, now more than ever.

This research falls within the field of information systems management theories, specifically in the evaluation and study of usage intentions and behaviors. The study contributes to scientific research by analyzing and testing the concepts and formulas of continuation usage theories.

Indeed, this study offers several scientific particularities and implications, including :

- Identifying the determinants that influence the continued usage of e-gov systems and services in Morocco ;

- Analyzing the impact of motivation on satisfaction and intention ;
- Empirically testing Bhattacharjee's (2001b) model of continued usage of information systems in the Moroccan context ;
- Proposing a new extension of the model of continued usage of information systems.

This research also has several managerial and socio-economic implications, including :

- Determining the influencing factors on the satisfaction of Moroccan citizens and highlighting key factors to consider in the strategy of digitizing public services ;
- Providing public authorities with a scientific study of citizen motivation regarding the continued usage of e-gov services ;
- Identifying action levers that facilitate the adoption of e-gov information systems ;
- Understanding citizens' usage behavior in Morocco ;
- Proposing a model of continued usage of e-gov systems in Morocco.

After constructing the research model, the next step will involve conducting an empirical study with citizens to collect the necessary information for conducting appropriate analyses, drawing appropriate conclusions, and providing answers to all the hypotheses formulated in this article. The empirical study will be conducted through an online questionnaire that will include questions related to the constructs of interest. The results and findings of the survey will be presented and discussed in a separate article.

Appendix

Table n° 1 : Summary of Research Literature Used in the Study.

Author(s)	Subject	Theory(ies) Mobilized	Construct(s)	Main Results
Tam, and al (2018)	Extension of ECM through the study of mobile app usage	Expectation Confirmation Model (ECM), UTAUT 2	Expected effort, expected performance, social influence, hedonic motivation, price, habits, facilitating conditions	The intention to continue using mobile apps is influenced by satisfaction, habit, expected performance, and expected effort.

Author(s)	Subject	Theory(ies) Mobilized	Construct(s)	Main Results
Degoulet (2014)	Post-adoption evaluation of a clinical information system	ECM	Perceived usefulness, perceived ease of use, user support, compatibility, individual characteristics	Satisfaction is determined by user support, ease of use, and confirmation.
Venkatesh, et al (2011)	Extension of the information systems continuance model with the integration of UTAUT predictors	ECM, UTAUT	Expected effort, social influence, facilitating conditions, trust, context	The proposed model explains changes in pre-usage beliefs and attitudes through the studied constructs; the constructs also influence intention to continue.
Mlaiki, et al (2012)	Study of continuance of use of Digital Social Networks (DSNs): Case of Facebook	Theory of Planned Behavior (TPB)	Hedonic benefit, Utilitarian benefit, Perceived ease of use, Perceived effectiveness, attitude, behavioral control, Perceived shyness	Intention to continue using DSNs is determined by attitude and perceived control; social influence has no determining effect; shyness has a negative effect on intention.
Najmul Islam (2011)	Extension of the information systems continuance model with system quality in the context of e-learning	ECM; PAM	Perceived system quality	There is no direct significant relationship between perceived system quality and continuance; system quality indirectly influences intention through perceived usefulness and satisfaction.
Dağhan, et al (2016)	Proposed model of continuance intention in e-learning environments	ECM; TCT; Cognitive Model; IS Success Model	Utility value, Outcome expectations, Perceived value, Perceived usability	System quality variables have a significant effect on confirmation and satisfaction; confirmation has a predictive effect on satisfaction; satisfaction has a predictive effect on intention to continue.

Author(s)	Subject	Theory(ies) Mobilized	Construct(s)	Main Results
Sällberg and Bengtsson (2016)	Proposed motivational model for continuance of PC and Smartphone use	Motivational Model	Technology knowledge, Intrinsic motivation, Extrinsic motivation	Intrinsic motivation influences intention to continue using computers and smartphones; extrinsic motivation influences intention to continue using computers but not smartphones; technology knowledge influences intention to continue using computers but not smartphones; intrinsic motivation has a positive influence on extrinsic motivation and technology knowledge.
Wangpipatwong, et al (2008)	Determining key influencing factors of intention to use e-gov websites among citizens	Technology Acceptance Model (TAM); Self-Efficacy Model	Perceived usefulness, perceived ease of use, self-efficacy	Perceived usefulness, perceived ease of use, and self-efficacy have a direct effect on intention; perceived ease of use indirectly affects intention through perceived usefulness.
Limayem, et al (2007)	Study of continuance of use of internet-based information systems and learning technologies	ECM; Information Systems Continuance Model	Habits	Habits have a significant moderating effect on the relationship between continuance intention and continued use of the information system.
Bøe, et al (2021)	Study of continuance of e-learning technology use in higher education from a managerial perspective	Information Systems Continuance Model; Principal-Agent Theory	Incentives, Goal Congruence	Goal congruence has an effect on intention; managerial incentives have an effect on educators' intention; managerial goal congruence reduces the effect of incentives on intention.

Author(s)	Subject	Theory(ies) Mobilized	Construct(s)	Main Results
Chiu et al (2021)	Study of consumers' intention to use health and fitness applications	ECM; Investment Model (IM)	Investment size, commitment, quality of alternatives	Satisfaction and investment size have a positive effect on commitment, which in turn has a positive impact on intention. Expectation confirmation has a positive impact on investment size.
Shaikh and Karjaluoto. (2016)	Study of continuance of use of mobile banking services	Information Systems Continuance Model	Self-congruence, perceived risk, perceived value, word-of-mouth	The study confirms the direct relationships between: (1) Self-congruence and perceived value, (2) Perceived risk and perceived value, (3) Perceived value and continued use, (4) Continued use and word-of-mouth.
Chang (2013)	Determining influencing factors on intention to continue e-learning system use in academic libraries	IS Success Model ; ECM	System quality, information quality, service quality, perceived value	System quality significantly influences perceived value and user satisfaction ; perceived value and satisfaction are determinants of intention.
Nugroho et al (2019)	Studying the effect of satisfaction on perceived value and e-learning usage	IS Success Model ; ECM; IS Continuance Model	Perceived value	Perceived value has an impact on intention ; satisfaction mediates the relationship between perceived value and intention.

Author(s)	Subject	Theory(ies) Mobilized	Construct(s)	Main Results
Wang et al (2020)	Study of the relationship between perceived value and intention to continue using mobile public services	Information Systems Continuance Model	Perceived value, compatibility, relative advantage	Mobility, localizability, and personalization influence perceived value, which in turn has an influence on intention; perceived value mediates the relationships between mobility, personalization, and distance; compatibility moderates the relationship between perceived value and mobility, localization, and security (but not personalization), as well as between perceived value and intention.
Singh (2020)	Proposed integrated model combining ECM and UTAUT to explain post-adoption behavior of mobile payment systems	UTAUT ; ECM	Expected performance, expected effort, trust, perceived security	Satisfaction, trust, expected performance, and expected effort significantly influence intention.

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