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THE RELATIONSHIP BETWEEN PERCEIVED EASE OF USE AND ICT ADOPTION AMONG ELDERLY

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ABSTRACT

The increasing use of technological devices among senior citizens presents a critical societal concern as the elderly population grows globally. Understanding the factors driving their adoption of Information and Communication Technology (ICT) and its impact on their lives is essential. This study aims to explore various aspects of ICT adoption among older adults, including the challenges they encounter and the motivations behind their usage. Employing a qualitative approach, questionnaires are administered to 158 individuals at Apartment Harmoni, Petaling Jaya, to gather insights into their experiences and perspectives. By delving into their motivations, challenges, and the influence of ICT on their daily lives, the study seeks a comprehensive understanding of the phenomenon. Previous research, particularly utilizing frameworks like the Unified Theory of Acceptance and Use of Technology (UTAUT), has contributed significantly to understanding ICT adoption among seniors. Building upon this knowledge, this research aims to further illuminate the complexities of ICT usage among older adults. Ultimately, this study aims to inform strategies and interventions that promote digital inclusivity and enhance the quality of life for senior citizens in the digital era.

ARTICLE INFO
Keywords:

ICT adoption, Senior Citizens Perceived Ease of Use, Acceptance and Use of Technology,

1.0 INTRODUCTION

The adoption of Information and Communication Technologies (ICT) among senior citizens is a critical topic with far-reaching implications for societal inclusion and equity. As technology becomes increasingly integrated into various aspects of daily life, addressing barriers to ICT adoption among older adults is essential to prevent them from being left behind (Sabani et al., 2023). Factors such as perceived ease of use, access to resources, and societal attitudes towards aging and technology play a significant role in influencing seniors' willingness to embrace technology (Keränen et al., 2017). Research has highlighted both the challenges, such as technological phobia and privacy concerns, and the benefits, including enhanced quality of life and social connectedness, associated with ICT adoption among seniors (Keränen et al., 2017).

Understanding the nuances of ICT adoption among senior citizens is crucial for policymakers and community leaders to develop tailored interventions that cater to the unique needs and preferences of older adults (Tajudeen et al., 2022). By empowering seniors to navigate the digital landscape, we can create more inclusive communities and ensure that everyone can participate fully in the digital age (Su et al., 2021). Additionally, fostering digital literacy among seniors not only enhances their connectivity but also promotes independence and active participation in society (Alam & Shaba, 2022).

Studies have shown that ICT literacy, defined as citizens' belief in their ability to access public services through e-Government adoption, is a key factor influencing the adoption of technology among older adults (Alam & Shaba, 2022). By investigating seniors' ICT adoption behaviors, preferences, and competency levels, researchers can identify strategies to bridge the digital divide and promote digital inclusion for all members of society (Dwivedi et al., 2016). The implications of such studies extend beyond academia, informing policy decisions and community initiatives aimed at enhancing digital inclusion and social equity for senior citizens (Dwivedi et al., 2016).

In conclusion, the topic of ICT adoption among senior citizens is of paramount importance in today's digital age. By addressing barriers to technology adoption, understanding seniors' needs, and promoting digital literacy, we can create a more inclusive society where older adults can fully participate and benefit from the opportunities offered by technology.

2.0 LITERATURE REVIEW

2.1 Perceived Ease of Use

Perceived utility plays a crucial role in the acceptance of Information and Communication Technologies (ICTs) among older individuals. Studies by Tirado-Morueta et al. (2021) and Canedo-Garca et al. (2022) highlight the significance of perceived utility in influencing older persons' attitudes and intentions towards using ICTs. The outbreak of Covid-19 further emphasized the utility of ICTs for older adults in combating isolation, enhancing social interactions, and facilitating daily activities, as noted by Jiménez et al. (2021). However, the perception of ICT utility among older individuals is influenced by various factors, with studies by Alonso et al. (2021), Basakha et al. (2019), Carenzio et al. (2021), and Nimrod (2017) indicating a negative perception when access to technology is limited.

Research on the acceptance of technological advancements among older individuals reveals a complex interplay of factors impacting perceived usefulness. While some studies, such as Hur (2016), demonstrate a positive outlook towards technology among older adults, others like Alonso et al. (2021), Basakha et al. (2019), Carenzio et al. (2021), and Nimrod (2017) suggest negative perceptions when technology access is restricted. Addressing barriers to ICT use among older adults is crucial to enhancing their acceptance and utilization of technology, as highlighted by the diverse findings in the literature. Understanding the role of perceived utility and ease of use in shaping older individuals' attitudes towards technology adoption is essential for designing interventions that promote positive perceptions and facilitate the integration of ICTs into the lives of older populations.

2.2 ICT Adoption Among Senior Citizens

Information and communication technologies (ICT) are becoming increasingly relevant to all age groups, including seniors, due to the benefits they provide, like support services, communication, and information access. ICT has much to offer older adults in many aspects of their lives, potentially reducing their need on carers and enhancing their way of living. Seniors, on the other hand, usually lack crucial technical skills due to restricted experience. Their financial condition, degree of education, and access to resources all influence how people use ICT. (2022, Sammy) Access changes when when compared with younger generations due to a lack of a computer, a link to the internet, and the necessary skills. To solve these challenges, economical alternatives and interfaces that are intuitive are necessary. In contrast to younger individuals who utilize computers more casually seniors typically use it only when they have specific demands (Chen, The Effect of Information and Communication Technology Initiatives on Overcoming Social Seclusion in the Elderly, 2016). The ease with which older individuals adopt ICT is affected by their educational backgrounds, financial status, and health issues. Among the elements impacting their adoption of ICT are perceived utility, ease of use, nervousness about technology, favorable conditions, and social influence. Low self-efficacy, computer proficiency, accessibility issues, privacy concerns, and expensive expenses all have an impact on senior individuals' use and adoption of technology (Danny, 2019). A thorough analysis of the elderly's use and adoption of ICT is also more complex than that of the younger generation due to a broader range of education level, geographical situation, and medical histories (Hanson, 2019). Perceived utility, perceived ease of use, anxiety surrounding technology, circumstances that facilitate, and social impact are all elements that influence geriatric acceptance of ICT, according to (Peek et al. 2018). Another study claims that expensive charges, a lack of fundamental skills or understanding of computers, difficulty accessing ICT, privacy and security issues, low self-efficacy, and a lack of user-friendly user interfaces all have an impact on the usage and adoption of technology among senior persons.

2.3 Theory of Acceptance and Use of Technology

Studies by Venkatesh (2016), Wang (2023), and Thong (2016) have significantly contributed to the understanding of ICT adoption, especially when viewed through the lens of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Marikyan, 2023). The UTAUT paradigm, introduced by Venkatesh et al. (2003), integrates the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA) to create a comprehensive theoretical framework. Within the UTAUT framework, key concepts such as Social Influence (SI), Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC) play crucial roles in assessing individuals' intentions to use ICT (Venkatesh et al., 2003).

Performance Expectancy (PE) is a significant predictor of usage intention, influenced by factors like relative advantage, work fit, perceived value, intrinsic motivation, and outcome expectancies (Venkatesh et al., 2003). Additionally, Wang (2023) and Thong (2016) distinguish between voluntary and mandatory ICT adoption settings. Effort Expectancy (EE) refers to the perceived ease of using a system, while Social Influence (SI) reflects how strongly others influence an individual's decision to use a new system. Facilitating Conditions (FC) represent the belief that organizational policies and technical infrastructure support system use, directly impacting usage intention (Venkatesh et al., 2003).

Understanding these factors is crucial, especially concerning senior adults facing obstacles in ICT adoption due to the information divide (Wu, 2015). By comprehensively examining the elements within the UTAUT framework, researchers can gain insights into the complexities of ICT adoption and tailor interventions to enhance technology acceptance among different user groups.

3.0 RESEARCH FRAMEWORK

To determine the relationship between ICT adoption among senior citizens and Perceived ease of use at Apartment Harmoni, Petaling Jaya, Selangor, Malaysia, is depicted in Figure 1.

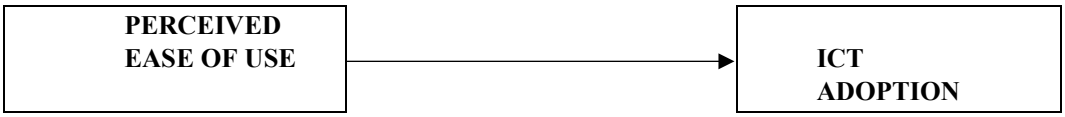

Figure 1: This conceptual framework has been adopted from Sarah Vinz et al. (2021)

4.0 METHODOLOGY

Table 4.1: Research Method

Research Design	In this study, the quantitative method was utilized to evaluate ICT Adoption Among Senior Citizens in Local Communities. Quantitative research entails gaining broad insights from massive volumes of data by employing an ordered and datadriven method to statistically and quantitatively measuring people's opinions.
Target Population	Residents at Apartment Harmoni, Petaling Jaya, Malaysia
Sample Size	A total of 158 respondents in the survey
Data Collection	The questionnaire was handled online using Google Forms and the link was only shared with the community's leader on Whatsapp because he will be the primary source of a significant number of samples.
Instrument/Questionnaire	The instrument consists of (2) Sections: Part A: Demographic questions (9 Items); Part C: Perceived Ease of Use (3 Items)
Data Analysis	Based on a logical analytical model created with experimental data and additional data providers pertaining to SPSS and data analysis. The SPSS tool aids psychologist specialists in the accurate analysis of psychological data through the implementation of empirical outcomes in mathematical- statistical evaluation and correlation connections. The primary data supply focuses on the Apartment Harmoni communities in Petaling Jaya, Malaysia, which have previously employed SPSS for numerous social- science associated research projects.

4.1 Reliability Analysis

The reliability test, which includes Cronbach's alpha, is a tool for measuring the internal conception consistency of Likert scale questions through evaluation of the reliability of all assertions in scaled questions (Stevan, 2017). The data was reported in tables 1 through 6, which represented the dependability of 4 and 3 Likert scale questions**.**

Reliability Statistics

Cronbach's Alpha	N of Items
.909	3

Figure: Perceived Ease of Use

The Cronbach's Alpha coefficient of 3 Likert scale questions was .909, suggesting that the 3 items have relatively "Excellent" internal consistency. In other words, the 3 questions were of Perceived Ease of Use. According to the result, the samples had an excellent reliability and internal consistency.

5.0 FINDINGS AND DISCUSSION

5.1 Demographic Data

Table 1: 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	34	21.5
	Non-profit sector	2	1.3
	Student	13	8.2
	Private	76	48.1
	Others	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
	Internet	119	75.3
	Personal computer	84	53.2
	Tablet computer	53	33.5
Use of social media	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

Table 2: Descriptive Statistics of Perceived Ease of Use towards The Use of ICT

Independent Variable – Perceived Ease of Use

No	Measurement Item	1	2	3	4	5	Mean Standard Deviation
1	Learning to use ICT would be easy for me	2	3	36	75	42	3.9620
		1.3%	1.9%	22.8%	47.5%	26.6%	0.82852
2	I would find ICT easy to use, clear and easy to understand how to use the e-health	3	5	40	73	37	3.8608
		1.9%	3.2%	25.3%	46.2%	23.4%	0.87767
3	I would find it easy to get ICT to do what I want it to do	3	5	32	73	43	3.9494
		1.9%	3.2%	21.5%	46.2%	27.2%	0.87278

According to the study results, respondents had a good attitude towards their ICT skills. A sizable 47.5% say that studying ICT is simple, while 46.2% believe that ICT in the framework of e-health is clear and intelligible. Furthermore, 46.2% believe that using ICT to achieve desired goals is simple. The mean ratings across items range from 3.8608 to 3.9620, reflecting an overall positive perception. Although there is some variation in replies, as evidenced by the standard deviations that vary between 0.82852 to 0.87767, most of the respondents are optimistic, implying a strong foundation for further investigation and potential strategy refinement.

5.2 Hypothesis Analysis

Hypothesis analysis was used to determine the relationship between perceived ease of use and ICT adoption among senior citizens as follows:

Table 4: Relationship between Perceived Ease of Use and Behavioural Intention towards the use of IC

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		Perceived Ease of Use	**ICT adoption among senior citizen**
Perceived Ease of Use	Pearson Correlation	1	.494**
	Sig. (2-tailed)		<.001
	N	158	158
ICT adoption among senior citizen	Pearson Correlation	.494**	1
	Sig. (2-tailed)	<.001	
	N	158	158

****. Correlation is significant at the 0.01 level (2-tailed).**

The result shows that there was a low positive relationship between Perceived Ease of Use and ICT adoption among senior citizens. The perceived ease of use of ICT among senior adults is an essential component in their acceptance and use of information. Perceived utility, perceived ease of use, reported enjoyment, intention of use, actual use, and The Technology Adoption Model questionnaire are drivers of technology acceptance amongolder persons, according to a study on computer acceptance and quality of life among older adults using a TUI (tangible user interface) application (HelenaValloHult,2009). However, older individuals struggle to understand and apply ICT, and they may not see the necessity for it in their daily life, resulting in poor acceptability and application. The lack of basic understanding in ICT is a significant obstacle to older people's

use and perception of ICT. Several researches have been performed to increase older people's acceptance and use of ICT. For example, creating new technology with older people's needs in mind can assist older people overcome challenges to embracing and using health data technology (Alisa Frik,2012). Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which is built on Technology Acceptance Model (TAM) root constructs, is frequently used to explain the elements that influence older people's intention to adopt new technologies (Davids,2022). Finally, perceived ease of use is an important component in senior adults' acceptance and use of ICT. Understanding the elements that impact older people's desire to utilize new technologies and designing new technology with their requirements in mind might assist increase their acceptance and use of ICT.

6.0 CONCLUSION

Researchers have researched the use of information and communication technology (ICT) among older adults in local communities, as well as their perceived ease of use. According to the study, older persons are motivated to accept and learn to use new technology, but they experience various challenges, including a lack of clarity in explanations and support, anxiety and privacy issues, and a lack of functional fluency in ICT (Geraedts et al., 2018). One of the most important outcomes of this study is the critical significance of perceived ease of use in determining ICT adoption among seniors. According to the poll results, elders are more inclined to adopt technology when it is simple to use and comprehend. As a result, legislators, technology developers, and community organizers must focus on creating user-friendly interfaces as well as providing enough training and assistance to boost seniors' confidence in utilizing ICT tools. Furthermore, by organizing workshops, training sessions, and awareness campaigns geared specifically to the needs and preferences of the senior population, local communities can play a critical role in aiding this process. Communities may overcome the digital divide and empower senior adults to exploit the benefits of technology by addressing perceived ease of use, enhancing their overall quality of life and social connectedness. In conclusion, successful ICT integration among elderly adults demands an integrative strategy that considers the distinctive issues that this demographic group faces. Society can build an inclusive digital environment in which seniors feel confident and capable of adopting technology to its full potential by focusing on the importance of perceived ease of use and actively integrating local communities in the process. As technology advances, it is critical to guarantee that older persons do not fall behind. We can create a digitally literate older population by fostering their active involvement in the digital age and improving their general well-being with the correct methods in place.

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