

The Relationship Between Perceived Usefulness and Ict Adoption

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Received 17 November 2020, Accepted 20 December 2020, Available online 29 December 2020

ABSTRACT

The use of information and communication technology (ICT) by senior adults is becoming an increasingly essential and complex socioeconomic issue. Understanding the elements that affect older people's adoption of ICT and the consequences for their quality of life, social connections, and general well-being is becoming more and more important as the world's population ages. This study explores the many facets of ICT adoption among older adults, including the obstacles, the drivers, and the implications for their daily life. The study uses a quantitative method approach using surveys conducted by 158 people at Apartment Harmoni, Petaling Jaya, to get insights from a variety of older residents. The Unified Theory of Acceptance and Use of Technology, in particular, has made studies on ICT adoption extremely helpful in understanding it.

Keywords: ICT adoption, Perceived Usefulness, Acceptance, Use of Technology

How to Cite:

Zulkifli, A. S., & A.Gani, N. . (2020). The Relationship Between Perceived Usefulness and ICT Adoption. *Jurnal Evolusi* , 1(2). 80-88 <https://doi.org/10.61688/jev.v4i3.104>

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INTRODUCTION

Digital literacy and technology access are essential for individuals to effectively participate in modern society, particularly in an era of rapid advancements in information and communication technology (ICT). The digital gap, especially concerning older adults, raises concerns about equitable access to technology benefits. Understanding the level of ICT adoption among older adults is crucial to bridge this gap (Rasekaba et al., 2022; Yusif et al., 2016; Selwyn et al., 2003).

Research indicates that older adults' acceptance and use of technology are influenced by various psychosocial factors such as ICT usability, privacy concerns, self-perception of technology use, and technology literacy. Psychological traits like self-efficacy, motivation, fear, and interest also impact older adults' technology adoption. Overcoming barriers to ICT adoption among older adults is crucial, necessitating a focus on their needs, attitudes, and perceived limitations regarding electronic devices (Yusif et al., 2016; Selwyn et al., 2003).

Factors affecting seniors' adoption of ICT include social influence, perceived ease of use, technological anxiety, and providing them with the necessary skills and tools to navigate the digital world confidently. Collaborative efforts within local communities can create inclusive environments that empower seniors to leverage technology for connectivity and enhanced quality of life, ensuring that no one is left behind in the digital transition (Schreurs et al., 2017; Ahmad et al., 2020).

In conclusion, addressing the digital divide among older adults requires a comprehensive understanding of their ICT adoption patterns, barriers, and motivations. By considering the psychosocial aspects, usability concerns, and community collaboration, it is possible to enhance digital literacy and technology access for older populations, enabling them to engage actively in the digital age.

LITERATURE REVIEW

Perceived Usefulness

Senior citizens are a particularly vulnerable group in the digital age, facing challenges in accessing and utilizing Information and Communication Digital Technologies (ICDTs) (Gagnon et al., 2010). Studies have shown that the perceived usefulness of ICDTs significantly influences the adoption of these technologies among older individuals (Sabani et al., 2023). Factors such as user-friendliness, compatibility with individual needs, and perceived benefits play crucial roles in shaping seniors' attitudes towards technology adoption (Sabani et al., 2023). When seniors perceive technology as important and advantageous for their needs like healthcare management and social connectivity, they are more likely to incorporate it into their daily lives (Sabani et al., 2023).

The Technology Acceptance Model (TAM) is widely recognized in the scientific community as a model that explains the intention to adopt technological innovations (Geng, 2023). Various studies have highlighted the ease of use and perceived usefulness of ICDTs as key factors influencing the acceptance of these technologies by older adults, based on the TAM (Iyanda & Ojo, 2008). Perceived usefulness has been identified as a significant driver of ICT adoption among senior citizens (Iyanda & Ojo, 2008).

Moreover, research has shown that building a positive perception of the usefulness of technology is crucial in promoting its adoption among seniors (Hur, 2016). Studies have emphasized the importance of ICT in enhancing the lives of the elderly, particularly in areas such as social participation and combating loneliness (Srivastava & Panigrahi, 2019). Additionally, the intention to use ICT among Small and Medium Enterprises (SMEs) is influenced by factors such as perceived ease of use, perceived usefulness, and ethical culture (Hoque et al., 2016).

In conclusion, the adoption of ICDTs among senior citizens is influenced by various factors such as perceived usefulness, user-friendliness, and compatibility with individual needs. Understanding these factors is essential in promoting the adoption of technology among vulnerable populations like the elderly.

ICT Adoption Among Senior Citizens

Information and Communication Technologies (ICT) play a crucial role in the lives of senior citizens, offering them opportunities to acquire information, communicate, access social services, and enhance their quality of life. Research indicates that the adoption and use of ICT among older adults are influenced by factors such as perceived utility, ease of use, technology anxiety, facilitating conditions, and social impact (Choi & Lee, 2021; Hur, 2016; Srivastava & Panigrahi, 2019; Yoshimoto et al., 2022). However, barriers like lack of access to computers and the internet, inadequate skills, and outdated equipment hinder their ICT utilization (Choi & Lee, 2021; Hur, 2016). It is essential to provide affordable options with user-friendly interfaces to facilitate technology adoption among seniors (Choi & Lee, 2021; Hur, 2016).

Moreover, studies emphasize that older adults tend to use technology more effectively when their specific needs are addressed, highlighting the importance of tailoring ICT solutions to their requirements (Choi & Lee, 2021; Hur, 2016). Factors such as age, education level, socioeconomic status, and physiological conditions contribute to the complexity of studying ICT adoption among the elderly (Choi & Lee, 2021; Hur, 2016). Additionally, the acceptance of ICT is closely tied to seniors' attitudes and experiences with technology (Choi & Lee, 2021). While ICT can mitigate social isolation and loneliness among older adults, concerns exist regarding potential negative outcomes like depression, emphasizing the need for careful implementation and support (Cotten et al., 2013; Barroso et al., 2021; Pearlman-Avnion et al., 2019).

In conclusion, addressing the unique needs and challenges faced by senior citizens in adopting ICT is crucial for enhancing their quality of life and promoting social inclusion. By considering factors like usability, affordability, and tailored support, ICT interventions can effectively empower older adults to leverage technology for improved well-being and connectivity.

Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT), which has been the primary lens through which the studies by (Marikyan, 2023) have examined ICT adoption, have significantly advanced our understanding of this issue. Especially for older adults who struggle with the digital divide, ICT uptake and successful use are essential for engaging fully in today's quickly changing digital ecosystem. First put forth by (Marikyan, 2023) in the UTAUT model is a comprehensive framework that incorporates components from several different theories of technology adoption. The four main components of UTAUT are Social Influence (SI), Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC). Performance expectancy is the conviction of the user that using ICT can improve performance, whereas effort expectancy is the perceived ease of use of the system. The impact of significant individuals on an individual's decision to adopt a new system is known as social influence, while the technical architecture of an organization's support for system use is known as facilitating conditions. Studies confirm that in situations where ICT adoption is required or voluntary, Performance Expectancy is a very reliable indicator of use intention. The effect of Effort Expectancy decreases with continued usage of technology. Facilitating Conditions directly improve utilization, especially in the early phases of technology adoption, and Social Influence is especially pertinent in cases where adoption is mandated. Although UTAUT provides a useful theoretical framework for comprehending ICT adoption, closing the digital gap requires applying UTAUT to the situation of senior adults in local communities. It is imperative to acknowledge that the efficacy of UTAUT conceptions may differ depending on diverse demographics and contextual factors. Therefore, a comprehensive analysis of its influence on enhancing ICT adoption among older adults is warranted.

Research Framework

Theoretical framework, adapted from (S, 2013), to determine the relationship between Perceived Usefulness and ICT adoption among senior citizens.

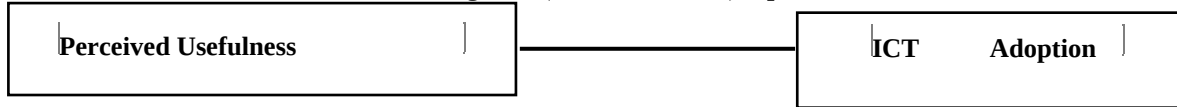


Figure 1: This conceptual framework has been adopted from (S, 2013)

METHODOLOGY

Research Design	The quantitative method was used in this study to investigate ICT Adoption Among Senior Citizens in Local Communities. Quantitative research involves acquiring broad insights from large amounts of data through the use of a logical and data-driven approach to measuring people's perspectives statistically and numerically.
Target Population	Residents at Apartment Harmoni, Petaling Jaya, Malaysia
Sample Size	A total of 158 respondents anticipated in the survey,
Data Collection	The questionnaire was administered online by Google Form and shared by the link only through the community's leader on Whatsapp as he will be the main distributor to receive a large number of samples.
Instrument/ Questionnaire	The instrument consists of (2) Sections: Part A: Demographic questions (9 Items); Part B: Perceived Usefulness (4 Items)
Data Analysis	Constructed around a logical explanatory model that was developed using empirical data and secondary data sources related to SPSS and data analysis. The SPSS software helps psychologists analyze psychological data accurately by providing concrete factual results for mathematical statistical analysis and correlation relationships. The communities of Apartment Harmoni in Petaling Jaya, Malaysia, which have previously employed SPSS for a variety of social science related research projects, are the main source of data.

Reliability Analysis

Reliability test including Cronbach's alpha is a coefficient tool to measure the internal concept consistency of Likert scale question, examining the reliability of all the statements in scaled questions (Sharma, 2016). The data result was presented in table 1 until table 6, which was the reliability of 4 and 3 Likert scale questions.

Reliability Statistics	
Cronbach's Alpha	N of Items
.806	4

Figure:
Perceived Usefulness

The Cronbach's Alpha coefficient of 4 Likert scale questions was .806, suggesting that the 4 items have relatively "good" internal consistency. In other words, the 4 questions were of Perceived Usefulness. According to the result, the samples had a good reliability and internal consistency.

FINDINGS AND DISCUSSION

The results of the regression analysis, the responses to the study's research question and hypothesis, and the demographic data of the respondents are all presented in this section.

Demographic DataTable 2: *The Study of Demographic Data*

Demographic	Categories	Frequency	Percentage (%)
Gender	Male	107	67.7
	Female	51	32.3
Age	Less than 20 years old	3	1.9
	20-30 years old	32	20.3
	30-40 years old	52	32.9
	40-50 years old	58	36.7
	Above 50 years old	13	8.2
Occupation	Government Non-profit sector	34	21.5
	Student	2	1.3
	Private	13	8.2
	Others	76	48.1
		33	20.9
Education	PHD degree	2	1.3
	Master degree	17	10.8
	Bachelor degree	54	34.2
	Diploma	34	21.5
	SPM	41	25.9
	Others	10	6.3
Race	Malay	156	98.7
	Chinese	0	0
	India	2	1.83
	Others	0	0
Use of ICT	Yes	149	94.3
	No	9	5.7
Use of ICT Devices	Smart phone	152	96.2

Use of social media	Internet	119	75.3
	Personal computer	84	53.2
	Tablet computer	53	33.5
	No account	1	0.6
	Whatsapp	148	93.7
	Facebook	115	72.8
	Instagram	107	67.7
	Twitter (X)	59	37.3
	LinkedIn	36	22.8
Purpose Use of Senior Citizen	Meeting new people	53	33.5
	Arranging hospital appointments	76	48.1
	Listening music	47	29.7
	Watching video, film, TV series	81	51.3
	Shopping	78	49.4
	Playing game	32	20.3
	Using e-government services	83	52.5
	Sending e-mail	79	50
	Using banking services	105	66.5
	Learning new information	83	52.5
	Using social media accounts	86	54.4
	Following news and latest developments	121	76.6
	Contacting with family and friends	127	80.4

Independent Variable – Perceived Usefulness

Table 3: Descriptive Statistics of Social Influence towards The Use of ICT

No	Measurement Item	1	2	3	4	5	Mean
							Standard deviation
1.	ICT would enable me to accomplish my daily life activities more quickly	4	1	19	73	61	4.2215
		2.5%	0.6%	12%	46.2%	38.6%	1.10945

2. Using ICT would enhance my effectiveness on daily life Using	3	3	26	83	46	4.0759
	1.9%	1.9%	16.5%	52.5%	29.1%	0.78638
3. Using ICT would make it easier to do my daily life activities	3	9	12	82	54	4.1646
	1.9%	5.7%	19%	51.9%	34.2%	0.78083
4. Using ICT I would find useful in my daily life	4	1	13	82	38	4.2089
	2.5%	0.6%	8.2%	50.6%	60%	0.82210

Shows the independent variable, which is the perceived usefulness towards the use of ICT among senior citizens, and the result of mean and standard deviation analysis. Item 1 had the highest mean, 4.2215, and the standard deviation was 1.10945. The respondent agreed that the ICT would enable them to accomplish their life activities more quickly. Item 2 has the lowest mean of 4.0759 and the lowest standard deviation of 0.78638.

CONCLUSION

The adoption of Information and Communication Technology (ICT) is vital for all, especially elderly adults. Perceived usefulness, a key aspect in the Unified Theory of Acceptance and Use of Technology (UTAUT), is crucial for seniors. It influences their views on how ICT can enhance their quality of life, including improved social involvement, communication, and access to resources. Seniors benefit from ICT tools like messaging apps and video chats, reducing feelings of isolation. The perceived utility of these technologies lies in fostering significant encounters and preserving social bonds. Additionally, ICT provides access to entertainment, education, and healthcare resources, empowering seniors and enhancing their independence. Overcoming obstacles like digital literacy and accessibility issues requires coordinated efforts in infrastructure development, education, and training. Funding programs supporting seniors' perception of ICT's usefulness improves personal well-being and fosters a more inclusive community.

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