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THE FACTORS INFLUENCING ICT ADOPTION IN APARTMENT HARMONI, PETALING JAYA, MALAYSIA

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ABSTRACT

Senior citizens' use of information and communication technology (ICT) is developing into a significant and intricate social issue. Understanding the elements that affect older people's adoption of ICT and the consequences for their overall well-being, social connectedness, and quality of life 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 lives. It looks into the mental, physical, and financial aspects that affect how willing and able older adults are to use ICT services and tools. The research uses a quantitative approach that includes surveys to gather insights from a variety of senior citizens at Apartment Harmoni, Petaling Jaya with a total of 158 respondents. This study use Unified Theory ofAcceptance and Use of Technology.

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Keywords:

ICT Adoption,
Facilitating Condition,
Technology Anxiety,
Acceptance and Use of Technology

1.0 INTRODUCTION

The relationship between ICT adoption among senior citizens and its impact on their lives is a crucial area of study with significant societal implications. While it is commonly believed that ICT adoption can bring about benefits such as enhanced social connectivity, cognitive training, safety, and emotional well-being for seniors (Chen & Schulz, 2016), there are competing perspectives that suggest challenges in the adoption of ICT among older adults. Factors such as financial limitations, infrastructure challenges, skills shortages, and ICT knowledge gaps have been identified as barriers that can hinder the adoption of ICT by seniors (Chen & Schulz, 2016).

Research by Chen & Schulz (2016) highlights that while ICT interventions have the potential to reduce social isolation among the elderly, the effectiveness of these interventions in practice may vary (Chen & Schulz, 2016). Additionally, Cotten et al. (2013) found that the impact of Internet use on social relationships, including among older adults, may not always lead to significant improvements and could even initially result in a decline in social network size and increased loneliness (Cotten et al., 2013).

Moreover, Selwyn et al. (2003) emphasize the importance of involving older adults in the process of integrating ICT into their lives rather than trying to change them, recognizing the growing number of older individuals engaging with new technologies (Selwyn et al., 2003). This suggests that while ICT adoption can offer numerous benefits to seniors, there are complexities and challenges that need to be addressed to ensure successful implementation and utilization.

In conclusion, while the potential benefits of ICT adoption among senior citizens are well-documented, it is essential to consider the various challenges and nuances that may impact the actual outcomes of such adoption. Understanding the interplay between facilitating factors and barriers is crucial in developing tailored strategies to effectively promote ICT uptake among older adults and maximize its positive impact on their well-being and quality of life.

2.0 PROBLEM STATEMENT

The digital divide among senior citizens within local communities is a pressing issue in Malaysia that requires immediate attention. Despite an overall internet user penetration rate of 87.7% in 2020, as reported by the Department of Statistics Malaysia, research indicates varying levels of digital penetration across different age groups. While internet usage is widespread among younger Malaysians, only 16.4% of individuals aged 50 and above actively engage with it, according to a 2019 survey conducted by the Malaysian Communications and Multimedia Commission (MCMC). This data underscores a significant gap in Information and Communication Technology (ICT) adoption between Malaysia's younger demographic and its senior citizens**.**

3.0 LITERATURE REVIEW

3.1 Facilitating Condition

Digital technologies have been identified as significant contributors to enhancing the cognitive, social, and emotional well-being of older adults (Chen & Schulz, 2016). However, challenges such as the lack of age-appropriate technological apps, concerns about cost and accessibility, and age-related cognitive declines need to be addressed when developing technology for this demographic (Chen & Schulz, 2016). Understanding the unique behaviors, needs, interactions with technology, and motivational factors of older adults is crucial for the development of smart homes tailored to their health (Chen & Schulz, 2016). Despite the potential benefits of smart homes, older users may be hesitant to adopt cutting-edge solutions, preferring traditional sources for expert advice due to perceived effort outweighing benefits (Chen & Schulz, 2016). Facilitating conditions, which refer to how individuals believe that using an information system would support their existing technical infrastructure, are essential considerations in the adoption of technology by older adults (Chen & Schulz, 2016).

Research supports that embracing information and communication technologies (ICT) can help elderly individuals reduce their reliance on caregivers and improve their overall quality of life (Cotten et al., 2013). However, elderly individuals often face challenges in adopting modern technology due to limited exposure and interaction with it, resulting in a lack of critical skills (Cotten et al., 2013). Common barriers to ICT use among the elderly include the absence of a computer, lack of internet access, and insufficient skills (Cotten et al., 2013). To address this issue, user-friendly interface designs, simplified procedures, and cost-effective alternatives tailored to the elderly are necessary (Cotten et al., 2013). Studies have shown that ICT interventions can effectively reduce social isolation among the elderly by facilitating easy and affordable communication

with others, regardless of physical limitations (Cotten et al., 2013).

In conclusion, leveraging ICT can significantly benefit the elderly population by enhancing their social connections, access to essential services, and overall quality of life. It is crucial to address barriers to ICT adoption and design age-appropriate technologies to ensure that elderly individuals can fully benefit from the opportunities offered by information and communication technologies (Cotten et al., 2013).

3.1 Theory of Acceptance and Use of Technology

Research by Wang (2023) and Thong (2016) has significantly advanced our comprehension of ICT adoption, particularly when viewed through the lens of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2016). The UTAUT model, initially proposed by (2003), amalgamates the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM), creating a comprehensive framework. Within UTAUT, core concepts such as Social Influence (SI), Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC) play pivotal roles in understanding individuals' intentions to use ICT (Venkatesh et al., 2016). Performance Expectancy, reflecting a user's belief in how ICT usage will enhance their performance, is a crucial element (Venkatesh et al., 2016). Studies by Wang (2023) and Thong (2016) have highlighted the significance of Performance Expectancy as a predictor of usage intention in various ICT adoption scenarios.

Effort Expectancy in UTAUT, as defined by (2003), gauges the perceived ease of system use. Social Influence is described as the degree to which an individual perceives others' expectations regarding system use (Venkatesh et al., 2016). Moreover, Facilitating Conditions, which denote the presence of organizational and technical support for system use, directly influence usage intention (Venkatesh et al., 2016).

Understanding the variables affecting ICT adoption among senior citizens is crucial due to the digital divide. By comprehensively examining these factors within the UTAUT framework, researchers have been able to shed light on the complexities of technology adoption across different demographics, providing valuable insights for policymakers and practitioners.

4.0 RESEARCH FRAMEWORK

To determine the relationship between facilitating condition and behavioural intention at Apartment Harmoni, Petaling Jaya, Selangor, Malaysia, is depicted in Figure 1.

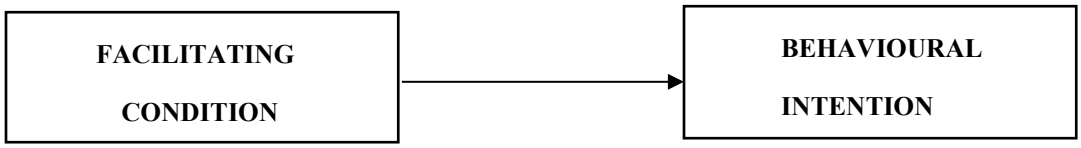

Figure 1: This conceptual framework has been adopted from Hayrol Azril et al. (2010)

5.0 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 approachto 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 onlythrough 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 F: Facilitating Condition (3 Items)
Data Analysis	Based on a logical explanatory model that was created with the aid of secondary data sources and empirical data pertaining to data analysis and SPSS. The SPSS software helps psychologists analyse psychological data accurately by providing concrete empirical results for mathematical-statistical analysis and correlation relationships. Thecommunities at Apartment Harmoni in Petaling Jaya, Malaysia, which have previouslyused SPSS for a variety of social science-related research projects, are the main source of data.

5.0 FINDINGS AND DISCUSSION

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

Table 2 : ***The Study Of Demographic Data***

Demographic	Categories	Frequency	Percentage (%)
Gender	Male	107	67.7
	Female	51	32.3
Age	Less than 20 years old20-	3	1.9
	30 years old	32	20.3
	30-40 years old	52	32.9
	40-50 years old Above	58	36.7
	50 years old	13	8.2

Occupation	Government Non-	34	21.5
	profit sectorStudent	2	1.3
	Private	13	8.2
	Others	76	48.1
		33	20.9
Education	PHD degree Master	2	1.3
	degree Bachelor	17	10.8
	degreeDiploma	54	34.2
	SPM	34	21.5
	Others	41	25.9
		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

Independent Variable – Social Influence

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

No	Measurement Item	1	2	3	4	5	Mean Standard deviation
1.	I have the resources necessary to use ICT		3	22	96	37	4.2975
		0	1.9%	13.9%	60.8%	23.4%	3.24873
2.	I have the necessary support to use ICT		1	28	90	39	4.0633
			0.6%	17.7%	57%	24.7%	0.67422
		0					
3.	A specific person (or group) is available for me to give assistance with difficulties of ICTuse		9	35	77	37	3.9114
		0	5.7%	22.2%	48.7%	23.4%	0.81686

Shows the independent variable, which is the facilitating condition towards the use of ICT among senior citizens,and the result of mean and standard deviation analysis. Item 1 had the highest mean, 4.2975, and the standard deviation was 3.24873. The respondent agreed that the people whose opinions that they value think they shouldse ICT. Item 3 has the lowest mean of 3.9114 and the lowest standard deviation of 0.81686.

Hypothesis Analysis

Hypothesis analysis was used to determine the relationship between facilitating condition and ICT adoptionamong senior citizens as follows:

Table 4: Relationship between Facilitating Condition and Behavioural Intention towards the use of ICT

		Facilitating Condition	Behavioural Intention
Facilitating Condition	Pearson Correlation	1	.329**
	Sig. (2-tailed)		<.001
	N	158	158
Behavioural Intention	Pearson Correlation	.329**	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 negligible correlation and there is no substantial linear relationship between facilitating conditions and ICT adoption among senior citizens. Having access to ICT devices, user-friendly interfaces, technical support, and the presence of infrastructure that facilitates technology usage are examples ofthese conditions. The study's findings highlight the importance of these enabling conditions in influencing seniorcitizens' adoption of ICT. It also indicates that senior citizens are more inclined to embrace ICT when they have more effective access to the necessary resources and support (Eleftheria Vaportzis, 2017) In order to interact withtechnology, senior citizens must have the ability to use smartphones, tablets, computers, and other ICT devices. The availability of these devices in their environment is crucial to their adoption. Furthermore, the availability ofdependable internet connectivity and related infrastructure is significant. For a seamless ICT experience, seniorsrequire high-speed internet and stable networks (Liu & Liu, 2022) Recognising and addressing enabling conditions is critical for promoting ICT adoption and assisting senior citizens in getting the benefits of digital inclusion in a world that is becoming increasingly digital. Furthermore, if a negligible correlation is found, moreresearch would be required to investigate the complex interplay of factors that influence ICT adoption among thisdemographic.

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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 (Goforth, 2015). The dataresult 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
.230	3

The Cronbach's Alpha coefficient of 3 Likert scale questions was .230, suggesting that the 3 items have relatively "Unacceptable" internal consistency (more information in chapter 3.5). In other words, the 3 questions were of Facilitating Condition. According to the result, the samples had an unacceptable reliability. A Cronbach's alpha value of 0.3 is considered extremely low and indicates poor internal consistency. If a population of senior citizensfrom local communities is extremely varied according to their ICT adoption experiences, backgrounds, or other characteristics, internal consistency could be compromised because respondents' responses may differ significantly.

7.0 CONCLUSION

To conclude this issue, information and communication technology (ICT) offers many benefits to elderly and senior citizens in terms of social interaction, learning, health monitoring, and connection. As such, ICT plays abig part in their lives. This is especially important in Malaysia because the number of senior citizens is rising there. In addition to reducing social isolation and improving mental health, ICT enables ongoing communicationwith loved ones. Moreover, it encourages cognitive training and brain- stimulating exercises, which help older adult's memory and problem-solving abilities increase significantly. Additionally, ICT includes assistive technologies that help seniors maintain their independence and safety, such as voice assistants, wearable technology, and smart home appliances. By keeping an eye on everyday activitiesand providing support when needed, these technologies help elderly people live better overall. Furthermore, elderly citizens can manage stress, anxiety, and depression with the use of helpful tools and advice offered by well-being applications and online mental health platforms.

Nonetheless, there are obstacles to older people using ICT. Their ability and preference to utilise ICT can be influenced by a variety of factors, including education, socioeconomic level, personal views, and limited technological contact. Costs that are unaffordable, a lack of computer proficiency, and worries about security and privacy may discourage older users. It is necessary to create cost-effective and user- friendly interfaces that are suited to the interests and preferences of senior citizens in order to encourage their adoption of ICT. Comprehending these obstacles and opportunities is essential for creating ICT solutions that address the particular needs of the elderly population. Making sure that senior citizens are not left behind is crucial as the globe moves towards a more digitally connected society. We may use technology to improve elderly persons' quality of life and overall well-being by recognising the unique challenges they encounter and designing ICT solutions to meet their requirements. This will help to create a society that is more inclusive and harmonious.

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