

Building Citizen Satisfaction Towards E-Government Services: A Conceptual Framework

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ABSTRAK

Dalam konteks layanan pemerintah, kepuasan dari pengguna menjadi penentu kesuksesannya. Penelitian ini bertujuan untuk mengembangkan dan menguji model penentu kepuasan masyarakat terhadap layanan e-government dengan menggunakan technology acceptance model dan trust theory. Secara khusus, peneliti melihat peran dari perceived e-service yang terdiri atas layanan inti, layanan fasilitas, dan layanan pendukung dalam mempengaruhi perceived usefulness dan trust in e-government, serta melihat bagaimana trust in e-government mempengaruhi perceived usefulness dan citizen satisfaction. Terakhir, peneliti menguji perceived usefulness dalam mempengaruhi citizen satisfaction. Penelitian ini dilakukan pada masyarakat yang berkewajiban untuk membayar dan melaporkan pajak (wajib pajak) secara online melalui DJP Online di Provinsi Sumatera Selatan, Indonesia, sebanyak 240 responden. Pengumpulan data dilakukan secara daring dengan menyebarkan kuesioner melalui platform Google Forms. Data yang diperoleh kemudian dianalisis menggunakan path analysis melalui Structural Equation Modeling dengan Partial Least Square (SEM-PLS). Temuan penelitian ini menunjukkan jika perceived e-service yang terdiri atas layanan inti, layanan fasilitas, dan layanan pendukung berpengaruh positif terhadap perceived usefulness dan trust in e-government, sementara trust in e-government mempengaruhi perceived usefulness dan citizen satisfaction. Terakhir, penelitian ini mengonfirmasi jika citizen satisfaction dipengaruhi oleh perceived usefulness.

ABSTRACT

In the context of government services, user satisfaction becomes the determinant of its success. This study aims to develop and examine a model for determining citizen satisfaction with e-government services using the technology acceptance model (TAM) and trust theory. Specifically, we look at the role of perceived e-service which consists of core services, facilitating services, and supporting services in influencing perceived usefulness and trust in e-government. We also see how trust in e-government affects perceived usefulness and citizen satisfaction. Finally, we examine perceived usefulness regarding its influence on citizen satisfaction. This study is carried out on citizens who are obliged to pay and report taxes (taxpayers) through the online platform of Directorate General of Taxes (DJP Online) in South Sumatera Province, Indonesia, as many as 240 respondents. The data is collected online by distributing questionnaires through Google Forms. The data obtained is then analyzed using Structural Equation Modeling with Partial Least Square (SEM-PLS). The findings of this study indicate that perceived e-service which consists of core services, facilitating services, and supporting services has a positive influence on perceived usefulness and trust in e-government, while trust in e-government affects perceived usefulness and citizen satisfaction. Finally, this study confirms that citizen satisfaction is influenced by perceived usefulness.

ARTICLE HISTORY

Submitted: 16-04-2023
Revised: 09-05-2023
Accepted: 09-05-2023
Published: 14-05-2023

KATA KUNCI

Persepsi Layanan Elektronik; Kepercayaan pada E-Government; Persepsi Kegunaan; Kepuasan Masyarakat, Layanan Pemerintah

KEYWORDS

Perceived E-Service; Trust in E-Government; Perceived Usefulness; Citizen Satisfaction; Government Service

INTRODUCTION

The rapid development in information and communication technology is currently forcing the government and public service providers to be more effective. Various studies have discussed how a service can provide satisfaction for the community so that it can increase trust (Razak et al., 2020; Alkrajji et al., 2020). This is because the design of online-based services provided by the government will be closely related to the perception built by the public for the quality of the

service they receive and the satisfaction they feel after accessing the e-service (Al-Swidi & Faaeq, 2019; Zhao et al., 2019).

A survey conducted by the United Nations (UN) in 2018 regarding the use of e-government also shows that UN members in 193 countries have used the national portal as a tool for disseminating information from the government. Most UN members also use e-government to provide online transactional services, such as payment and tax reporting, which are also carried out in Indonesia. This digital transformation is one of the government's efforts to build a sustainable and resilient society (United Nations, 2018).

Recently, there is a case in Indonesia that has the potential to reduce public trust and voluntary compliance in paying taxes (Pardede, 2023; Pratama, 2023). This case is related to the illegal possession of property by a tax official, which eventually became the attention of the media and the public nationally. As a result, this also has reduced public trust and their reluctance to pay taxes (Pratama, 2023). So far, the Directorate General of Taxes has provided services or facilities for the public to submit tax reports online through the DJP Online platform. However, in fact, this platform also often experiences errors when accessed by the public (Rubiah, 2023; Indraini, 2023).

In providing both online and offline services to the public, the government needs to pay attention to the design of the services they offer. This service design will determine the user's service experience and become the basis for users to form their perceptions of usability, trust, and satisfaction in using the service (Li & Shang, 2020; Patricio et al., 2020; Chen et al., 2020). In the public sector, the government needs to pay attention to the design of both online and offline services as they are obliged to provide services that can be accessed and understood by the whole community, so that they can optimize their use (Alkhwaldi & Al Eshoush, 2022). When these services can be accessed and used by the public, and are able to increase their trust and satisfaction with government services, this indicates the government's success in carrying out a comprehensive digital transformation, which is ultimately in line with the common goals of the UN (Criado & Gil-Garcia, 2019).

This study follows the suggestion from Chan et al. (2021) who view e-service as a unit of three service components. The first component is the core service which consists of accuracy, completeness, self-service capability, and convenience. The second component relates to facilitating services, which consist of accessibility, privacy and security protection, and user support. The third component relates to supporting services, which include personalization capabilities and transparency (Chan et al., 2021; Grönroos, 2000). The existence of these three service elements or components will enable comprehensive and comprehensive service delivery so that it can lead to various positive outcomes such as perceived usefulness, increased trust, and community satisfaction. In the context of the public sector, satisfaction is seen as a measure of the psychological response given by the public which describes their assessment of their experiences and feelings in using websites or government applications (Li, 2021; Nezhina et al., 2021). In addition, because the use of e-services is mandatory from the government, the success of e-services is more relevant when viewed from user satisfaction, not frequency or intention to use (Li, 2021; Ferdous et al., 2022).

In examining the influence of online service design perceived by the community on these various outcomes, this study uses a psychological perspective from the field of public administration behavior (Alkrajji, 2020), which has so far been rarely explored in Indonesia. So far, study on the topic of services from the public sector in Indonesia has focused more on non-electronic conditions, such as bureaucratic reform, public service performance, the behavior of civil servants, to public sector innovation (Pribadi, 2021; Pitaloka & Tannady, 2020; Lanin &

Hermanto, 2019; Primary, 2019). In addition, this study also specifically considers three components in e-service which have so far received little attention, considering that most previous studies have not highlighted the characteristics of this e-service design (Hassan & Wright, 2020; Trischler et al., 2019; Sofyani et al., 2020). Furthermore, Alkrajji (2020; Li, 2021) also stated that research related to mandatory technology adoption, such as those issued by the government or policymakers, still needs to be studied in a more comprehensive manner.

Based on this explanation, this study is conducted with the aim of filling the research gap described above by identifying public perceptions of e-services provided by the government, as well as looking at its effect on perceived usefulness and trust in e-government. Then, this research was also conducted to see the effect of trust in e-government on the perceived usefulness and citizen satisfaction of e-service from the government. This study uses the concept of e-service which is seen from three components, namely core service, facilitating service, and supporting service, following the advice of Grönroos (2000) and Chan et al. (2021), which is predicted to affect citizen satisfaction.

Literature Review

Perceived E-Service as Antecedent

Designing a service in a digital context requires consideration from all units in the organization. The challenge that arises for service providers is how they can expand user migration from traditional retail to online media services (e-services). Today, many companies have opted for solutions that aim to use technology to minimize or even eliminate contact between clients and staff (Rita et al., 2019; Walsh et al., 2010). Related to this, the transition from face-to-face services to electronic services can cause dissatisfaction for some customers, because not everyone feels free to use impersonal services and prefers to deal with real people, not machines (Azemi et al., 2019; Karolak et al. al., 2021). On the other hand, some people also prefer the innovations offered through e-services that allow them to access services more flexibly and quickly.

According to Ventre & Kolbe (2020), perceived usefulness is a measure that indicates the extent to which the use of a technology is believed to bring benefits to those who use it. The stronger individuals perceive that an application can increase their performance and productivity, the more likely they will decide to use the application (Grover et al., 2019). In terms of perceived usefulness, service providers must also provide good information on service usage, so that users will get adequate information (Singh & Sinha, 2020). From several previous studies, perceived usefulness allows users to work faster, experience benefits, increase productivity and effectiveness, and improve their performance.

New services require consideration of all elements of the service being delivered. Most services are multidimensional collections consisting of three main elements: core services, facilitation services, and support services (Grönroos, 2000). Core services are the main services or basic value offered by the service provider, facilitating services are services or goods that are essential for the consumption of the core service, and supporting services are optional services or goods that enhance the quality and perceived value of the service package (Grönroos, 2000; Chan et al., 2021; Wang et al., 2020).

Building trust in e-government is not easy, especially for a country that faces many contextual, technological and social challenges. Studies from Capistrano (2020) specifically review several e-government platforms that provide several services to the community, including social security services provided by the government service insurance system (GSIS), social security system, and tax services by the Domestic Revenue

Bureau (BIR). The results of the study show that trust in technology and perceived information quality are the most significant determinants of trust in e-government (Capistrano, 2020).

According to Davis (1989), perceived usefulness is the level at which a person believes that the use of technology provides various benefits or advantages for its users. Several studies conducted by Ventre & Kolbe (2020; Grover et al., 2019; Li & Shang, 2020) managed to prove that there is a positive and significant effect of perceived service on perceived usefulness. In the context of the public service sector, governments that utilize technology in their systems certainly need to have the ability to create systems that facilitate and benefit their users. The condition by which the community as users perceive that the government can provide valuable and targeted service will lead to the perception of users that the service can be useful for them. Based on this, we designed a research hypothesis, namely:

H1. Perceived e-service is positively correlated with perceived usefulness

H2. Perceived e-service is positively correlated with trust in e-government

Trust in E-Government as Antecedent

In line with technological advances and community demands related to services, public service delivery units are required to meet community expectations in improving services. Service satisfaction is the result of public opinion and evaluation of the performance of services provided by public service providers. Meanwhile, recipients of public services are individuals, communities, government agencies and the business world, who receive services from public service providers. Even though the government continues to make ongoing efforts in the transformation of public service delivery, significant challenges remain in designing effective e-government services to meet the needs of citizens (Goldkuhl, 2016; Tummers & Rocco, 2015). Service design determines the key elements of the service offering and consequently, influences the user's service experience and forms the basis for delivering valuable service outcomes, such as perceived service quality and user satisfaction (Beltagui et al., 2016; Li & Shang, 2020; Wirtz & Kurtz 2016).

In the field of e-government, previous research has proven that trust has a vital influence on users' use of e-government services (Khan et al., 2020; Abu Shanab et al., 2019; Santa et al., 2019; Yusof et al., 2019; Alzahrani et al., 2018). The trust formed after people use e-government services is post-use trust. This clearly proves that service users have obtained an ease in using these services so that satisfaction appears in both individual and community users. Based on this, we formulated a research hypothesis, namely:

H3. Trust in e-government is positively correlated with perceived usefulness

H4. Trust in e-government is positively correlated with citizen satisfaction

Perceived Usefulness and Citizen Satisfaction

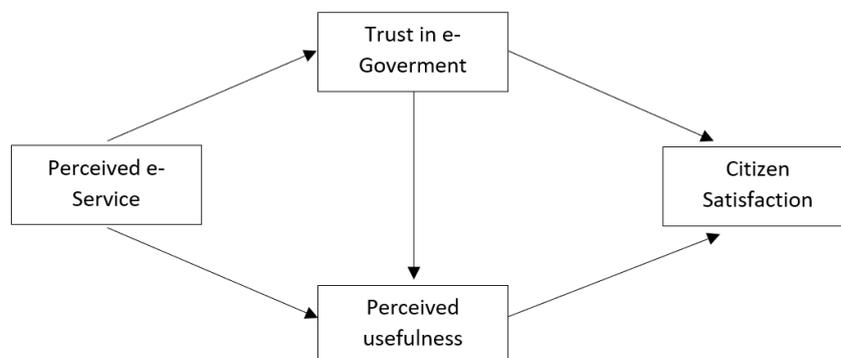
In achieving satisfaction, it is hoped that there will be several benefits that can be felt by users. Service providers must provide the promised value or benefits to customers. Perceived usefulness is one of the main determinants of service user satisfaction (Davis, 1989; Grover et al., 2019). In a business context, users will make transactions again when they find an advantage in using a service (Ventre & Kolbe, 2020; Alkrajji, 2020). Perceived usefulness can affect the actual attitudes, intentions, and behavior of service users. In the context of public scores, services provided by the government and perceived as beneficial

by the community will increase people's satisfaction with these services (Ferdous et al., 2022; Lanin & Hermanto, 2019).

Citizens are more likely to be satisfied with a public service when they believe it to be useful. For instance, a citizen is likely to be satisfied with the service if they are looking for information about a specific government program and find it to be both conveniently available and helpful. Similarly, a citizen is likely to be satisfied with the convenience of service if they can complete a transaction or request online without having to go to a government office. In several studies, it has also been found that high perceived usefulness will increase service satisfaction (Rita et al., 2019; Alkrajji et al., 2020; Chan et al., 2021) by satisfying citizens' wants and expectations, enhancing their usage of the service, and giving them a favorable impression of the government's capacity to provide successful services. Based on this, the author formulated a research hypothesis, namely:

H5: Perceived usefulness is positively correlated with citizen satisfaction

Figure 1.
Conceptual Framework



Source: made by author (2023)

RESEARCH METHODS

This research was conducted using a quantitative method by looking at e-government services in the context of websites and tax reporting applications through DGT Online. The targeted population is people who are obliged to pay and report taxes (taxpayers) online through DGT Online in South Sumatra Province, Indonesia, as many as 240 respondents, who were selected by purposive sampling method. Data collection was carried out online by distributing questionnaires through the Google Forms platform, from March to April 2023. In the questionnaires distributed, respondents were asked to fill in demographic information which includes age, income, occupation, education, and how long they have used the e-service platform. Then, respondents were asked to fill in their perceptions of the statement items that had been developed by the researcher. All items in this study were assessed using a 5-point Likert scale, with a range from strongly disagree (1) to strongly agree (5). The data obtained were then analyzed using path analysis through Structural Equation Modeling with Partial Least Square (SEM-PLS). Details of the measurement of each research variable are as follows:

1. Perceived e-service is measured by a scale developed from the research of Chan et al. (2021) which consists of three dimensions, namely core service, facilitating service, and supporting service, with a total of ten items.

2. Trust in e-government is measured by a scale adopted from research by Alkrajji et al. (2020) which consists of three items.
3. Perceived usefulness is measured by a scale developed from research by Alkrajji et al. (2020) which consists of five items.
4. Citizen satisfaction is measured by a scale developed from research by Chan et al. (2021) which consists of three items.

RESULTS AND DISCUSSIONS

Validity and Reliability Score

PLS-SEM was adopted to examine the relationship in the research framework and hypothesis testing. This research fulfills the validity requirements related to the principle that measurements of different constructs should not be highly correlated (Hair et al., 2014). Table 1 shows that the outer loading values for all indicators meet the acceptance criteria with a value of > 0.700 and the Average Variance Extracted value is greater than 0.50. By achieving the values of outer loadings and Average Variance Extracted, it can be said that measurement indicators are valid in measuring latent variables. From table 1 it is also known that the Cronbach's Alpha and Composite Reliability values for all indicators have a value greater than 0.70, meaning that all indicators show accuracy, consistency, and accuracy of measuring instruments in making measurements. The measurement parameters can be seen in Table 1 below.

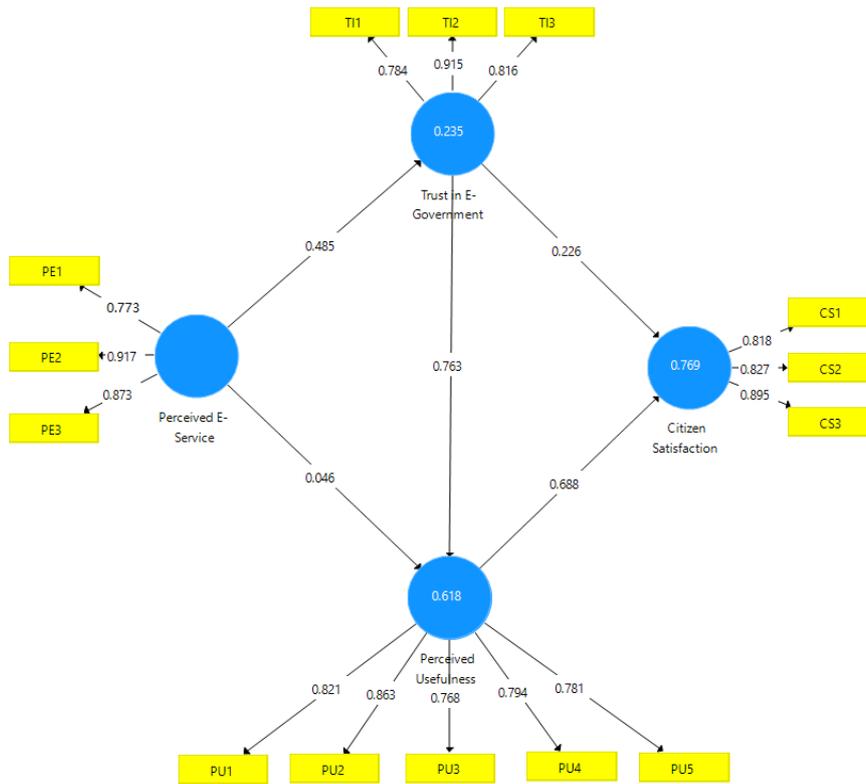
Table 1.
Validity and Reliability Score

Variable	Cronbach's Alpha	Loading Factor	AVE	Composite Reliability
Citizen Satisfaction	0.804		0.718	0.884
CS1		0.818		
CS2		0.827		
CS3		0.895		
Perceived E-Service	0.788		0.635	0.833
PE1		0.773		
PE2		0.917		
PE3		0.873		
Perceived Usefulness	0.865		0.650	0.903
PU1		0.821		
PU2		0.863		
PU3		0.768		
PU4		0.794		
PU5		0.781		
Trust in E-Government	0.791		0.706	0.878
TI1		0.784		
TI2		0.915		
TI3		0.816		

Source: Processed Data (2023)

The measurement model from the test results using Smart PLS V3.2.9 can be seen in Figure 2 below:

Figure 2.
Output of Measurement Model



Source: Processed Data (2023)

Discriminant Validity (Fornell-Larcker Criterion)

The discriminant validity test was carried out to find out how far the latent constructs or research variables really differ from other constructs. A construct is said to be valid if it has a square root value of AVE greater than the correlation value between latent variables (Fornell and Larker, 1981, in Wong, 2013). The results of the discriminant validity test can be seen in the Table 2 as follows.

Table 2.
Results of Discriminant Validity

	Citizen Satisfaction	Perceived E-Service	Perceived Usefulness	Trust in E-Government
Citizen Satisfaction	0.847			
Perceived E-Service	0.431	0.797		
Perceived Usefulness	0.815	0.416	0.806	

	Citizen Satisfaction	Perceived E-Service	Perceived Usefulness	Trust in E-Government
Trust in E-Government	0.766	0.485	0.785	0.840

Source: Processed Data (2023)

Results of Model Causality Test

Based on the results of the hypothesis testing, it is found that all hypothesis proposed in this study is accepted with positive and significant results, with the details shown in Table 3.

Table 3.
Model Causality Test Results

Model Causality	Path Coefficients	T Statistics	P Values
Perceived E-Service → Perceived Usefulness	0.546	9.695	0.000
Perceived E-Service → Trust in E-Government	0.485	8.140	0.000
Trust in E-Government → Perceived Usefulness	0.763	15.911	0.000
Trust in E-Government → Citizen Satisfaction	0.226	4.068	0.000
Perceived Usefulness → Citizen Satisfaction	0.688	13.156	0.000

Source: Processed Data (2023)

From the data in Table 3, it can be concluded that:

1. Perceived E-Service has a significant influence on Perceived Usefulness with a relationship level of 0.546 (H1 is accepted).
2. Perceived E-Service has a significant influence on Trust in E-Government with a relationship level of 0.485 (H2 accepted).
3. Trust in E-Government has a significant influence on Perceived Usefulness with a relationship level of 0.763 (H3 is accepted).
4. Trust in E-Government has a significant influence on Citizen Satisfaction with a relationship level of 0.226 (H4 is accepted).
5. Perceived Usefulness has a significant effect on Citizen Satisfaction with a relationship level of 0.688 (H5 is accepted).

Discussion

The purpose of this research is to explore the aspects that determine people's satisfaction with government services. This research focuses more on people's perceptions of e-service, and how this perception influences their assessment of the usefulness and trust in e-government, which ultimately impacts on people's satisfaction. Overall, the results of the hypothesis testing performed show that all hypotheses are accepted significantly.

First, the author proposes that e-service is represented by public perceptions on three things, namely core service, facilitating service, and supporting service. When the e-service provided by the government has these three aspects, the result is a positive perceived e-service from the community, which ultimately leads to positive outcomes such as perceived usefulness and trust in e-government (H1 and H2 are accepted). This finding is in line with several previously conducted studies (Ventre & Kolbe, 2020; Grover et al., 2019; Li & Shang, 2020; Capistrano, 2020).

People who use e-services to pay their taxes will form their own perceptions of the quality of these services. Perceived e-services formed by the community can direct them to feel that the use of e-services provides many benefits and conveniences. People do not need to go directly to the tax office to do reporting, save time and costs, and have higher flexibility by reporting online.

Meanwhile, with regard to trust, services that have various features and are able to ensure the safety of their users will make the public have confidence in government agencies that they are protected from fraud, doubts and dangers in using information and communication technology. The positive perception formed by the community towards e-service also includes their experience of the reliability, responsiveness, security, and ability of e-services to meet the needs and expectations of the community, all of which ultimately increase public trust in e-government.

Furthermore, the results of this study also show that the level of public trust in the government can increase the perceived usefulness of e-services and the level of satisfaction of these people with government services (H3 and H4 are accepted). This finding supports a number of studies that have been conducted (Abu-Shanab, 2019; Khan et al., 2020; Chan et al., 2021). This trust that is owned by the community can build confidence in using the service, because the community also believes that the government has designed the e-service to facilitate and facilitate the community, so that it is useful for them. In addition, people also have a willingness to try various features in e-services, which can help them maximize the use of e-services.

Regarding the level of satisfaction, a number of previous studies have confirmed that trust leads to satisfaction, especially in the context of a service provider-user relationship (Santa et al., 2019; Yusof et al., 2019; Alzahrani et al., 2018). Users who have trust believe that they will have a positive experience when using services, including e-services in the context of this study. In addition, the trust that is owned by the community will make them more active in providing feedback for government services, so that they can improve service improvement and community satisfaction.

Finally, based on the results of testing the fifth hypothesis, this study confirms that perceived usefulness is one of the main determinants in forming community satisfaction. People will feel satisfied when using e-services from the government when they find benefits in these services. This research is in line with findings from previous research which also confirms the positive effect of perceived usefulness on satisfaction (Alkrajji et al., 2020; Chan et al., 2021).

CONCLUSIONS

This research was conducted to look at the factors that influence public satisfaction, particularly related to digital services provided by the government and policy makers in Indonesia, in the context of online DGT services that enable the public to make digital tax reports. This research uses a psychological point of view from the behavioral field of public administration which so far has received little attention in Indonesia. From the results of the research that has been done, this study proves that community satisfaction can be influenced by perceived usefulness and trust in e-government, both of which are influenced by perceived e-service from the community.

Theoretically, this research has provided a better understanding of the determinants of e-government service success, namely by looking at user satisfaction, namely the community itself. This research also bridges the gap that existed in previous research in the field of public administration in Indonesia, especially regarding mandatory electronic services, considering that so far most research in this field has focused on bureaucratic reform, public service performance, civil servant behavior, to public sector innovation. Practically, this research is relevant for the government to take into consideration in improving their services. The findings in this study highlight the importance of integrating three aspects of e-service, namely core service, facilitating service, and supporting service, because all three can form positive perceptions from service users. The concerns from government for their e-service is believed to lead to various positive outcomes such as increased trust, perceived usefulness, and satisfaction of the citizen toward the services.

However, this study also has several limitations. First, this study uses cross-sectional data obtained from only one region in Indonesia. In order to ensure the generalizability of the study, there is a need to conduct similar research within different group, community, or region. In addition, future research is also suggested to carry out longitudinal studies as it will lead to better robustness of the data. Finally, future studies can consider the conditional or moderating variable that provide certain condition for the relationship between the variables.

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