

User's Perspective of Eletronic Government Adoption in Brazil

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Abstract: The objective of this work was to study which factors influence the use of e-government in Brazil, focusing on investigating government computerization initiatives of fiscal control mechanisms, through a study on the Nota Fiscal Paulista program. We interviewed approximately 3,500 citizens who have used the program, in 11 cities in the State of São Paulo. Of this total, 715 responses were considered valid. We used a quantitative methodology for the development of this research, through the multivariate analysis technique of structural equation modeling. The study presented a robust model with a high explanatory power, in which the influencing factors are: Perceived Benefit; Perceived Ease of Use; Social Influence; Perceived Security; Trust in the Government and Habit.

Keywords: e-Government; technology adoption; information technology; Brazil.

Submitted: July 5th 2015 / Approved: Jun 14th 2016

Introduction

Information and communication technology (ICT) permeates human actions, observing effects of this presence in various social segments. The fast ICT development, especially the Internet and its appropriation by the people have caused substantial changes in organizations and work, changing and transforming the socioeconomic order (education, industry, trade, tourism, telecommunications etc). Currently, companies invest about 7.6% of their revenue in information technology (IT), a value which has tripled in the last 18 years (Meirelles, 2016). This intensive IT use in all sectors has also spread in the Public Administration, becoming indispensable in this area. The use of IT combined with the internet as a public management tool is called e-government/e-Gov and aims to better qualify the provision of services (e-Service) and maximize the Public Administration efficiency (e-Administration), enabling citizens to a so desired more effective participation (e-Democracy) in the political process.

According to Shareef, Kumar, Kumar and Dwivedi (2011), concepts and theories on e-government are in a definition process, as it is a recent area of study, still in development. Considered essential element in improving public management, e-Gov has different stages and models in different countries, with a common guideline the provision of good services to citizens (United Nations, 2010). The movement originated due to the growing development and popularization of technologies highlights the need for understanding the adoption of both products and services they provide. This understanding would allow the governments to implement benefits to society through public policies of inclusion and services for the citizens' quality of life. At the same time, the individuals would accept and use of such technologies (Goodhue, 2007).

In the e-Government concept, IT is a tool by which, through e-Services, citizen and state interaction occurs. We can infer that e-Gov

implementation is linked to the citizens' desire (Evans & Yen, 2005; Shareef, Kumar, Kumar, & Dwivedi, 2009, 2011), with its accession depending on its acceptance, dissemination and success of propositions and policies inherent to e-Gov. There are several studies in different countries studying the e-Gov adoption, as in Canada (Shareef et al., 2011), in the United States (Carter & Bélanger, 2005), in Netherlands (Horst, Kuttschreuter, & Gutteling, 2007), in Singapore (Fu, Farn, & Chao, 2006), In Romania (Colesca & Liliiana, 2008), in Turkey (Ozkan & Kanat, 2011), among others. Those studies have shown different results; however, all the suggested models are based or adapted from current acceptance technology theories, such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). The models differences indicate a generalization difficulty from one context to another, due to cultural differences and different stages of the e-Gov development in the countries. Therefore, studying and researching the users' resistance and adhesion of e-Gov technologies in Brazil is an opportunity to collaborate on a model development for the country's reality, and identifying its factors can enable its administration more effectively, increasing opportunities for positive results. Thus, the objective of this work was to study what factors influence the use of e-government in Brazil, focusing on investigating government computerization initiatives of fiscal control mechanisms, through a study on the Nota Fiscal Paulista program.

2. Theoretical Framework

2.1 Models of technological adoption

Contemporary theorists have examined the study of people's acceptance and adoption of technology, proposing theoretical models based on social psychology; the diversity of such models lies on determinants for such adoption. In order to explain and increase the acceptance of individuals with regard to the technologies, it is necessary to understand the reasons that lead them to adopt or reject IT (Davis, 1989).

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Models intending to predict the acceptance and use of technology emerged with Davis (1989) and the Technology Acceptance Model (TAM). Starting from the TAM model, several other researchers conducted studies, deepening the knowledge of acceptance and technological adoption in some areas of knowledge related to information technology.

The more highlighted article of technological adoption belongs to Venkatesh et al. (2003), which feature one of the most widespread models in the IT literature. Venkatesh et al., (2003) suggested a model with eight prominent models in the area and empirically compare their dimensions, seeking convergence to its integrated model, named Unified Theory of Acceptance and Use of Technology (UTAUT). Venkatesh's model was presented as a way for administrators to assess the success probability of new technologies introduction, assisting in understanding the initiative.

This Venkatesh et al., (2003) unified model led to significant progress in understanding adoption and use of technology, although its focus has been primarily on individual processes of psychological level and contingencies that arise as related technology perceptions and situational factors, respectively (Venkatesh et al., 2003). UTAUT was initially developed for organizational context. Some years later, Venkatesh, Thong and Xu (2012) developed the UTAUT2, extending the acceptance model and use of technology to the consumer context.

2. 2 Adoption of e-services

E-service is defined as services that are offered, provided and/or consumed by the internet (Swid & ElMelegy, 2012). E-services include processes, policies, procedures, personnel, tools and technologies that enable companies to provide customer service using the Internet as a platform (Featherman & Fuller, 2003). These e-services are offered to consumers, not only to provide better customer service, but also to download the labor-intensive activities from the provider to the consumer (Featherman & Fuller, 2003; Moraes, Meirelles, & Cappellozza, 2016).

The adoption of e-service differs from what occurs with basic shopping in e-commerce in terms of complexity and long-term relationship between the consumer and the service providers. The adoption and use of e-services depend on many factors such as utility and ease of use perception, inherent risk concerns and trust (Hoffman et al., 1995).

Consumers are hesitant to try new e-services for several reasons. However, an obstacle often cited is the fear of the possible negative consequences related to the use of the Internet as a means of transaction (Jarvenpaa & Tractinsky, 1999). Consumers' concerns about the dangers and uncertainties have been mentioned in the literature as Perceived Risk and Perceived Security. While Perceived Risk is an inhibitor to purchase products and services adoption, including information systems (IS), Perceived Security is an influencer.

Trust is also a determining factor in the users' perception, affecting the adoption and use of electronic services. In developed countries, adopting e-services has greatly increased; however, in developing

countries the rate of adoption has yet to evolve, lacking more research (Swid & ElMelegy, 2012; Moraes, Meirelles, & Cappellozza, 2016). When the citizen gets interested on e-service, the propensity to use increases. However, when consumers realize that there is a risk to buy a product or use a service, there are marked changes in their behavior. Researches in e-services have adopted similar strategies to research strategies in IT adoption. As subsidy, they use adoption models such as TAM, and complement with factors inherent to services.

2. 3 E-Gov in Brazil

The use of information by the Brazilian government is prior to the 1950s, but the use of the term e-Government is from 1996, with e-services provided by the Brazilian federal government (Ferrer & Santos, 2004). Services such as the delivery of the income tax declaration, information on social security and government procurement are available on the Internet since 1998, and in 2000 was defined and established the Electronic Government Policy and the launch of the Society Program information, consolidating and spreading e-government and the social importance of digital inclusion strategies, as well as actions related to information technology in the country, deploying through structures and legal guidelines the e-government in the country (Ferrer & Santos, 2004).

Scholars of e-Gov in Brazil could prove the e-government program success until 2003, transition of the federal government, when its program was no longer a priority, because of four factors identified by Pinto and Fernandes (2005):

- Change in political leadership, with different involvement of new employees;
- Absence of inter-bureaucratic coordination, with no longer program responsible subjects in several Ministries;
- Problems in connecting with the society, causing discontinuity in partnerships and companies that provide technological services;
- Lack of resources for the e-Gov program, subsisting projects of specific sectors, yet isolated from an aligned policy development.

Such factors may have interfered for the fact that Brazil, which in 2005 was classified on the 33rd position, went for the 45th place in the UN world ranking of e-Gov, in 2008. In a 2010 survey, Brazil placed 65th position, meaning that in five years the Brazilian e-Gov accumulated loss of 32 positions (United Nations, 2010).

Despite this noticeable decline, Brazil stands out in specific initiatives such as the Open Government and Open Data, mentioned in the UN report as an example of good practices for having a single goal of access to public data. The online service insufficiency and poor telecommunications infrastructure are indicated in that report as the main causes for the Brazilian classification.

Currently, the Brazilian government offers to citizens several e-Gov systems. Among the most important are:

a) IRS – income tax collection services; taxpayer’s fiscal status; social security and national register of legal entities registration; statements; among others.

b) Federal Police – services such as passport application; statements of criminal records; support for international adoptions; among others.

c) Integrated System of Financial Administration of the Federal Government (SIAFI, in Portuguese) – interests linked to the national treasury, as availability of public spending.

e) Poupa Tempo (a state of São Paulo program) – access to public service information, such as documents request and opening and closing a business.

f) OntoJuris Project – providing legislation information in intellectual property, consumer rights and electronic rights.

g) Public Digital Bookkeeping System (SPED, in Portuguese) – tax information, rationalization and standardization of ancillary obligations to taxpayers.

h) Compras Net – shopping website of the federal government, with equivalents websites in most states and in many municipalities.

2.4 Nota Fiscal Paulista program

To understand the adoption of e-government in Brazil, the Nota Fiscal Paulista program (NFP) was chosen; it is a pioneering initiative developed in the state of São Paulo and is gradually being replicated to the rest of the country.

The e-Government program in São Paulo began in 1995 when the state government took over its management, with the objective to stimulate and implement the modernization of Public Administration. The program involved all State Departments, put together the governmental structure and heads of various levels, in a collective effort. The Nota Fiscal Paulista program (NFP) had its beginning on October 1, 2007, as part of the Stimulus Program for Fiscal Citizenship of the State of São Paulo; it is a specific program of this state, with the support of Law 12685/2007 and Decree 52096/2007 and 54179/2009. The program is part of the context of electronic information exchange between the Tax Authorities and taxpayers and use of the Internet as a service platform. Typified as citizenship fiscal action, NFP aims at: encouraging consumer of goods; intermunicipal and interstate goods and transport services to require the tax document; reducing informal and illegal products trade and combat tax evasion. Its origin occurred in a similar program implemented in 2006 in the City of São Paulo, named Tax Invoice of Electronic Services (NFS-e, in Portuguese), which provides credits to discount up to 50% in property tax for consumers who inform their social security in the tax invoice.

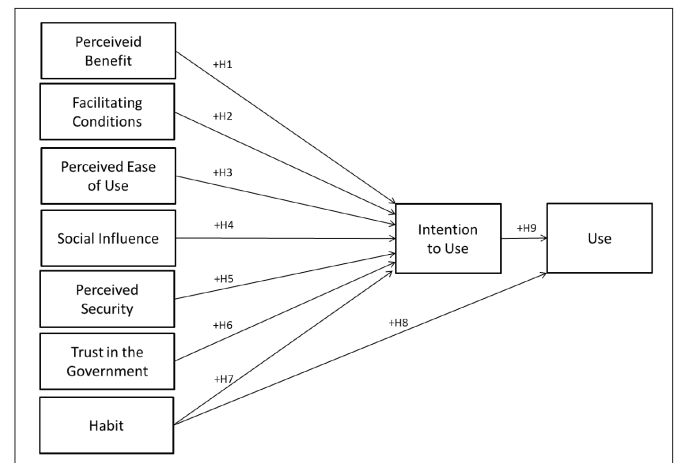
In the NFS-e program, the individual consumer receives 30% of the Service Tax (ISS, in Portuguese) collected by the service provider. That is, for each tax invoice, the consumers are entitled to 30% of their collected Service Tax until the beginning of next month.

The NFP implementation was progressive and industry adoption has become mandatory through a plan that occurred from October 2007 to September 2009, according to the NCEA – National Code of Economic Activity – of the market. The digital inclusion issue of the lower classes was treated and operated by Program Access São Paulo, which provides access to the Internet and its services, currently with 629 public places and 3,400 machines. The operation of the incentive is as follows: the consumer signs up on the program’s website and at every purchase informs the social security or national register of legal entities to issue the invoice, getting reduction in the tax burden; the consumer can also not identify the social security number, donating the tax vouchers for social assistance entities or healthcare, they will receive the credit of that purchase; the registered and identified consumer can earn prizes, sponsored by the Department of Finance.

3 Proposed Model

According to the literature review, we developed a model which best served the purpose of this study (Figure 1), which aims to identify what are the elements that determine the adoption of e-government in Brazil. To Whetten (1989), the visual representation facilitates the theoretical model understanding.

Figure 1. Conceptual model of research



Models presented many generalization difficulties, due to cultural differences, e-government deployment phases and economic development of the countries. Thus, we decided to develop a model according to the Brazilian context. The proposed model was based on the theories of IT adoption, e-service adoption models, e-commerce and e-Gov. Table 1 shows the explanation of the constructs.

Table 1: Constructs

Constructs	Definition
Perceived Benefit	Benefits in terms of financial aspects, accessibility, availability, comfort in use, saving time, convenience, and also social aspects, in which the individual works with the society and the government, being aware that the requirement of the invoice should bring greater revenue for the state and possible improvements for the citizens.
Facilitating Conditions	They consider the ease of computer access, internet and governmental infrastructure (call centers and cyber cafes, for example).
Perceived Ease of Use	It indicates that e-government initiatives should not be adopted if the citizen has no ability to use the technology to access the necessary information available.
Social Influence	It is the degree to which the individual considers important if others believe he/she should use a new system; the opinion importance of people who influence the individual's behavior
Perceived Security	It is linked to the consumer protection from any kind of risk, financial or otherwise, during transactions on websites, for example, any risk of identity theft and citizen confidential information.
Trust in the Government	It is related to the degree of citizens' trust in the government. It assures that the information provided is not used against their interests in other sectors (for example, a cross-check with the IRS) or provided or sold to private companies.
Habit	It is defined as the extent to which people tend to behave automatically because of learning. Thus, citizens who are used to require the NFP tend to increase the Intention to Use and effective program Use.

Table 1. Explanation of the constructs.

Table 2: summarizes the hypotheses of this study, with their theoretical bases.

Hypo-thesis	Description	Theoretical Basis
H1	Perceived Benefit positively influences the NFP Intention to Use	Horst et al., (2007); Shareef et al., (2011); Venkatesh et al., (2012).
H2	Facilitating Conditions positively influence the NFP Intention to Use	Venkatesh et al., (2003); AlAwadhi and Morris (2008); Venkatesh et al., (2012).
H3	Perceived Ease of Use positively influences the NFP Intention to Use	Davis (1989); Carter and Bélanger (2005); Hung et al., (2006); Colesca and Liliana (2008); Shareef et al., (2009); Shareef et al., (2010).
H4	Social Influence positively affect the NFP Intention to Use	Venkatesh et al., (2003); AlAwadhi and Morris (2008); Venkatesh et al., (2012).
H5	Perceived Security positively influences the NFP Intention to Use	Suh and Han (2003); Shareef et al., (2009); Özgüven (2011); Shin and Shin (2011).
H6	Trust in the Government positively influences the NFP Intention to Use	Horst et al., (2007); Colesca and Liliana (2008); AlShafi and Weerakkody (2008); Shareef et al., (2009); Ozkan and Kanat (2011).
H7	Habit positively influences the NFP Intention to Use	Limayem et al., (2007); Venkatesh et al., (2012).
H8	Habit positively influences the NFP Use)	Venkatesh et al., (2012).
H9	Intention to Use positively influences the NFP Use	Venkatesh et al., (2003); Venkatesh et al., (2012).

Table 2. Study hypotheses

4 Methodological Aspects

For the development of this research we used the quantitative methodology, through multivariate data analysis. Given the characteristics of this research, in which theories on adoption of e-government are poorly developed, the objectives are prediction and explanation of the proposed constructs, and as the structural model is complex, we chose to use the Partial Least Squares Path Modeling (PLS-SEM), according to Hair, Hult, Ringle and Sarstedt (2013) suggestions.

We conducted interviews with citizens to obtain data for use of PLS-SEM, using a survey for data collection, based on Heeks and Bailur (2007) suggestions about e-Gov research. The preliminary questionnaire was validated by a group composed of nine specialists,

including: academics who study e-Gov; academics who study technological adoption models and managers directly involved in e-government programs. The scales were adapted from previous studies.

We interviewed about 3,500 citizens who have used the Nota Fical Paulista program. Of this total, 715 responses were considered valid. To verify if the sample size was adequate, we performed the test through the G*Power 3.1 software (Faul, Erdfelder, Buchner, & Lang, 2009), which is a statistical analysis program commonly used in social, behavioral and biomedical sciences. We performed post hoc analysis test (Cohen, 1988) to verify the probability of rejecting H0 when it is not true (1-β). Placing the values of this study in the G*Power 3 software, with the effect size (f2) of 0.10, we obtained as a result 0.99 for the power test (1-β), a value considered appropriate for sample size.

To sample stratification definition, we opted for the use of Municipalities Participation Index. The indicator represents a percentage indication to be applied to 25% of the amount of the Tax on Circulation of Goods and Services for Interstate and Intercity Transportation and Communication collection (ICMS, in Portuguese) and allows the State to deliver the shares of the municipalities relating to income tax.

Thus, we understand that the municipalities with the highest revenues are those that emit greater amount of tax invoice, and possibly present greater use of the NFP. Therefore, the survey was conducted in 11 cities in the State of São Paulo with the highest rates, using the average index of the last six years to define the amount of interviews in each city, according to Table 3.

	CITY	AVERAGE INDEX	%	INTERVIEWS
1	SÃO PAULO	23,20	50,17%	351
2	GUARULHOS	3,53	7,63%	53
3	SÃO BERNARDO DO CAMPO	3,48	7,52%	50
4	PAULÍNIA	2,73	5,90%	39
5	CAMPINAS	2,67	5,77%	42
6	SÃO JOSÉ DOS CAMPOS	2,46	5,32%	38
7	BARUERI	2,42	5,23%	35
8	JUNDIAÍ	1,59	3,45%	27
9	SOROCABA	1,44	3,12%	25
10	OSASCO	1,37	2,96%	28
11	RIBEIRÃO PRETO	1,36	2,93%	27
	TOTAL	-	100,00%	715

Table 3. Number of interviews by municipality

All questions were measured using a Likert scale of seven points, as occurred in studies that used similar models to IT adoption. The interviewees answered with variations between the extremes “Strongly Disagree” until “Strongly Agree”. The questions were in random order in the questionnaire.

For calculation and validation of statistical tests, developed by multivariate analysis technique of structural equation modeling, we used the softwares SmartPLS 2.0.M3 (Ringle, Wende, & Will, 2005) and Minitab 14.

5 Descriptions and Analysis of Results

According to Hair et al., (2013), the evaluation criteria of reflective measurement models are:

- Internal consistency (composite reliability);
- Reliability of the indicator;
- Convergent validity (average variance extracted);
- Discriminant Validity.

To examine the convergent and discriminant validity of the constructs used in the structural model we performed the Confirmatory Factor Analysis (Hair et al., 2005). All constructs showed indicators with high loads in their latent variables, above 0.70, and low loads in the other latent variables, indicating reasonable discriminant and convergent validity (Chin, 1998). The only indicator which does not have a value exceeding 0.70 is USO4, which has the value 0.697, very close to the acceptable. For the model convergent validity, another indicator used is the average variance extracted (AVE) value that, as a criterion for validation, should have a value greater than 0.5 (Hair et al., 2013).

A key measure used to assess the measurement model, in addition to the tests for each indicator, is the composite reliability of each construct (Hair et al., 2005; Hair et al., 2013). The composite reliability describes the degree to which the indicators represent the latent construct in common. A standard commonly used for acceptable trust is 0.70.

Checking the internal consistency was another indicator used to analyze the convergent validity. A high internal consistency value in the construct indicates that all variables represent the same latent construct. The internal consistency is evaluated by means of the Cronbach's alpha, ranging from 0 to 1, with higher values, indicating a high consistency level. For exploratory studies, values between 0.60 and 0.70 are considered acceptable; for studies in more advanced stages, values between 0.70 and 0.90 are considered satisfactory (Hair et al., 2013). Table 4 shows all the mentioned indicators.

Values of all indicators are within the established by the authors, with the exception of the internal consistency value for the Facilitating Conditions indicator, presenting values below appropriate. According to Hair et al., (2013) Cronbach's alpha is sensitive to the number of items in the scale, and usually tends to underestimate the internal consistency; therefore it is more appropriate the composite reliability evaluation, in which the indicator showed appropriate values.

The indicators analysis of the significance was carried out with the values calculated by the bootstrapping technique (Efron & Tibshirani, 1998). The use of bootstrapping technique to analyze the loads significance obtained for the observable variables is not based only on one model estimation; nevertheless it calculates parameter estimates and their confidence intervals based on multiple estimates (Hair, Anderson, Tatham, & Black, 2005; Hair, Hult, Ringle, & Sarstedt, 2013).

	PB	FC	TGOV	PEOU	HAB	INT	SI	PS	USE
PB	0,791								
FC	0,398	0,725							
TGOV	0,558	0,375	0,826						
PEOU	0,394	0,505	0,351	0,777					
HAB	0,564	0,271	0,346	0,311	0,821				
INT	0,620	0,400	0,490	0,463	0,608	0,839			
SI	0,521	0,418	0,431	0,311	0,391	0,475	0,789		
PS	0,454	0,531	0,573	0,538	0,357	0,507	0,442	0,826	
USE	0,458	0,428	0,278	0,447	0,658	0,706	0,430	0,477	0,783
AVE	0,626	0,525	0,682	0,604	0,674	0,704	0,622	0,682	0,613
Composite reliability	0,833	0,768	0,866	0,859	0,892	0,905	0,868	0,864	0,863
Cronbachs Alpha	0,702	0,549	0,767	0,780	0,839	0,859	0,796	0,767	0,788

Table 4. Synthesis of evaluation of measurement models

In this research there was a resampling of 5,000 samples, with replacement of 715 cases, according to Hair et al., (2013) recommendations. Thus, Student's t statistics analyzes the hypothesis that the correlation coefficients are equal to zero. If the results of this test show values higher than 1.96, the hypothesis is rejected and the correlation is significant (Efron & Tibshirani, 1998; Hair et al., 2013).

Table 5 presents the coefficients values between the constructs and their respective Student's t statistics. The values were estimated by the bootstrapping technique. All relation values, except for Facilitating Conditions regarding Intention to Use, presented Student's t values higher than 1.96 (significance level = 5%). The t test value for Facilitating Conditions with Intention to Use was 0.79, with a p-value of 0.43. This value means that the Facilitating Conditions construct does no influence on the Intent for Adoption of the NFP, not confirming the Hypothesis 2.

Relation between Constructs	Strutural coefficient (Average)	Standatd deviation	T test	p-value (two-tailed)
Perceived Benefits -> Intention to Use	0,22	0,05	4,33	0,00
Facilitating Conditions -> Intention to Use	0,03	0,02	0,79	0,43
Trust -> Intention to Use	0,09	0,04	2,35	0,02
Perceived Ease of Use -> Intention to Use	0,14	0,04	3,58	0,00
Habit -> Intention to Use	0,33	0,05	6,73	0,00
Habit -> Uso	0,36	0,04	8,18	0,00
Intention to Use -> Uso	0,49	0,04	11,46	0,00
Social Influence -> Intention to Use	0,09	0,03	2,59	0,01
Perceived Security -> Intention to Use	0,11	0,04	2,52	0,01

Table 5. Structural model coefficients – between constructs

Figure 2 shows the resulting model with a synthesis of the hypotheses validation.

Analyzing the coefficient of determination (r^2), according to Cohen's scale (1977), the model has a high value for both Intention to Use

as for the effective Use of the NFP, and the amounts are respectively 0.555 and 0.581. However, according to the scale of Hair, Hult, Ringle and Sarstedt (2013), the values are considered moderate, though adequate.

Figure 2. Synthesis of validation of hypotheses as the conceptual model

Obs.: NS=not significant ** p<0.05; * p<0.01

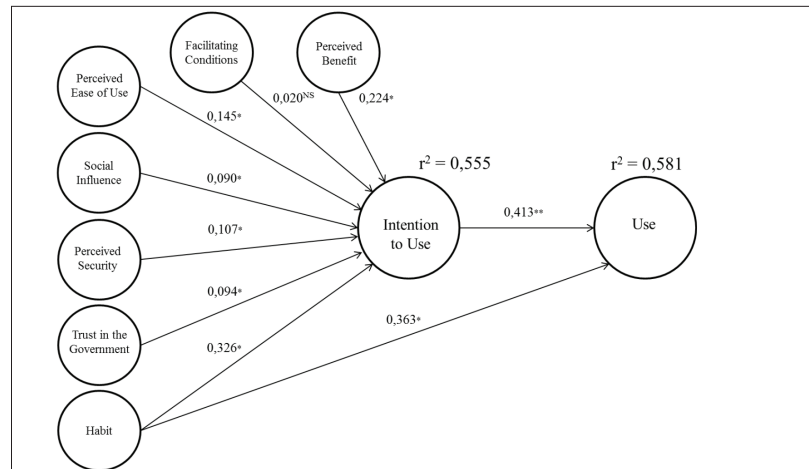


Table 6 presents a synthesis of the tests of this study hypothesis.

Hypothesis	DESCRIPTION	RESULT
H1	<i>Perceived benefit positively influences the NFP Intention to Use</i>	CONFIRMED
H2	<i>Facilitating conditions positively influence the NFP Intention to Use</i>	NON-CONFIRMED
H3	<i>Perceived Ease of Use positively influences the NFP Intention to Use</i>	CONFIRMED
H4	<i>Social influence positively affect the NFP Intention to Use</i>	CONFIRMED
H5	<i>Perceived Security positively influences the NFP Intention to Use</i>	CONFIRMED
H6	<i>Trust in the Government positively influences the NFP Intention to Use</i>	CONFIRMED
H7	<i>Habit positively influences the NFP Intention to Use</i>	CONFIRMED
H8	<i>Habit positively influences the NFP Use</i>	CONFIRMED
H9	<i>Intention to Use positively influences the NFP Use</i>	CONFIRMED

Table 6. Synthesis of tests of the hypothesis of this study

6. Conclusions

The study presented a robust model with a high explanatory power, in which the influencing factors are: Perceived Benefit; Perceived Ease of Use; Social Influence; Perceived Security; Trust in the Government and Habit.

The model is at the confluence of several other models developed by IT researchers related to individual use of technology; however, it has unique characteristics because it was developed in a still unexplored area.

The results contribute to IT researches, with a model that reinforces and extends previous studies on technological adoption (as theories UTAUT and UTAUT2), research in e-commerce and e-government, adding a model in a new context yet unexplored.

The existing models in the literature cannot represent all the dimensions addressed in the model presented in this study, because they do not take into account specific NFP program aspects.

According to the research, the main factor for Intention to Use is Habit, positively influencing the Intention to Use and directly influencing the Use. Thus, in the e-government context, the more citizens are accustomed to using the programs, the greater the intention of keep using them.

Perceived Benefit highlights as a second factor, also positively influencing the Intention to Use e-Gov. We consider benefits in terms of financial aspects, accessibility, availability, comfort in use, saving time, convenience, and also social aspects, in which the individual works with the society and the government, being aware that the

requirement of the invoice should bring greater revenue for the state and possible improvements for the citizens. The Perceived Ease of Use construct is the third most influential factor in the Intent of Adoption and concerns the ability to use technology to access necessary information available. Thus, the greater the ability of citizens to browse the website, access the account, check and use the NFP credits, the greater the intention to use the program. Perceived Security, Social Influence and Trust in Government greatly influence the Intention to Use the e-Gov. The Perceived Security influence shows the importance of practicing safety measures to ensure users' data confidentiality as well as minimize the fear of financial transactions over the Internet. In the case of e-government, Perceived Security can be understood as the extent to which the citizen believes that the use of the programs is free of risks.

Regarding Social Influence, we observed that people who are important in the citizen's social circle exert influence on the use of the e-Gov programs, with respect to initiatives for the computerization of fiscal control.

The Trust construct is related to citizens' trust in the government. In the case of NFP, trust in the government exerts a positive influence, which means that, in general, citizens are not afraid to provide information about their purchases, since they consider the credit reliable and they do not believe their tax data shall be used for other purposes.

The only construct that had no influence on Intention to Use was the Facilitating Conditions construct. The construct is related to technical knowledge on the use of the program, to the support availability and to the similarity with other operations already carried out by the user.

In relation to the effective Use of the NFP program, selected and tested factors were: Intention to Use and Habit. In this case, both constructs showed positive results and positively influence the Use of the program. In practical terms, the research assists in the citizens' participation and involvement in the current e-government development phase in Brazil, exposing users' perceptions. According to Olphert and Damodaran (2007), such participation is important in order to maximize the potential benefits for the government and for the citizens. Understanding the factors that positively influence the adoption of the Nota Fical Paulista program and clarifying this technology influence in users' personal and professional lives, it is possible to improve the quality of service to meet the society demands. Thus, it also allows an increase in the Brazilian e-Gov initiatives adoption.

The findings also support faster deployment of the program in other administrative contexts for e-Gov, generating useful information for the main points to be considered in order to increase citizens' use and the chances of successful implementation. Some author's suggestions regarding actions that government agencies interested in implementing or improving similar NFP fiscal controls initiatives are:

Enabling, stimulating and disseminating projects and places for use of internet in public places. The ability to use technology to access programs information influences the spread of the program.

Therefore, it is necessary to offer possibilities and accessibility to users. Some examples are: free wireless internet available in public squares; creating public spaces offering the use of computers, with monitors to guidance; offering computer courses to the public; creating computer rooms in schools, among others;

Constantly dissemination of programs, explaining to the users the main advantages, as the credits offered, the state tax aspects as well as awards. The more citizens have the perception that the benefits are advantageous, the greater the intention to use the programs; Wider dissemination of the Program Access São Paulo and e-Poupatempo; Enhancing the benefits offered through user surveys, increasing the incentive to use. Thus, some examples are: awareness campaigns on the importance of asking the invoice; transparency with the amounts collected by taxes; improvement of credits offered and awards.

Adding and updating the program website security tools, to increase the perception of safety, especially when financial transactions for personal and corporate accounts are necessary; Conducting advertising campaigns (for example, with citizens using the program, award winners and opinion makers) to increase government credibility, increasing the intention of joining the program. The suggested actions can contribute to regular use or adoption of the program, contributing to habit formation. Therefore, the user can become a disseminator of the program, influencing, advising and approving others in the initiative.

Acknowledgments

This research was supported by: National Counsel of Technological and Scientific Development (CNPq), São Paulo Research Foundation (FAPESP) and Espaço da Escrita / Coordenadoria Geral da UNICAMP.

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