

Consumer Reactions to E-Government Services: The Influence of Personal Information Sharing

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Abstract—Due to the global trend of digital government transformation, it is essential to understand the predictors of consumer adoption of e-government services and the underlying mechanisms to accelerate the digital transformation process. Although e-government services often collect personal information, no research examines its impact on e-government service adoption. Drawing on the stimulus-organism-response (S-O-R) theory, this research investigates the influence of the level of personal information sharing on consumers' attitudes and intentions to use e-government services. Based on two experimental studies with 669 participants, this research finds that a high level of personal information sharing hinders the service adoption both directly and indirectly by worsening consumers' attitudes toward service usability and the government. However, when consumers view the service as highly useful, their sharing of personal information enhances their service adoption by improving their attitudes toward the government's personal information management. For female consumers, favorable attitudes toward service usability and personal information management and the availability of diverse functions lead to higher adoption intentions. These findings provide valuable insights for government officials and policymakers in designing effective e-government services that strike a balance between personal information requirements and consumer acceptance.

Keywords—service systems and organizations, consumer and industrial applications, communications

I. INTRODUCTION

The widespread adoption of digital technologies has facilitated the transformation of traditional government services into e-government services (i.e., those delivered using information and communication technologies). The COVID-19 pandemic further accelerated the global development of e-government and solidified the digital transformation of government as an irreversible trend [1]. However, many countries still lag behind the global average in e-government development [2]. Thus, it is critical for government agencies to understand consumer reactions to e-government services to enhance the adoption and effectiveness of digital services.

II. THEORY AND HYPOTHESES

Many studies examine various factors such as trust, social influence, and perceived risk that influence consumers' willingness to use e-government services [3, 4]. However, very little research examines how consumers react to the handling of personal information in these services. Given that

e-government services often involve the collection and use of personal information, it is vital to understand how consumers perceive and react to the management of their personal information within these services. This research examines the impact of personal information sharing on consumer attitudes and adoption behavior, with the goal of uncovering the mechanisms driving consumer adoption of e-government services and thus providing guidance for effective e-government service design.

In line with the stimulus-organism-response (S-O-R) theory [5, 6], we develop hypotheses (see Fig. 1 for details) that explore the effects of the required level of personal information sharing (stimulus: external stimuli from the environment) on consumers' attitudes toward the e-government service usability, the government, and the government's personal information management (organism: individual internal processes) and consequently on the consumers' intention to use the service (response: the individual's behavioral response to the initial stimuli).

III. METHODOLOGY

To test our hypotheses, we conducted two experimental studies. Study 1 focuses on testing hypotheses in the top half of Fig. 1, and study 2 examines those in the bottom half. Study 1 utilized a two-group design (high vs. low personal information sharing level). The high group was exposed to a real e-government application that requested important personal information (e.g., name, home address, and passport number), while the low group did not receive any request to share personal information. Study 2 employed a 2 (personal information sharing: high vs. low) \times 2 (app function diversity: high vs. low) between-subjects design. Specifically, we used two fictitious e-government applications to manipulate the level of personal information sharing, similar to study 1. In addition, we introduced app function diversity as a control variable to access its potential impact on the intention to use the application, considering consumers' preference for product diversity [7].

We collected data from Yahoo! Crowdsourcing, an established Japanese online panel. We recruited 209 and 460 participants for study 1 and study 2, respectively. In both samples, about 60% of the participants were male, and less than 10% were university students. Our tests of convergent and discriminant validity and our manipulation checks for the experimental design ($p < .05$) were successful.

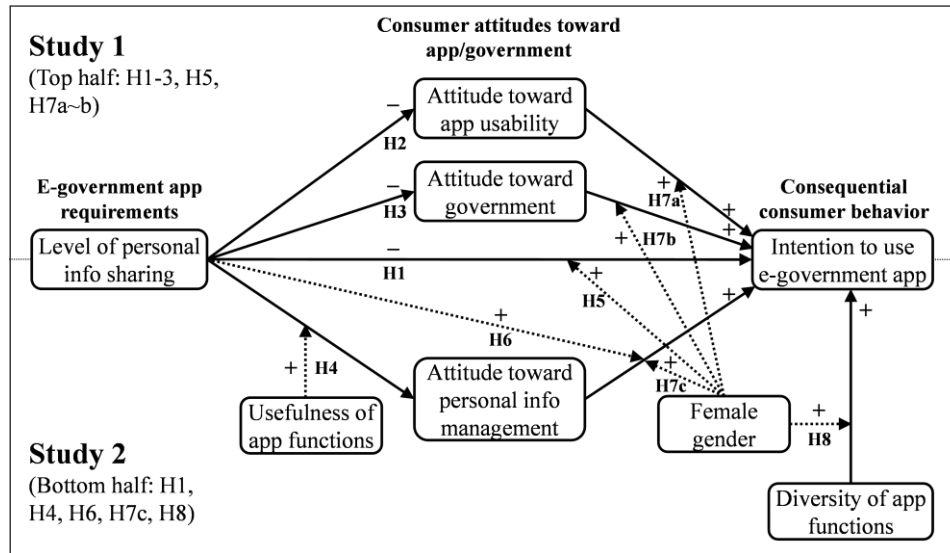


Fig. 1. Conceptual model and hypotheses.

IV. RESULTS

We used linear regression to test our hypotheses. The results support all hypotheses except H7b. In study 1, the level of personal information sharing has a direct negative effect on the intention to use the application for female consumers only (H5 supported, H1 supported only for females). It also negatively affects attitudes toward app usability and government (H2, H3 supported). While the positive effect of attitude toward app usability on the intention to use is stronger for females (H7a supported), the positive effect of attitude toward government does not differ between genders (H7b rejected). In study 2, the level of personal information sharing has a direct negative effect on the intention to use (H1 supported). It positively influences attitude toward personal information management only when the app functions are highly useful (H4 supported). Furthermore, the level of personal information sharing and female gender enhance the positive effect of attitude toward personal information management on the intention to use (H6, H7c supported). Diversity of app functions positively affects the intention to use for female consumers only (H8 supported).

V. DISCUSSION

Our findings shed light on the importance of personal information sharing in shaping consumer attitudes and adoption behavior toward e-government services. Overall, a high level of required personal information sharing decreases consumers' intention to use the service, either directly or by decreasing their attitudes toward service usability and government. However, when consumers view the service as highly useful, a high level of personal information sharing increases their intention to use the service by improving their attitude toward personal information management. Furthermore, a favorable attitude toward personal information management contributes to a higher intention to use the service, particularly for a high level of personal information sharing. Female consumers' positive attitudes toward service usability and personal information management lead to a higher intention to use the service. In addition, diverse

functions drive women's intention to use the service, while their impact is minimal for men.

These findings provide valuable insights into effective service design for government agencies to facilitate e-government service adoption. For example, government agencies may consider minimizing the collection of important personal information. When collecting such information is unavoidable, they may benefit from maximizing the usefulness of the service, which makes consumers happy to share their information. In addition, for e-government services targeted at female citizens, we recommend incorporating diverse functions.

ACKNOWLEDGMENT

The authors thank all participants in our experiments.

REFERENCES

- [1] M. Minevich, "Digital government is no longer an option, it is an imperative," *Forbes*, October 2022. <https://www.forbes.com/sites/markminevich/2022/10/29/digital-government-is-no-longer-an-option-it-is-an-imperative/?sh=300960345d23>
- [2] UN, "E-government survey 2022: the future of digital government," United Nations, New York, 2022. <https://desapublications.un.org/sites/default/files/publications/2022-11/Report%20without%20annexes.pdf>
- [3] M. Horst, M. Kuttschreuter, and J. M. Gutteling, "Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands," *Comput. Hum. Behav.*, vol. 23, pp. 1838–1852, July 2007.
- [4] Y. K. Dwivedi, N. P. Rana, M. Janssen, B. Lal, M. D. Williams, and M. Clement, "An empirical validation of a unified model of electronic government adoption (UMEGA)," *Gov. Inf. Q.*, vol. 34, pp. 211–230, April 2017.
- [5] J. Jacoby, "Stimulus-organism-response reconsidered: an evolutionary step in modeling (consumer) behavior," *J. Consum. Psychol.*, vol. 12, pp. 51–57, January 2008.
- [6] P. Sultan, H. Y. Wong, and M. S. Azam, "How perceived communication source and food value stimulate purchase intention of organic food: an examination of the stimulus-organism-response (SOR) model," *J. Clean. Prod.*, vol. 312, Article 127807, August 2021.
- [7] S. H. Park and S. P. Han, "From accuracy to diversity in product recommendations: Relationship between diversity and customer retention," *Int. J. Electron. Commer.*, vol. 18, pp. 51–72, Dec 2014.