

CiRM And e-Gov In Municipal Management: Unveiling The Citizen's Experience With The Services Portal Of The Municipality Of Brasília De Minas-MG

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Abstract:

Background: The digital revolution, driven by the widespread use of the internet, led to the digitalization of public services, with e-government (e-gov) emerging as a strategy to enhance efficiency, security, and transparency in public administration. This study aims to analyze the impact of Citizen Relationship Management (CiRM) and e-government tools on citizens' perceptions of the Municipality of Brasília de Minas-MG (PMBM) portal, focusing particularly on the variables of the UTAUT model: Performance Expectancy, Effort Expectancy, Facilitating Conditions, and Citizen Satisfaction.

Materials and Methods: This research adopts an applied nature, following a quantitative approach and descriptive design. The study collected data through a web survey adapted from the instruments of Venkatesh, Thong and Xu(2016) and Mansoori, Sarabdeen, and Tchanchane (2018), employing a five-point Likert scale. Researchers selected a non-probabilistic convenience sample and applied the "snowball sampling" technique, resulting in 104 valid responses. The team analyzed the data using Microsoft Excel 365.

Results: The results indicate that the PMBM portal has positively contributed to the interaction between citizens and municipal management, with most users rating the portal as easy to use and having a high performance perception. However, although the majority of participants expressed an intention to continue using the portal, a significant portion of users remained neutral or dissatisfied with the support provided and with the perception of established usage habits.

Conclusion: The study suggests that the PMBM portal satisfies the usability and performance expectations. Nevertheless, the researchers identified areas that require improvement, particularly in the areas of user support and the promotion of more consistent platform usage. Future studies should incorporate public marketing strategies and expand the sample to gain a more in-depth understanding of the factors that influence portal adoption and continued usage.

Key Word: e-government; Citizen Relationship Management (CiRM); Digital Public Administration; UTAUT model.

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I. Introduction

The digital revolution, driven by the widespread use of the internet in the 1990s, has caused significant transformations in public administration, leading to the transition of activities previously carried out predominantly in physical formats to digital environments. The e-gov, or electronic government, is the term used to describe the process of utilizing information and communication technologies (ICT) to provide goods, services, and information to the population.

E-gov services emerged as a strategy to enhance the efficiency, security, and transparency of public services, promoting a more dynamic interaction between governments, citizens, and other entities. In this sense, the implementation of e-gov aims to fulfill the fundamental principles of public administration, such as legality, impersonality, morality, publicity, and efficiency (Furtado, 2010; Pinto, 2008).

The COVID-19 pandemic sped up the adoption of e-gov by necessitating the expansion of online service platforms at all levels of government. The need to maintain public administration activities during social distancing contributed to the acceleration of digitalization in Brazil (Dias; Farias, 2022). In this context, according to data from the Regional Center for Studies on the Development of the Information Society, approximately 68% of the Brazilian population used at least one service provided by e-gov initiatives in 2019. The most common forms of contact offered by public agencies were email, access to information requests, and electronic forms (CGI, 2021).

In this context, Citizen Relationship Management (CiRM) emerges, adapting the concept of Customer Relationship Management (CRM) from the private sector to public administration (Heringer; Carvalho; Leite, 2022). CiRM allows governments to store and access citizen data, creating a detailed profile for each individual. Unlike a conventional consumer, the citizen is considered a "customer" of public services, with an approach that goes beyond immediate interests and encompasses the common good and long-term implications for society (Denhart; Catlaw, 2017).

Although CiRM and e-gov are interrelated, it is important to emphasize that they are not synonymous. E-gov is a strategy that contributes to the implementation of CiRM by helping collect information and facilitating communication between governments and citizens (Furtado et al., 2023). In this context, the use of electronic portals emerges as an essential tool for the operationalization of e-gov. Depending on the objectives and design adopted; portals can effectively promote transparency and accountability (Raupp; Pinho, 2013).

This study focuses on the analysis of the Municipality of Brasília de Minas-MG (PMBM) portal, aiming to investigate the impact of CiRM and e-government tools on citizens' perceptions. The study aims to investigate the CiRM process, focusing on variables of the UTAUT model (experience of use, effort expectancy, and facilitating conditions) necessary to promote citizen trust in the PMBM portal.

II. Material And Methods

This research is applied in nature, with a quantitative approach and descriptive character. The object of the study was the Municipality of Brasília de Minas-MG (PMBM) services portal, available at <https://brasiliademinas.mg.gov.br/>. The focus of the investigation was to identify aspects of Citizen Relationship Management (CiRM), using the variables of the Unified Theory of Acceptance and Use of Technology (UTAUT) model on the PMBM portal. Specifically, the variables experience of use, performance expectancy, effort expectancy, and facilitating conditions from the UTAUT model were used to understand user behavior and CiRM aspects in relation to the PMBM Services Portal.

For a better understanding of the study object, it is important to highlight that Brasília de Minas is a municipality in the State of Minas Gerais, Brazil, with an area of 1,399.484 km² and a population of 32,025 inhabitants (IBGE, 2022).

Data collection occurred between April 29 and May 11, 2024, through a Web Survey, adapted from the instruments of Venkatesh et al. (2016) and Mansoori, Sarabdeen, and Tchanchane (2018). The Web Survey utilized a five-point Likert scale, ranging from (1) "strongly disagree" to (5) "strongly agree". For analysis, results were condensed into categories of agree or strongly agree, disagree or strongly disagree, and neutral. Prior to the final application of the questionnaire, two pre-tests were conducted to adjust the language of the instrument.

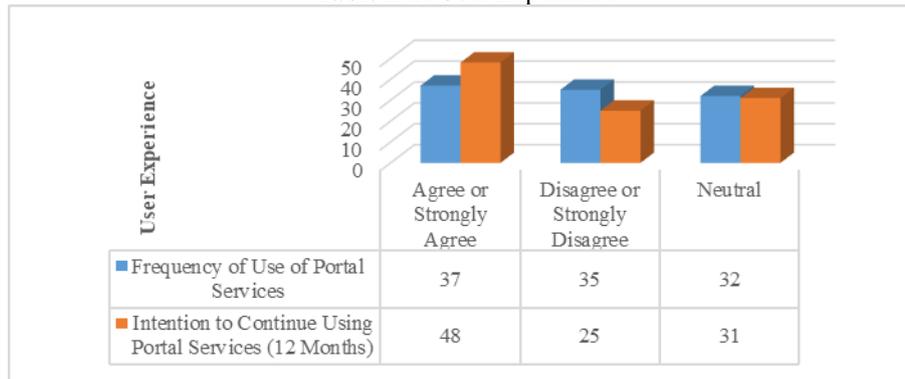
The sample was non-probabilistic, by convenience, using the "snowball sampling" technique. A total of 104 valid responses were obtained. Data were collected through the Google Forms application and tabulated using Microsoft Excel 365.

III. Result

Table n°1 describes the results of the analysis of User Experience with the PMBM portal, based on questions that assess Frequency of Use and Intention of Future Use. The question "I use the services offered by the Brasília de Minas City Hall website frequently" revealed that 37 participants (36%) use the portal regularly, indicating frequent use of the site. On the other hand, 35 participants (33%) stated that they do not use the portal frequently. Another 32 respondents (31%) selected "neutral," suggesting they do not have a defined opinion on the frequency of use of the portal. These data indicate a significant division in portal usage, with a considerable portion of citizens using it regularly, while another segment showed a lack of consistent engagement.

Still in **Table n°1**, the question "I intend to continue using the Brasília de Minas City Hall website for the next twelve months" showed that 48 participants (46%) expressed the intention to continue using the portal. However, 25 participants (24%) stated that they do not intend to use the portal in the next 12 months, while 31 participants (30%) declared themselves neutral. These results indicate a positive trend regarding the continuity of portal use, with a significant majority showing the intention to continue accessing PMBM services in the near future.

Table n°1: User Experience

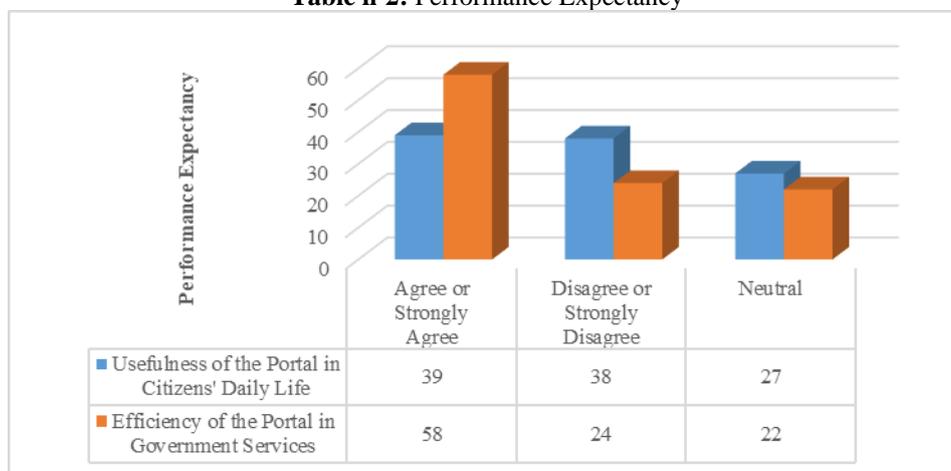


The majority of users perceive their interaction with the portal as clear and easy to use, which is a positive indicator for engagement with government digital platforms. This engagement is crucial because the more frequently citizens use the services, the greater the opportunity to establish a continuous and meaningful relationship with them (Mansoori; Sarabdeen; Tchantchane, 2018). However, the presence of a considerable portion of participants who disagree or are neutral regarding the frequency of use suggests that there are challenges in maintaining consistent engagement with the portal. This highlights the need for additional strategies to encourage continued use and overcome potential barriers citizens may face when accessing and using the portal services.

Table n°2 presents the results related to Performance Expectancy. The question "I consider the Brasília de Minas City Hall website useful in my daily routine" showed that 39 participants (38%) agree or strongly agree with the utility of the portal in their daily routines, indicating a positive perception from the majority of users. On the other hand, 38 participants (37%) disagree or strongly disagree with the utility of the portal, and 27 participants (26%) were neutral.

Still in **Table n°2**, regarding Performance Expectancy, the question "Using the Brasília de Minas City Hall website helps me complete government services more quickly" revealed a predominantly positive trend regarding the efficiency of the portal. The majority of participants, 58 (56%), stated they agree or strongly agree with the statement, indicating that they perceive the portal as an efficient tool for speeding up access to government services. However, 24 (23%) of the respondents disagreed or strongly disagreed, suggesting that some users do not perceive the portal as useful for improving the efficiency of service access. Additionally, 22 (21%) participants were neutral, signaling uncertainty or a lack of a formed opinion about the relationship between portal use and government service efficiency.

Table n°2: Performance Expectancy



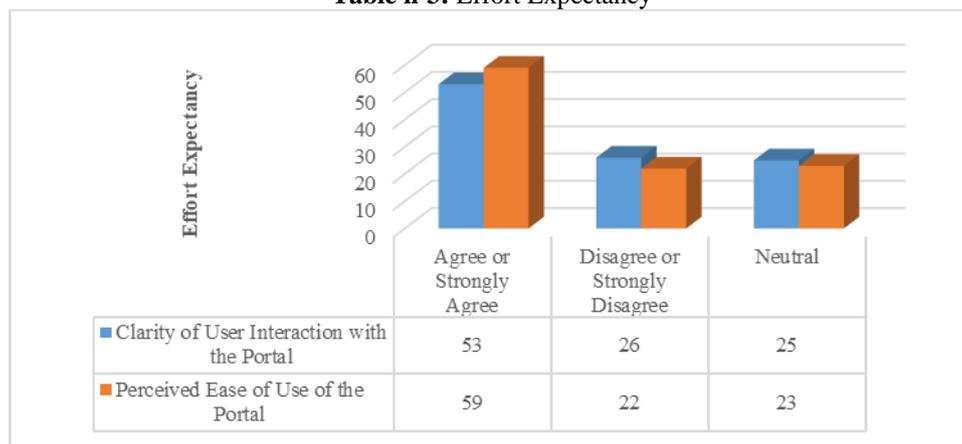
The data in **Table n°2** indicate a favorable reception regarding the performance of the PMBM portal, although there is room for improvements and adaptations to meet the various needs of users. It is feasible to comprehend performance expectancy as the degree to which an individual believes that using the system will bring benefits, either in terms of efficiency or in terms of process facilitation (Souza et al., 2020). The higher the performance expectancy, the greater the intention to use the technology (Venkatesh et al., 2003). In this context, most citizens perceive the portal as useful for speeding up access to government services, aligning with the CiRM

objectives of simplifying and improving the interaction between government and citizens (Wu, 2021; Duque; Filipe; Moreira, 2021).

Table n°3 presents the results of the analysis on Effort Expectancy, based on questions related to the clarity and comprehensibility of the users' interaction with the PMBM portal. The first question, "My interaction with the Brasília de Minas City Hall website is clear and understandable," revealed that the majority of participants, 53 (51%), agree or strongly agree that the information and functionalities of the site are easy to understand and navigate. In contrast, 26 (25%) of the respondents disagreed or strongly disagreed, indicating difficulties in understanding or navigating the portal. Additionally, 25 (24%) participants were neutral, suggesting an ambiguous or undefined perception of the clarity of the portal.

Regarding the second question, "I find the Brasília de Minas City Hall website easy to use," the data showed a predominantly positive perception among citizens, with 59 (57%) of respondents agreeing or strongly agreeing that the portal is easy to use. On the other hand, 22 (21%) participants encountered difficulties or complexities in using the site, disagreeing or strongly disagreeing with this statement. Another 23 (22%) remained neutral, indicating a lack of a formed opinion about the ease of use of the portal (**Table n°3**).

Table n°3: Effort Expectancy



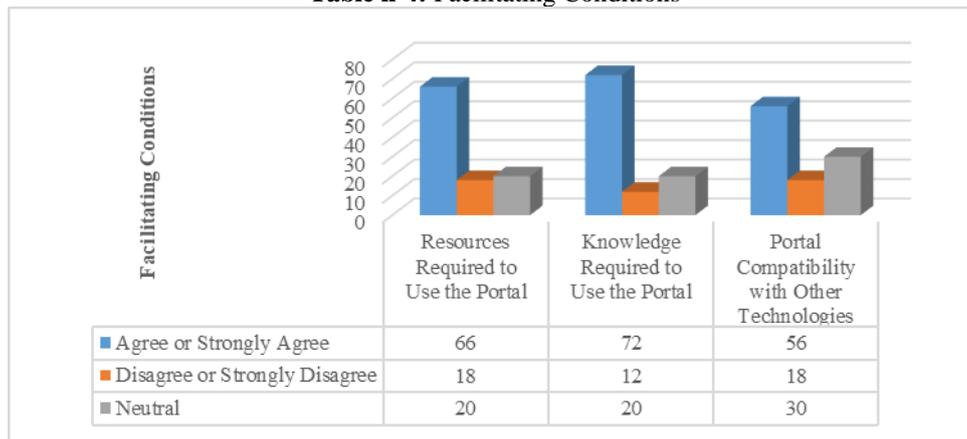
Effort expectancy, in this context, refers to the perceived ease of use of the system by the users (Souza et al., 2020). The lower the effort expectancy, the greater the intention to use the technology (Venkatesh et al., 2003). The analysis of the data on effort expectancy reveals a predominantly positive reception from citizens regarding the ease of use of the PMBM portal. However, the presence of a portion of users who disagree or are neutral about the ease of use suggests that there are areas for improvement, especially regarding the user experience and the removal of perceived obstacles in interacting with the portal.

Table n°4 illustrates users' perceptions regarding Facilitating Conditions for using the PMBM portal, based on questions about necessary resources, technical knowledge, and compatibility with other technologies. The question "I have the necessary resources to use the Brasília de Minas City Hall website" revealed that the majority of participants (66 or 63%) felt capable and had access to the necessary resources, such as technical skills, equipment, and internet access, to use the portal effectively. However, 18 (17%) disagreed or strongly disagreed, indicating that these users do not feel confident in having the necessary resources. Another 20 (19%) were neutral, which may suggest uncertainty or lack of understanding about what resources are essential.

Regarding the question "I have the necessary knowledge to use the Brasília de Minas City Hall website," the results were largely positive (**Table n°4**). 72 (69%) of participants agreed or strongly agreed that they have the necessary knowledge to use the portal's tools. In contrast, 12 (12%) disagreed or strongly disagreed, suggesting that some users feel they lack technical knowledge to use the portal. The neutral response was marked by 20 (19%) participants, indicating a moderate level of knowledge or lack of clarity about their proficiency with the system.

The question "The Brasília de Minas City Hall website is compatible with other technologies I use" (Table 4) showed a positive perception, with 56 (54%) respondents agreeing or strongly agreeing with the compatibility of the portal. However, 30 (29%) were neutral, possibly due to a lack of a formed opinion on compatibility, and 18 (17%) disagreed or strongly disagreed, suggesting that some users perceive incompatibilities between the portal and the technologies they use.

Table n°4: Facilitating Conditions



Facilitating conditions refer to an individual's confidence in an organization's ability to provide the necessary infrastructure to effectively use a system (Souza et al., 2020). They also encompass the user's access to the resources and support needed to use the technology. As noted by Venkatesh et al. (2003), the better the perceived facilitating conditions, the greater the user's intention to adopt and use the technology.

IV. Conclusion

The results of the Facilitating Conditions indicate that the PMBM portal is meeting citizens' expectations in terms of necessary resources and compatibility with other technologies. The positive perception of users' technical knowledge also reflects a good level of digital literacy. However, disagreements and neutral responses suggest that some improvements may be needed, especially regarding the portal's compatibility with different devices and the necessary knowledge to navigate the platform.

In general, the data indicates that the PMBM portal has positively contributed to the interaction between citizens and municipal management in various aspects. The majority of portal users perceive their interaction with the portal as clear and understandable, and many consider the platform easy to use. This positive perception is indicative that the Citizen Relationship Management (CiRM) system implemented by PMBM is meeting citizens' expectations for usability and accessibility. However, the study also revealed areas that still require improvement, especially regarding the availability of support and assistance for users. A portion of the participants remains neutral or dissatisfied with the available support, which suggests the need to enhance these services to ensure a more positive and reliable experience.

It is important to recognize some limitations of this research. One limitation was the short timeline for data collection, which impacted the final number of valid responses. The initial expectation was to obtain around 200 valid responses, but the final number was below this target. It is believed that a longer data collection period would have enabled this goal to be achieved. Furthermore, the initial difficulty in identifying the target audience of the study, specifically citizens who had already accessed the PMBM portal, also impacted the number of responses obtained.

For future studies in this area, it is suggested to include considerations of public marketing, as the theoretical basis of this work addresses issues of relationship management and meeting the needs and satisfaction of citizens, but does not delve into these aspects. It is also recommended to extend the data collection period to increase the sample size and obtain more representative results. Additionally, it would be relevant to explore in more depth the reasons behind the technical difficulties reported by users and investigate other variables that may influence citizens' satisfaction and trust in the PMBM portal. Including interviews or focus groups could provide valuable qualitative insights to complement the quantitative data and enrich the understanding of how citizens use and perceive the portal.

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