SOCIAL ACCOUNTABILITY: E-MONITORING PUBLIC MANAGEMENT IN AN EMERGING ECONOMY

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COMPLIANCE WITH ETHICAL STANDARDS

Our study follows all ethical standards applicable to our research.

Conflict of Interest Statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical approval

In our research, this is not applicable.

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ABSTRACT

Using the theory of planned behaviour, this research investigates whether a computerised system is capable of inducing the intention, and consequently the behaviour of individuals, to monitor public management. The CidadES - Controle Social system was the object of study and the data collection was conducted through an electronic questionnaire. Using structural equation modelling with partial least squares estimation, results indicate that intention and behaviour are mainly influenced by the usefulness that individuals attribute to this type of system. The present study broadens the understanding of behaviour in the use of e-Government systems within the important dimension of social accountability.

Keywords: Social accountability. Theory of planned behaviour. Monitoring of public management. CidadES Controle Social.

1. INTRODUCTION

Social accountability engages citizens to hold the government and its agents to account by enabling a civil society to monitor the government's actions (Brinkerhoff & Wetterberg, 2016). Social accountability is an external monitoring mechanism and it has potential to improve the quality of services, decrease corruption, and ultimately build stronger institutions (Gabriel & Castillo, 2019; Gaventa & McGee, 2013; He, 2019; Lynn, Heinrich, & Hill, 2000; United Nations, 2002). Furthermore, social accountability supplements traditional forms of control. It is a demand-side initiative that is led by civil society and is based on transparency and access to information, and alternative ways of holding government agents accountable (Gaventa & McGee, 2013; Ngo, Edelenbos, & Gianoli, 2019; Santos, Pereira, & Rodrigues, 2018).

Although social accountability has classic forms, such as participatory budgets and management councils (United Nations Development Programme, 2013), the popularity of the Internet has enabled the creation of new social accountability mechanisms. This has led many governments to create open data portals and to implement government information access policies (Brasil, 2009, 2011; Lourenço, 2015; United Nations Development Programme, 2013). There is evidence that indicates that Internet platforms, which are more convenient for citizens than other channels, have become the main form of conducting social accountability (Linhares & Humenhuk, 2012; Lourenço, 2015).

Despite the apparent benefit to society generated by computerised systems that are focused on social accountability, it is necessary to establish whether they encourage citizens to monitor and control the government's actions (Lourenço, 2015; Matheus, Janssen, & Maheshwari, 2018; Ruijer, Grimmelikhuijsen, & Meijer, 2017). Thus, this research aims to verify if the computerised tools aimed at social accountability induce the intention and, therefore, the behaviour of individuals to monitor public management.

Several studies have examined the factors that influence citizens to engage in effective involvement with participatory experiences of public management (Ferreira & Ferreira, 2014; Milani, 2008; Sabioni, Ferreira, & Reis, 2018). However, it is still necessary to investigate if the mechanism of promoting social accountability evokes the individual's interest in monitoring and supervising the actions and expenditures of public managers. This understanding can help the government to channel its efforts more appropriately in the selection, manipulation and presentation of the information that is disclosed by these tools, and consequently adopt strategies that better stimulate the citizen's participation.

Sabioni et al. (2018) assert that social accountability tools must be constantly permanently investigated and that more research is needed on the factors that influence individuals to be more active in the monitoring of public management. Al-Hujran, Al-Debei,

Chatfield, and Migdadi (2015) find that a clear understanding of what really motivates the population to use this type of instrument is needed so that the government can make well-informed strategic decisions.

The system in this research is called *CidadES Controle Social*, it was developed by the Court of Auditors of ES/Brazil and it is publicly accessible through the Internet. The questionnaire is based on the Theory of Planned Behabior (TPB) and it contains 24 questions that measure the constructs of intention, attitude, subjective norms, perceived usefulness, trust in the computerised system, perceived behavioural control and behaviour. The data collection took place through an online questionnaire that was sent to the users of the system, as well as citizens and public servants in general. The analysis relies on Structural Equation Modelling (SEM) with Partial Least Squares (PLS) estimation.

According to Choi and Chandler (2020), while knowledge is not the only failure factor for e-government systems, it can emphasize a comprehensive organisational overview of the reason for failure. Factors such as instruction, political pressure, pro-innovation bias without adequate careful planning, lack of resources, and employee resistance can provide a knowledge void, which is usually caused by excessive exploitation and organisational inertia. In addition, structural and behavioural factors interact to lead to this situation.

To mitigate the knowledge gap in the electronic systems used by governments (as studied by the aforementioned authors), this research makes a theoretical contribution by advancing the understanding of human behaviour related to the use of e-government systems, specifically analysing the use of systems related to social accountability in the light of the TPB. It is expected that the findings of this study will assist in directing the efforts involved during the development of these tools and contribute, even if indirectly, to the formation of a more empowered society, which is engaged and aware of its rights.

2. THEORETICAL BASIS

2.1 Social Accountability

Brinkerhoff and Wetterberg (2016) indicate that social accountability brings many advantages to society by increasing the effectiveness of public services, improving the quality of governance and democracy, and increasing citizen empowerment. The institutionalization of mechanisms for the involvement of citizens creates government responsiveness and opportunities for greater empowerment of citizens, which results in better public services (Gaventa & McGee, 2013).

According to Monteduro and Allegrini (2020), the accountability of government can be divided into financial and non-financial. The accountability of financial accounts refers to the resources that are spent, while non-financial accountability refers to results and the achievement of public goals. Consequently, tools (online or not) are required because this type of accountability is more difficult to implement. With the modernization of the public sector, disclosure practices that go beyond financial responsibility have become accessible to citizens through the Internet. Within the broad concept of non-financial government performance, citizens can have access to information on social and environmental issues, sustainability and performance as a whole (Lee-Geiller & Lee, 2019). This is the main role of online social accountability systems. However, it remains to be seen how the citizen behaves with this type of system (Cella & Zanolla, 2018; Lavigne, 2019).

Inclusive deliberative democracy requires greater participation by the society. Therefore, public electronic participation—through social media, phone apps, and other information communication technologies—can overcome many of the constraints associated with traditional public services (Noto & Noto, 2019; Pflughoeft & Schneider, 2020). The

electronic system CidadES, of the TCE-ES, that is studied in this research is an example of this form of participation.

2.2. Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) was used for the behavioural analysis of the *CidadES Controle Social* users, which states that even if the intention does not immediately translate into action, it is considered a predecessor of behaviour (Ajzen, 1991). Thus, the theoretical model of the TPB is a potential tool for predicting the behaviour of citizens when using computerised tools aimed at social accountability (Özkan & Kanat, 2011).

The TPB establishes that intention and, therefore, behaviour, are determined by three predictive constructs: attitude; subjective norm; and perceived behavioural control (Ajzen, 1991). The existing relationship between the TPB constructs can be seen in Figure 1.

Figure 1: Original theoretical model of the Theory of Planned Behaviour

Source: Ajzen (1991)

Studies that use the TPB as a theoretical basis and investigate behavioural issues related to the use of e-government tools are usually found in the scientific literature (Al-Hujran et al., 2015; Horst, Kuttschreuter, & Gutteling, 2007; Hung, Chang, & Yu, 2006; Kanat & Özkan, 2009; Özkan & Kanat, 2011). These studies seek to identify whether the predictive constructs of the TPB (attitude, subjective norms and perceived behavioural control) and some of its correlated beliefs influence the intention to use these services. Similarly, but with a specific focus on e-Government solutions directed at social accountability, this article seeks to understand if attitude, subjective norms and perceived behavioural control, in addition to the beliefs related to perceived usefulness and trust in the computerised system, have an influence on the intention and behaviour of individuals.

Faulkner et al. (2019) in their experiments found that online behavioural intervention changes people's attitudes, which is important to the TPB. They noted that customers who were exposed to the intervention expressed very high levels of satisfaction and liked the benefits of speed, ease and queue jump from using e-Government services. Özkan & Kanat (2011) advocate the TPB as a more appropriate model for analysing citizen behaviour towards e-Government. By comparing with other more utilitarian and technological theories, such as the Technology Acceptance Model (TAM), the Diffusion of Innovations (DOI) and the Unified Theory of Acceptance and Use of Technology (UTAUT), the authors indicate that the advantage of the TPB lies in basing the behaviour of citizens on their beliefs.

Similarly, Horst et al. (2007) compare the TAM and TPB in the adoption of e-government services by citizens. The authors note that the TPB is more appropriate to demonstrate the behaviour of citizens, provided that the perceived usefulness is incorporated into the model (which was done herein). Consequently, the TPB was adopted in this study and was expanded with two new constructs (i.e. perceived usefulness and trust) because the focus is on the behaviour of citizens regarding social accountability based on an Internet platform.

2.3 Proposed Model and Hypotheses

In the model no predictor constructs were added beyond the three originally predicted in the TPB. Using the extensibility offered by the TPB, the beliefs "perceived usefulness" and "trust in the computerised system" were related to the predictive construct "attitudes". The theoretical support to these beliefs came from the work conducted by Carter and Bélanger (2005). Ajzen (1991) warns about the importance of independently validating the selected beliefs—in their own research and others—, which is the reason why scales previously validated by other researchers were used in this study (Al-Hujran et al., 2015; Carter & Bélanger, 2005; Chu, Hsiao, Lee, & Chen, 2004; Mathieson, 1991; Taylor & Todd, 1995). The

graphic relationship between the constructs of the beliefs of the model and the predictive constructs of the TCP can be seen in the following figure.

Figure 2: Proposed Model

Source: own elaboration

According to the TPB, intention is the result of the convergence of motivational factors represented by attitudes, subjective norms and perceived behavioural control (Ajzen, 1991). According to the theory, behaviour is preceded by intention and this construct has a high prediction level of individuals' actions, as shown in de Jong, Neulen, and Jansma (2019). To verify whether the intention to use computerised tools aimed at social accountability leads to the effective use of these systems, the following hypothesis was formulated:

H1 - The intention to use a computerised system aimed at social accountability positively influences the behaviour of effective use of the system.

According to Ajzen (1991), attitude represents the previous assessment by an individual regarding a specific intended behaviour. The more positive this assessment, the greater his or her intention and, consequently, the greater the probability of behaviour execution. The positive influence of the attitude construct on intention was demonstrated by the research of Hung et al. (2006) and Al-Hujran et al. (2015). It is assumed that when citizens have a clear perception of the benefits for themselves or for the community, related to the use of a computerised tool aimed at social accountability, they tend to have the intention of using such a system. Assuming this concept, the following hypothesis was formulated:

H2 - The attitude towards the use of a computerised system aimed at social accountability positively influences the intention to use the system.

Ajzen (1991) states that subjective norms can influence the intentions of the individual and are related to the belief that their behaviour will be accepted or not by their social circle,

family, co-workers, friends, and society in general (de Jong et al., 2019). Some studies have used the TPB in e-Government systems, but concluded that subjective norms did not represent a construct with significant power to predict intention (Horst et al., 2007; Özkan & Kanat, 2011). Given that social accountability in an Internet environment may be able to mobilize discussions of the individual with their social circles, subjective norms may have different results herein. Therefore, the following hypothesis is proposed:

H3 - The subjective norms related to the use of a computerised system aimed at social accountability positively influence the intention to use the system.

Perceived behavioural control, according to Ajzen (1991), is an individual's perception of the factors that can potentially influence their behaviour intention or directly the behaviour itself. By believing that there are obstacles outside their control related to the behaviour that they wish to carry out, the individual feels discouraged to continue the mental flow that culminates in the behaviour execution. Meanwhile, by assuming that the desired behaviour is surrounded by conditioning factors that are favourable to it, the individual tends to follow up with the desired action. Ajzen (1991) also indicate that perceived behavioural control can have a direct influence on behaviour in situations where it represents real control over the intended action without the need for intermediation of the construct intention. Özkan & Kanat (2011) identified that perceived behavioural control is directly related to the users' intentions of adoption of electronic government systems. To test this proposition, the following hypotheses were formulated:

H4a - The perceived behavioural control in the use of a computerised system aimed at social accountability positively influences the intention to use the system.

H4b - The perceived behavioural control in the use of a computerised system aimed at social accountability positively influences the behaviour of the use of the system.

Davis, Bagozzi, and Warshaw (1989) addressed how perceived usefulness affects the attitude and consequently the intention of individuals. According to researchers, perceived usefulness is related to how a particular tool, product or service can help a person achieve a particular goal. The studies of Özkan and Kanat (2011) and Al-Hujran et al. (2015) identified a strong degree of influence of perceived usefulness in predicting citizens' attitudes in using e-Government services. In this research, the perceived usefulness is related to the degree to which the analysed computerised social accountability system contributes to inform citizens about how public resources are being used by the government. Thus, the following hypothesis was formulated:

H5 - The perceived usefulness associated with the use of a computerised system aimed at social accountability positively influences the attitude associated with the use of the system.

According to Colesca (2009), Carter and Bélanger (2005) and Kanat and Özkan (2009), success in the adoption of e-Government solutions requires citizens to have trust in the government. When the individual has low confidence in the government in offering electronic services, there is a lower propensity (attitude) to use e-Government solutions (Lee-Geiller & Lee, 2019). Thus, it is considered that trust in the services offered to citizens tends to be one of the main factors that influences their attitude towards using a computerised system aimed at social accountability. Therefore, the following hypothesis was tested to validate this understanding:

H6 - Trust in the computerised system focused on social accountability positively influences the attitude associated with the use of the system.

3. METHODS

The object of analysis is the *CidadES Controle Social system*, which was developed by the Court of Auditors of Espírito Santo, Brazil, and made available to citizens via the Internet.

This system concentrates various tax and economic information related to the accountability of all municipal and state public agencies in Espírito Santo. The motivation for its choice as an object of analysis is the breadth of its publicly available information, and its potential as a tool for social accountability and promotion of citizenship.

Data collection took place from January to March 2019, when the access link to the questionnaire was made available on the main page of the *CidadES Controle Social* system. Upon accessing the system, users were presented with a message inviting them to take the survey. During the same period, electronic messages were also sent to citizens and public servants in general, inviting them to complete the survey questionnaire. Sampling was not probabilistic due to accessibility.

When accessing the questionnaire, the potential respondent is presented with an introductory text to raise awareness of the importance of his/her participation, instruct him/her to visit the website *CidadES Controle Social* and, finally, provide him/her with basic directions on the form filling process. The questionnaire itself is organised into three sections.

The first section consists of a single population control question: "Have you ever visited the *CidadES Controle Social* system, available at http://cidades.tce.es.gov.br?" The goal is to validate the sample, eliminating from its final version the respondents who have not had contact with the analysed social accountability tool.

In the second part of the data collection tool, 24 statements are presented, to be answered using a seven-point Likert scale, with answers ranging from "totally disagree" (1) to "totally agree" (7). The statements are distributed as follows: three statements to measure the intention construct (I1 to I3) (Mathieson, 1991), three questions to measure the attitude construct (A1 to A3) (Al-Hujran et al., 2015), three questions to measure the subjective norms construct (N1 to N3) (Mathieson, 1991), five questions to measure the perceived usefulness

construct (U1 to U5) (Carter & Bélanger, 2005), four questions to measure the trust in the computerised system construct (CSI1 to CSI4) (Carter & Bélanger, 2005), three questions to measure the perceived behavioural control construct (CCP1 to CCP3) (Taylor & Todd, 1995), and three questions to measure the behavioural construct (C1 to C3) (Chu et al., 2004).

There are six questions in the third part of the data collection tool, which aim to achieve the sociodemographic characterization of the respondents. There is one question related to education, one question related to income, one question related to gender, one question related to age, one question that identifies whether the respondent is a public servant, and one question that identifies whether the respondent is in a position related to the management of public resources. Finally, there is also a question that identifies how the respondent became aware of the *CidadES Controle Social* system. The list of all questions and the constructs to which they are associated can be seen in the Appendix.

Before the questionnaire was made available to the general public, pre-testing was conducted with 17 individuals who were able to participate in the research to identify if the questions were understandable or if they needed adjustments. After the pre-test data collection was completed, there was no modification of the text in the questions because the respondents stated that it was sufficiently clear.

SEM was used for the data analysis, which consists of a set of statistical techniques that allow to measure and validate the hypothetically existing relationships between multiple variables. The SEM method also allows to evaluate whether the observed data are able to measure the constructs related to them, confirming if they are consistent with the proposed theoretical model, thus displaying its predictive capacity (Sarstedt, Ringle, Smith, Reams, & Hair Jr, 2014). The PLS estimation technique was chosen, which is indicated when exploratory modelling is intended, focusing on predictions based on data rather than statistical accuracy (Özkan & Kanat, 2011).

SEM establishes the existence of two models: a measurement model (outer model) and a structural model (inner model). The sequence of steps proposed by SEM requires both models to be tested. The validation of the measurement model is done by analysing its convergent validity and its discriminant validity. Convergent validity allows to identify if the items of the psychometric tool used to measure a given construct are, in fact, related to this construct. Discriminant validity, also known as divergent validity, allows to identify the degree of distinction between the constructs of the model.

Several fields, including the analysis of information management systems (Sarstedt et al., 2014), have used PLS-SEM. This suggests that the sample should have at least a number of valid respondents equivalent to 10 times the number of items in the psychometric tool (Sarstedt et al., 2014). The minimum number of 240 respondents was achieved, with 267 valid respondents. This number was obtained after eliminating 109 of the survey participants (29% of the sample) who claim to be unaware of the *CidadES Controle Social* system (control question).

4. RESULTS AND DISCUSSION

Table 1 shows the sociodemographic characteristics of the respondents of the psychometric tool.

Table 1 Sociodemographic characterization of the sample

Most respondents of the data collection tool are men in the middle-age stage of life, with an income between 3 and 10 minimum wages, and with an undergraduate or graduate degree education. The percentage of public servants in the sample may be an indication that the concept of social accountability has greater reach in this professional class and that there is a need for more effective disclosure to the general population about the benefits of monitoring

the use of public money. Most of these public servants, mostly municipal employees, are in a position related to the management of public resources, such as accounting, internal control, or disbursement officer.

Initially, the convergent validity of the SEM-PLS measurement model was investigated through three analyses (Sarstedt et al., 2014): (1) factorial loads; (2) Average Variance Extracted - AVE; and (3) Composite Reliability - CR.

Table 2: Matrix of factorial loads

Table 2 shows that the factorial loads of the psychometric tool items have values greater than 0.7. Thus, all items of all constructs show satisfactory loads and are kept within their measurements (Sarstedt et al., 2014).

Table 3 shows that the AVE value of all constructs was greater than 0.5, which is the minimum recommended value (Fornell & Larcker, 1981). Table 3 also shows that the CR values of all constructs were higher than the acceptable minimum of 0.7 (Sarstedt et al., 2014). Therefore, all of the observed variables used in the model explain well the constructs to which they are related. When combined, the three analyses indicate the existence of the convergent validity of the measurement model.

The next step is to evaluate the discriminant validity of the constructs. Following Chin (1998), analyses of (1) cross-loading and (2) comparison of AVE square roots are conducted. No cross-loading was observed because all the items of the psychometric tool had higher factorial loads in the constructs to which they are related, and not in the other constructs. Furthermore, the AVE square root results of each of the constructs were higher than the correlation values with the other constructs. Both analyses indicate the discriminant validity of the constructs. Therefore, the measurement model presents both divergent and discriminant validity, and the estimation of the structural model can proceed.

Table 3: Convergent and discriminant validity of the constructs

Figure 3 shows the estimation results by PLS. R2, or Pearson's coefficient of determination, indicates the explanatory power of the model. The CC, or path coefficient, indicates the magnitude of the relationship between the constructs, while the p-value indicates whether this magnitude is statistically different from zero.

Figure 3: Results of the proposed structural model

Notes: CC = Path Coefficient, p = P-value of the H_0 test: CC is zero, R2 = Pearson's coefficient of determination

Source: prepared by the author

The endogenous variables Attitude, Intention and Behaviour have Pearson's coefficients of determination (R2) between 0.50 and 0.75. Values in this range indicate that the exogenous variables moderately explain the variance identified in their respective endogenous variables (Hair, Hult, Ringle, & Sarstedt, 2014).

The path coefficients seek to identify to what degree one construct causes an effect on the other. Values close to +1.0 are indicative that there is a strong positive relationship between the constructs. Values close to -1.0 indicate a strong negative relationship between the constructs. Values close to zero are indicative of weak relationships and if they are to be considered sufficiently robust, then they need to be higher than 0.2 (Chin, 1998).

The significance of the path coefficients tests if the relationships between the constructs are statistically different from zero. The analyses consider the statistical significance level of 5%. The values and significances of the model's path coefficients, and also the conclusions related to each of the hypotheses, are given in Table 4.

Table 4: Results of the analyses of hypotheses

The TPB establishes that intention is the main construct that precedes human behaviour, and it has a high predictive power over it (Ajzen, 1991). The result in Table 4 supports this hypothesis (H1). Thus, offering citizens constraints that influence the intention to use the system stimulates the behaviour of using the social accountability tool.

Hung et al. (2006) and Al-Hujran et al. (2015) point out that attitude is the predicting construct with the highest degree of influence on the intention to use e-government systems, which is in line with the present results (H2). The strength of the relationship between attitude and intention suggests that, in the case of *CidadES Controle Social*, the system manages to transmit to its users its potential to facilitate the monitoring of the use of public resources. It should be noted that the data analysis reveals that the main determinant of the intention to use the *CidadES Controle Social* system is attitude; that is, the perception that individuals have of the benefits related to the use of this tool.

Given that the focus of this research is directly related to civic engagement and popular participation, it is assumed the existence of influence by social groups on the individual's intentions and behaviours in the use of systems focused on social accountability. However, although the relationship between subjective norms and intention is statistically significant, it is not relevant (H3). The path coefficient of 0.125 was below the minimum value of 0.2 to be considered (Chin, 1998). This result corroborates Özkan & Kanat (2011) and Horst et al. (2007) regarding the adoption of e-government, and may indicate that the concept of social accountability is not yet fully known to the population. This indicates that educational initiatives may be important and more effective disclosure actions are needed to make the supervision of public agents' actions by society a norm.

The preceding perceived control seems to have no influence on intention (H4a). This result goes against Özkan & Kanat (2011), in which perceived behavioural control has a

positive influence on the intention of adopting e-government systems. However, perceived control has a direct influence on behaviour, with a coefficient of 0.371 and is statistically significant (H4b). These results suggest that the individual, with the conviction that he or she has the situation under his full control and possesses all the necessary knowledge and resources, will directly execute the behaviour related to the use of tools for social accountability without prior intervention by intention. By providing a system aimed at social accountability that is easy to use, easy to access and easy to understand, it is considered that the individual will develop a sense of control that will stimulate them to effectively use the tool. Since the coefficient identified in this relationship is close to the acceptable minimum value of 0.2 (Chin, 1998), there is an indication of the need to improve these characteristics in the *CidadES Controle Social* system.

Regarding H5, the result indicates that the perceived usefulness has a strong positive influence on the attitude, with a coefficient close to 1 and statistically significant. Özkan and Kanat (2011) and Al-Hujran et al. (2015) bring similar results regarding the use of e-government services. In the present study, the users of *CidadES Controle Social* attributed a considerable degree of usefulness to the system in its role of informing how public resources are being used by the government, positively influencing their attitude to use it. This result suggests that it is necessary to permanently improve the system, incorporating resources that are useful to citizens and keeping its data always updated. The success of e-government ultimately depends on citizens' willingness (social accountability) to adopt it. Consequently, finding ways to encourage its adoption is crucial (Faulkner et al., 2019).

Finally, the attitude was not influenced by the construct trust in the computerised system (H6). Colesca (2009), Carter and Bélanger (2005) and Kanat and Özkan (2009) point out that the attitude of using e-Government solutions is positively influenced by the trust that users place in this type of system. Thus, the results in this research may be an indication that the

respondents of the psychometric tool had a moderate feeling of trust in the information presented by the *CidadES Controle Social* system. Although the level of trust was not negative, it did not show statistical power. Consequently, it was one of the factors that motivated the attitude of the users. A possible explanation is the image crisis in the public opinion that has been experienced by Brazilian government agencies, led to their credibility and, in some cases, even their own reason for existence being questioned by the population.

5. CONCLUSION

In general, results suggest that intention and thus behaviour are mainly positively influenced by the usefulness that individuals assign to the use of this type of tool. However, the low influence observed in the construct "subjective norms" seems to indicate that the concept of social accountability is not yet fully disseminated among the population. This assumption is also reinforced by the significant percentage (29%) of respondents who were disregarded from the sample for being unaware of the *CidadES Controle Social* system, as well as by the low percentage (10.8%) of respondents in the sample who do not hold public office. To minimize this problem, campaigns to advertise and raise awareness about the importance of citizen participation in monitoring the use of public resources could help to popularize the concept of social accountability. A possible secondary benefit of this action is to increase the level of trust in government initiatives because it was observed in this research that the attitude of using the computerised social accountability system had a low degree of influence from the trust attributed to the tool.

The theoretical contribution made by this research is that it broadens the understanding of behaviour in the use of e-government systems, while using the TPB to analyse the use of governmental systems related to social accountability. As a practical contribution, this research provides a model that can be used by governments, courts, and legislative houses. Results from this study may be interesting for those entities who wish to design interventions aimed at

stimulating the likelihood of citizens using e-government systems to promote social accountability, which makes them more effective in providing the population with information to monitor public management.

Future research should analyse a larger set of computerised tools for social accountability, and should also use a more comprehensive and diverse sample of respondents to broaden discussions on this subject. The incorporation of new constructs in the model is also another possibility for advancement, which would contribute to a better understanding of the factors that influence behaviour towards social accountability.

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APPENDIX — CONSTRUCTS AND MEASUREMENTS

Opinion survey on computerized Social Accountability tools

This survey seeks to know the opinion of people regarding computerized tools aimed at the social accountability of public accounts.

Before proceeding, we invite you to meet the tool *CidadES Controle Social*, available at http://cidades.tce.es.gov.br, which allows citizens to monitor how the public resources are collected and spent in Espírito Santo/Brazil.

After using the system, answer the questions below. It will not be necessary to identify yourself and it will take no more than 3 minutes.

The scale of 1 to 7 points represents the degree to which you agree or disagree with the statements. There are no right or wrong answers in any of the items, since what is intended is only your honest opinion. For the questionnaire to be considered valid, all questions must be answered.

Responses are confidential and will be used to improve the system.

Thank you for your willingness to cooperate!

CUTOFF QUESTION		
Have you ever visited the CidadES Controle Social system, available at http://cidades.tce.es.gov.br?	☐	Yes
	☐	No

VARIABLES	**CONSTRUCT**
I want to use the CidadES Controle Social system to monitor the use of public resources in the state of Espírito Santo. My intention is to use the CidadES Controle Social system to monitor the use of public resources in the state of Espírito Santo. To monitor the use of public resources in the state of Espírito Santo I intend to use the CidadES Controle Social system as much as possible.	Intention (Mathieson, 1991)
I consider it a good idea to use the CidadES Controle Social system to obtain information about public agencies in the state of Espírito Santo.	Attitude (Al-Hujran et al., 2015)

I like to use the CidadES Controle Social system to get information about the public agencies of the state of Espírito Santo. I consider it interesting to use the CidadES Controle Social system to obtain information about public agencies in the state of Espírito Santo.	
People who are important to me (colleagues, family) encourage me to use the CidadES Controle Social system to monitor the use of public resources. People who influence my behaviour want me to use the CidadES Controle Social system to monitor the use of public resources. People whose opinions I value would like me to use the CidadES Controle Social system to monitor the use of public resources.	Subjective norms (Mathieson, 1991)
The CidadES Controle Social system allows me to obtain information about the finances of public agencies in the state of Espírito Santo faster. I think the CidadES Controle Social system offers me a service of great value. The information provided by the CidadES Controle Social system is useful to me. The CidadES Controle Social system facilitates my search for information on the finances of public agencies in the state of Espírito Santo. I find the CidadES Controle Social system useful.	Perceived usefulness (Carter & Bélanger, 2005)
I think I can trust the CidadES Controle Social system. I can trust the CidadES Controle Social system to obtain reliable information about the public agencies in the state of Espírito Santo. In my opinion, the CidadES Controle Social system is trustworthy. I trust that the CidadES Controle Social system was designed to serve the interests of society.	Trust in the computerized system (Carter & Bélanger, 2005)
I have the ability to use the CidadES Controle Social system. Using the CidadES Controle Social system is entirely under my control, which means I can use it whenever I deem it necessary. I have the necessary resources, knowledge and skill to use the CidadES Controle Social system.	Perceived Behavioural Control (Taylor & Todd, 1995)
I will start to use the CidadES Controle Social system to monitor the use of public resources. Considering the means I have at my disposal and that allow me to monitor the use of public resources, I will prefer to use the CidadES Controle Social system.	Behaviour (Chu et al., 2004)

From now on my frequency of use of the CidadES Controle Social system will be very high.	

Figure

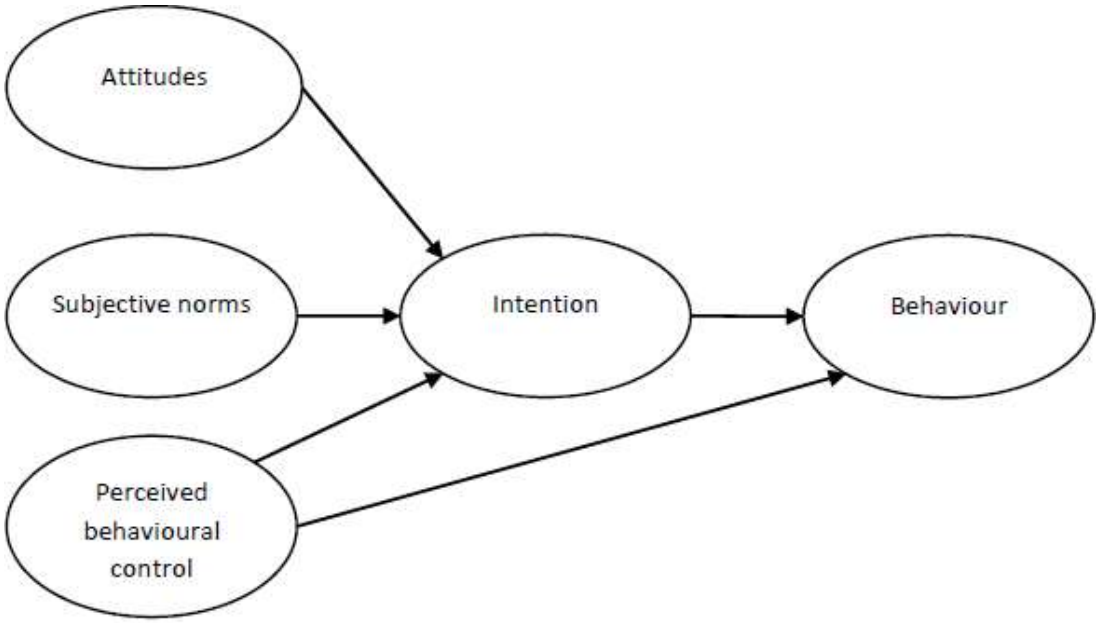

Figure 1: Original theoretical model of the Theory of Planned Behaviour
Source: Ajzen (1991)

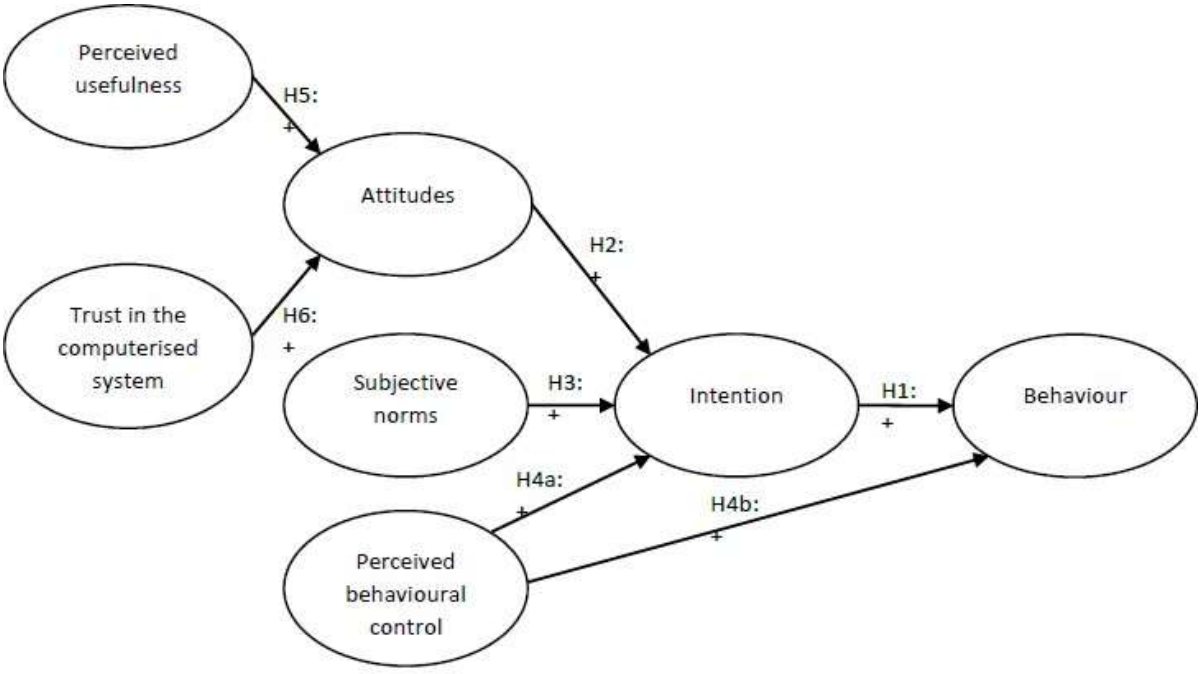

Figure 2: Proposed Model

Source: own elaboration

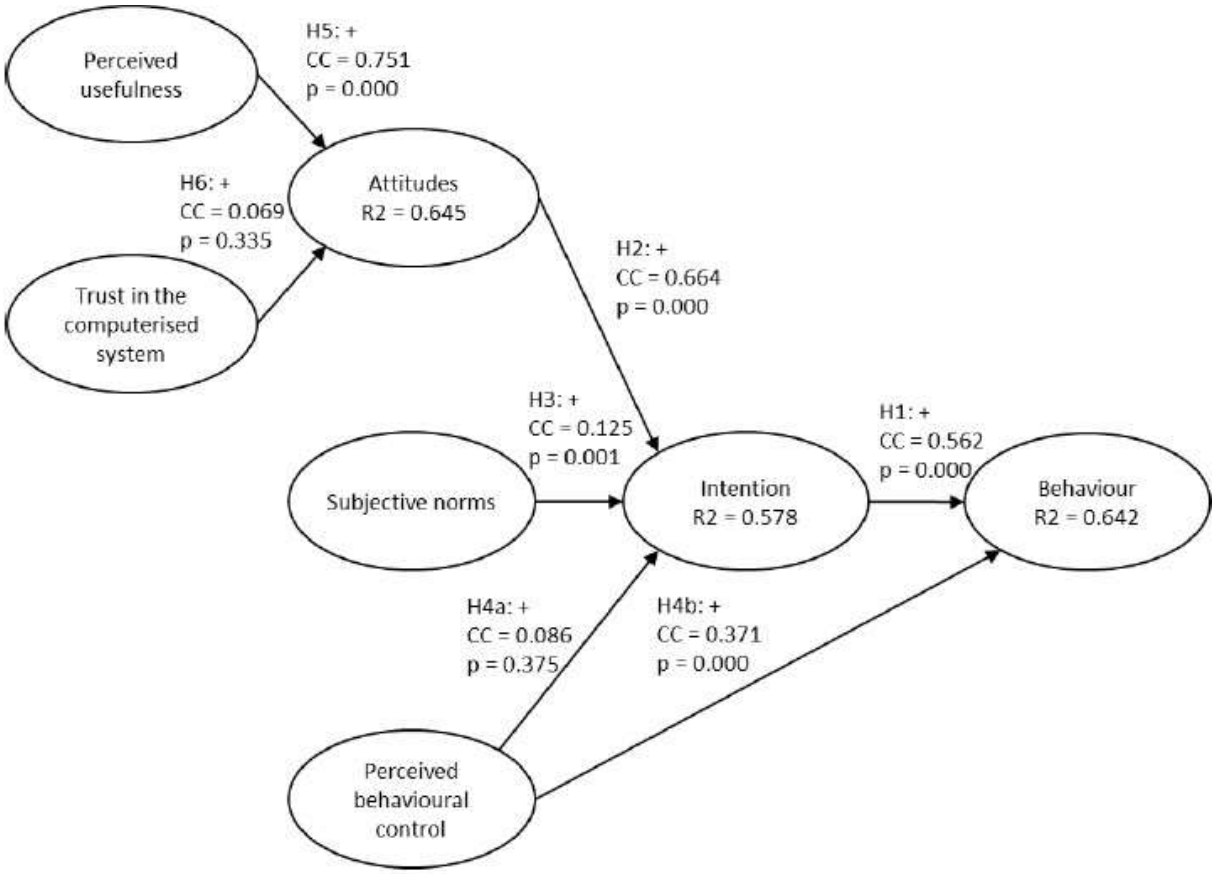

Figure 3: Results of the proposed structural model

Notes: CC = Path Coefficient, p = P-value of the H0 test: CC is zero, R2 = Pearson's coefficient of determination

Source: own elaboration

Table

Table 1 Sociodemographic characterization of the sample

Constructs	Option	Qty	%
Gender	Male	165	61.80
	Female	102	38.20
Age	18 to 25 years old	9	3.37
	26 to 30 years old	25	9.36
	31 to 35 years old	44	16.48
	36 to 40 years old	51	19.10
	41 to 45 years old	44	16.48
	46 to 50 years old	33	12.36
	51 to 55 years old	40	14.98
	Over 55 years old	21	7.87
Education	High school or less	6	2.25
	Technical Education	10	3.75
	Undergraduate degree	77	28.84
	Graduate degree	136	50.94
	Master's degree or higher	38	14.23
Income	1 to 2 minimum wage salaries	40	14.98
	3 to 4 minimum wage salaries	76	28.46
	5 to 10 minimum wage salaries	106	39.70
	11 to 20 minimum wage salaries	35	13.11
	Over 20 minimum wage salaries	10	3.75
Public servant	Municipal	127	47.57
	State	95	35.58
	Federal	10	3.75
	Others	6	2.25
	I am not a public servant	29	10.86
Manager	Yes	131	52.61
	No	118	47.39

Source: Survey data, with 267 valid respondents.

Table 2: Matrix of factorial loads

Constructs	Tool Items	Factorial Loads
Attitude	A1	0.883
	A2	0.842
	A3	0.924
Behaviour	C1	0.903
	C2	0.901
	C3	0.904
Perceived Behavioural Control	CCP1	0.938
	CCP2	0.918
	CCP3	0.933
Trust in the computerised system	CSI1	0.911
	CSI2	0.933
	CSI3	0.927
	CSI4	0.847
Intention	I1	0.931
	I2	0.947
	I3	0.933
Subjective norms	N1	0.939
	N2	0.967
	N3	0.927
Perceived usefulness	U1	0.847
	U2	0.924
	U3	0.904
	U4	0.927
	U5	0.904

Source: Survey data, with 267 valid respondents

Table 3: Convergent and discriminant validity of the constructs

Construct	AVE	CR	A	C	CSI	CCP	I	N	U
A - Attitude	0.781	0.914	0.884						
C - Behaviour	0.815	0.930	0.731	0.903					
CSI - Trust in the system	0.819	0.948	0.620	0.631	0.905				
CCP - Perc. Behav. Control	0.864	0.950	0.497	0.625	0.474	0.930			
I - Intention	0.878	0.956	0.746	0.730	0.468	0.452	0.937		
N - Subjective norms	0.892	0.961	0.316	0.491	0.376	0.290	0.359	0.945	
U - Perceived usefulness	0.813	0.956	0.802	0.732	0.733	0.570	0.677	0.364	0.902

Notes: AVE: average variance extracted; CR: composite reliability. The values in columns A to U, below the main diagonal, are the correlations between the constructs. The values highlighted on the diagonal represent the square root of the AVEs of each construct.

Source: Survey data, with 267 valid respondents.

Table 4: Results of the analyses of hypotheses

Hypothesis	CC	p	Result
H1 - The intention to use a computerised system aimed at social accountability positively influences the behaviour of effective use of the system.	0.562	0.000	Supported
H2 - If the user positively perceives a computerised system aimed at social accountability, there will be a positive influence on the intention to use this system.	0.664	0.000	Supported
H3 - The belief that the use of a computerised system aimed at social accountability is seen positively by the social circles of a user will positively influence the intention to use this system.	0.125 (<0.2)	0.001	Unsupported — weak magnitude
H4a - The belief that there is control in the use of a computerised system aimed at social accountability has a positive influence on the intention to use this system.	0.086	0.375 (>0.05)	Unsupported — statistically non-significant relationship
H4b - The belief that there is control in the use of a computerised system aimed at social accountability positively and directly influences the behaviour of using the system.	0.371	0.000	Supported
H5 - The perceived usefulness associated with the use of a computerised system aimed at social accountability positively influences the attitude associated with the use of the system.	0.751	0.000	Supported
H6 - Trust in the computerised system focused on social accountability positively influences the attitude associated with the use of the system.	0.069	0.335 (>0.05)	Unsupported — statistically non-significant relationship

Notes: CC = Path Coefficient, p = P-value of H_0 test: CC is zero.

Source: Research data and prepared by authors.