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INVESTIGATING COMMUNITIES' PERCEPTIONS TOWARDS INTENTIONS TO USE URBAN SERVICES TECHNOLOGIES IN NILAI

Syafiq Niseng* (a), Zaliza Azan (b)
*Corresponding author

(a) , *Faculty of Business Administration, University Poly-Tech Malaysia, syafiqniseng01@gmail.com*
(b) *Faculty of Business, Accounting and Social Science, University Poly-Tech Malaysia, zaliza@uptm.edu.my*

ABSTRACT

This abstract provides a comprehensive overview of quantitative research, a crucial aspect of scientific inquiry. It delves into the theoretical foundations, hypothesis formation, study design, data collection, and the use of statistical tools and techniques. The paper also highlights the importance of representative samples in enhancing the generalizability of findings. The abstract also explores the evolving landscape of quantitative research, including technological advancements like data analytics and machine learning algorithms. It emphasises the ethical considerations of maintaining integrity, confidentiality, and informed consent throughout the research process. The practical implications of quantitative research findings are discussed, emphasizing their role in guiding policy decisions, fostering innovation, and advancing scientific understanding. The abstract concludes by emphasising the importance of quantitative research in addressing complex phenomena, promoting evidence-based practice, and driving scholarly inquiry across academic fields.

1.0 INTRODUCTION

The ability to innovate and absorb technology in smart cities is significantly influenced by local urban identity, culture, and knowledge ecosystems. Smart city research has often portrayed smart cities as a common goal without considering local cultural variations. Future smart cities will face multiple tasks, including choosing culturally suitable technology, customising it, and controlling its adoption. This study combines technology acceptance modelling with smart city discussions to address this requirement. The structural equation modelling method is applied to enhance understanding of technological acceptability. A novel synthetic model, the Urban Services Technology Acceptance Model (USTAM), is proposed, consisting of twelve elements chosen through a focused literature assessment and validated through a survey-based approach. The model incorporates essential technology-related criteria such as self-efficacy, operation, work facilitation, relative advantage, and compatibility. The USTAM is a valuable instrument for forecasting technology adoption in smart city development. The model is important for ensuring technology is suitable for local cultural circumstances, managing technology integration at urban scales, and assisting developing countries in resource-efficient participation in the smart city trend. The model is tailored for Iran and Bangladesh and is beneficial for towns with diverse cultural identities and characteristics aiming to implement their unique smart city policies.

2.0 LITERATURE REVIEW

2.1 Behavioural Intention to Use Urban Services Technology.

Urban service technologies are revolutionizing city life by offering improved sustainability, efficiency, and quality of life. However, their adoption and effectiveness depend on more than just their inventive qualities and the urban problems they aim to address. The social and cultural contexts in which these technologies are embedded have a significant impact on their success, as well as their utility and design. Research conducted through comprehensive analysis reveals that perceived usefulness and perceived ease of use significantly influence the acceptance and adoption of technology in urban settings. These elements are not isolated variables but are intertwined in a complex matrix that dictates the end-user's behavioral intention. For instance, the perceived usefulness of a technology directly impacts the willingness of an individual to integrate it into their daily routines, highlighting the pragmatic aspect of technology adoption. Similarly, if the technology is perceived as easy to use, it reduces the cognitive burden on the user, thereby increasing the likelihood of its acceptance. Christian Bremser (2019) emphasizes the need to design and present urban services technology in a way that aligns with these key determinants, leading to a higher adoption rate and a positive user experience. Keng-Boon Ooi (2011) further corroborates the significance of perceived usefulness and ease of use in determining behavioral intention toward adopting urban services technology. Their research, published in Computers in Human Behavior, delves into the nuanced ways these factors collectively influence the decision-making process of individuals. Giuseppe Faldi (2022) offers a compelling examination of this critical intersection between technology acceptance and community perception. Their analysis, deeply rooted in empirical research within diverse urban settings, underscores the nuanced ways in which communities interact with and subsequently shape the trajectory of urban service technologies. They argue that the ability of urban service technologies to resonate with the community's collective ethos inextricably links their sustainability and impact, underscoring the indispensable role of community engagement in their design and deployment. Miltiades D. Lytras (2019) further illuminates the critical role of community perception in the successful deployment of urban service technologies. Their study, published in the journal 'Sustainability,' delves into the multifaceted nature of community engagement and its profound influence on the efficacy and acceptance of such technologies. Lytras et al. argue that beyond the technological attributes, it is the perceived ease of use, and more importantly, the alignment with community

needs and values, that determines the extent to which these technologies are embraced. This assertion underscores the necessity of a participatory approach in the conceptualization and implementation phases, ensuring that the technology serves as a solution rather than an imposition.

2.2 Theory Acceptance Model (TAM)

The Technology Acceptance Model was developed by Davis (1989) and is one of the most popular research models to predict the use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine individual technology acceptance behavior in different information systems constructs (Surendran, 2013).

In the TAM model, there are two factors—perceived usefulness and perceived ease of use—relevant to computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceived ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors, and political factors. Social factors include language, skills, and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crises. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is a measure of the likelihood of a person employing the application (Surendran, 2013).

2.3 Service Quality

The study explores the impact of travel service quality on the behavior improvements of Bangkok's community-based electric ridesharing. It uses TPB, TAM, and goal-framing theory to examine people's thoughts and reasons for using the service. After 101 valid responses, the quality of travel-related services keeps SSVS clients using the service. Users with confidence in community mobility set greater eudemonic and normative goals in training. Multi-group studies show travel modes can change associations, and even with high self-esteem, participants paid less. The research also analyses why Dongtai Chinese like telemedicine. We apply social cognition theory to examine the impact of individual and environmental factors on patients' telemedicine plans. Results show that subjective values and motivators boost service quality, trust, and telemedicine use. Larger organizations and self-rated health increase trust and behavior. The article examines public transport service quality and consumer satisfaction. Service quality measures the difference between client expectations and perceptions, while client satisfaction measures client perceptions and actual service quality. The study uses service dependability, frequency, comfort, on-time performance, travel speed, cleanliness, and frequency to assess passenger satisfaction. The paper criticizes the "placeless" approach that ignores local identity and expertise as an innovative solution for smart cities. The Technology Acceptance Model (TAM) and Social Cognitive Theories measure opinions on new technology use. A quantitative study was conducted in Tabriz, Isfahan, and Shiraz using structural equation modeling with Smart PLS 3.0 software to evaluate the model's validity and reliability. The study also examines Pakistani medical students' online learning preparedness, sentiments, and satisfaction during the COVID-19 epidemic. It deals with technological stress and computer confidence. Self-confidence in computer abilities may lessen technological stress and increase online learning awareness. In economically poor countries like Pakistan, the unexpected switch to online learning during the epidemic may have lowered pupils' confidence.
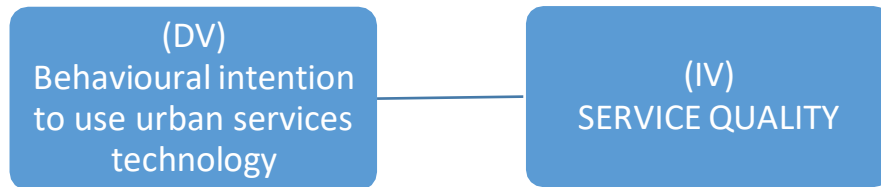
2.4 RESEARCH FRAMEWORK

| (DV) Behavioural intention to use urban services technology | —— | (IV) SERVICE QUALITY |

Figure 1

3.0 METHODOLOGY

3.1 Research Approach

The methods designed for this study will be approached with the techniques of descriptive quantitative study. This approach suits the concept of this research since the researcher wants to collect numerical data in explaining some questions from the research question. This study attempting to described and categorize a respondent based on the set of variables which are communities' perceptions towards intentions to use urban services technologies in Nilai, Negeri Sembilan. The objective of this thesis is to explore the Communities' Perceptions towards Intentions to use Urban Services Technologies in Nilai, Negeri Sembilan. Accordingly, a quantitative method of questionnaire including 24 questions will be effective in gathering data from the audience. In the current study, a quantitative approach of questionnaires including multiple choice were utilized for data collection. Collecting descriptive and explanatory data can ensure research findings.

3.2 Questionnaire Design

The design of this research is quantitative mode which involves survey study. As cited by Scott (2001), survey research is the most widely used in educational research because it measures opinions. This study is prepared to investigate the effects of four independent variables which are perceived ease of use, perceived usefulness, services quality and self-efficacy. There are 100 respondents will be chosen as the population to gather the data from communities' perceptions towards intentions to use urban services technologies in Nilai, Negeri Sembilan. Questionnaire is one of most important tools within social science research in order to gain data, information, and participant's characteristics, the behaviour and their factors toward investigation of the topic (Bulmer, 2004). Researchers then will distribute the survey questionnaire to all the lecturers according to population and sample

3.2.1 Urban Services Technology Survey Questions

Behavioural intention to use urban services technology (UST)	I intend to continue using UST.
	I always try to use UST.
	I encourage everyone to use UST.
	If UST are available to do my tasks, I still visit physical urban service offices.

3.2.2 Service Quality Survey Questions

Services Quality	By using UST I can avoid delays caused by bureaucratic procedures
	I believe when I use UST to do my work, I will be more careful about entering my data
	Using UST prevents human errors (lost letters, common mistakes in the text of the letters).

3.2.3 Self-Efficacy Survey Questions

Self-efficacy	I think I can use UST features efficiently.
	I think I can use UST successfully
	I believe I can use UST by myself

3.3 Sampling and Data Collection

This form was filled out by residents of the Nilai region in Negeri Sembilan. A survey was designed for 100 persons to complete. A questionnaire was chosen as the tool technique because it is the quickest approach to collect information and data from those who complete it (Santrock, 2008). This strategy allows the tipster plenty

of opportunity to respond to the inquiries. The 24-item quiz set is divided into five parts. The researcher made some changes to the questionnaire depending on the study questions and goals. The researcher will record the responses as a data sample based on the answers provided later in the results. Because there are twenty-four items in the set, answering the questions takes between twenty and thirty minutes.

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive Table

Item Statistics

Mean		Std. Deviation	N
	Learning to interact with UST would be easy for me.	4.09	.902	108
	It would be easy for me to become skilful using UST.	4.07	.861	108
	The UST software is user-friendly.	3.77	.963	108
	It is easy for me to navigate UST.	3.83	.912	108
	UST would enable me to complete transactions without harassment.	3.94	.895	108
	I think UST would provide a valuable service for me.	4.05	.869	108
	Using UST gives me greater control.	4.15	.895	108
	Using UST websites is an effective way to interact with the government.	3.85	1.101	108
	By using UST I can avoid delays caused by bureaucratic	3.85	.905	108
	I believe when I use UST to do my work I will be more careful about entering my data	4.05	.990	108
	Using UST prevents human errors (lost letters, common mistakes in the text of the letters).	3.89	.989	108
	I think I can use UST features efficiently.	3.88	.954	108
	I think I can use UST successfully	3.88	.914	108
	I believe I can use UST by myself	3.89	.879	108
	I intend to continue using UST.	4.04	.985	108
	I always try to use UST.	3.99	.972	108

I encourage everyone to use UST.	4.05	.951	108
If UST is available to do my tasks, I still visit physical urban service offices.	3.81	1.027	108

The mean score for interacting with the United States Treasury (UST) was 4.09, with a standard deviation of 0.902. Out of 108 respondents, the mean score for becoming skilled using UST was 4.07, with a standard deviation of 0.861. The UST software was user-friendly, with a mean score of 3.77, the lowest out of all responses. Navigating UST was easy, with a mean score of 3.83. Transactions were completed without harassment, with a mean score of 3.94. UST would provide a valuable service, with a mean score of 4.05. Using UST gives greater control, with a mean score of 4.15. Using UST websites is an effective way to interact with the government, with a mean score of 3.85. By using UST, delays caused by bureaucracy were avoided, with a mean score of 3.85. Overall, the UST software was deemed user-friendly, easy to navigate, and a valuable service. The text discusses the use of Urban Service Teams (UST) in various tasks, with a mean score of 4.05 and a standard deviation of 0.18 for each question. The mean score for UST prevents human errors, such as lost letters or common mistakes in text, with a mean score of 3.89. The mean score for UST features is 3.88, with a standard deviation of 0.19. The mean score for UST is 3.88, with a standard deviation of 0.18. Out of 108 respondents, 954 responded to this question. There seems to be a missing data point, but it likely doesn't affect the overall interpretation of the question. The mean score for UST is 3.89, with a standard deviation of 0.18The mean score for UST is 4.04, with a standard deviation of 0.17. Out of 108 respondents, 985 responded to this question. There seems to be a missing data point, but it likely doesn't affect the overall interpretation of the question. The mean score for UST is 4.05, with a standard deviation of 0.16. Out of 108 respondents, 951 responded to this question. There seems to be a missing data point, but it likely doesn't affect the overall interpretation of the question. If UST is available, the mean score for UST is 3.81, with a standard deviation of 0.22.

4.2 Correlation Table

Correlations

IV3			DV
IV3	Pearson Correlation	1	0.786**
	Sig. (2-tailed)		<.001
	N	108	108
DV	Pearson Correlation	0.786**	1
	Sig. (2-tailed)	<.001	
	N	108	108
IV1			DV
IV1	Pearson Correlation	1	0.810**

	Sig. (2-tailed)		<.001
	N	108	108
DV	Pearson Correlation	0.810**	1
	Sig. (2-tailed)	<.001	
	N	108	108

4.2 Reliability Table

4.2.1 Service Quality

Cronbach's Alpha	N of Items
.909	3

Based on the Table 4, the Cronbach's Alpha coefficient for the three Likert scale questions reached .951 demonstrating excellent internal consistency. In other words, the 3 questions were conducted on self-efficacy. The findings affirm the robustness and reliability of the sample data, indicating quite excellent internal consistency and dependability

4.2.2 Urban Services Technology (UST)

Cronbach's Alpha	N of Items
.957	4

The analysis revealed that the four Likert scale questions achieved a remarkable Cronbach's Alpha coefficient of .957, indicating an excellent level of internal consistency. These questions were tailored to assess the behavioral intention to use urban services technology (UST). Overall, the results suggest that the sample exhibited an exceedingly high level of reliability and internal consistency.

5.0 CONCLUSION

The passage's conclusion posits that quantitative research serves as an essential instrument for scientific inquiry. The provided methodology enables a methodical approach to investigating events, covering the phases of formulating hypotheses, analysing data, and formulating conclusions. Research incorporates representative samples to ensure the extrapolation and application of findings to a broader population. The abstract also recognises the impact of advancing technology, whereby data analytics and machine learning algorithms are assuming progressively significant function. Nevertheless, the ethical implications pertaining to data protection and informed consent continue to be of utmost importance. Quantitative research findings possess substantial

practical significance since they contribute to the formulation of policy decisions, foster innovation, and advance scientific understanding in several fields. Quantitative research plays a fundamental role in scholarly investigation by tackling intricate problems and advocating for rigorous techniques supported by evidence.

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