Factors of ICT Adoption and Cultural Preservation among the Kadazandusun Community in Sabah

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Abstract
The development of Information and Communication Technology has also brought about changes to the cultural context of the community. This paper investigates the factors that influence the ICT adoption for cultural preservation among the Kadazandusun community in Sabah. This study adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) which identifies four key factors, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. In this study, a quantitative approach was used. This study included 350 Kadazandusun community members as respondents. To determine the mean of the four factors measured, a descriptive analysis was performed with a total mean score of 5.00. Performance expectancy had the highest mean score (4.06), followed by effort expectancy (4.03). The other two factors were slightly lower: social influence = 3.51 and facilitating conditions = 3.42. The findings revealed that ICT has indeed improved the Kadazandusun community's performance and effort in preserving their culture. The Kadazandusun community, on the other hand, can easily adopt ICT without much influence from the social circle. In terms of facilitating conditions, its score was the lowest indicating that the availability of tools, skills, financial resources, and facilities is critical to ensuring long-term ICT adoption.
Keywords: Cultural Preservation, ICT Adoption, UTAUT, Kadazandusun Community, Sabah

Introduction
Sabah is a state on the island of Borneo that is rich in natural resources such as timber, oil, gas, and palm oil. It is, however, Malaysia's poorest state (World Bank, 2020). Sabah, Malaysia's poorest state, has also been deprived of digital development. This is evident in the

various budget allocations made by the federal and state governments to improve digital access in Sabah. The budget for 2021 also includes RM9.4 billion for the development of a national digital strategy across industries and people (Bernama, 2020). It was also reported that the former Deputy Prime Minister had set aside a whopping RM21 billion for the National Fiberisation and Connectivity Plan (2019-2023) (Daily Express, 2020). Despite statistics indicating that 91.7 percent of the household population has Internet access, these clearly demonstrated that both the state and federal governments are serious about closing the digital divide in Sabah (DOSM, 2020).

According to Hootsuite and We Are Social's latest Digital 2019 report, Malaysia was ranked fifth in the world and first in Southeast Asia for mobile social media penetration (The Sun Daily, 2019). According to the report, internet penetration in Malaysia is at 80%, with users spending an average of eight hours and five minutes online per day. The findings are consistent with those of a survey of Internet users conducted by MCMC (2017). As of 2016, there were approximately 21.9 million social media users.

However, how effective has the implementation of ICT development in Sabah been? To what extent has the implementation of development policies and programs contributed to the development of the digital community among Sabah's indigenous communities? Are the government-implemented ICT development programs accepted by the Kadazandusun community of Sabah? All of these are critical issues that must be addressed as part of the government's efforts to build digital communities in Malaysia.

Despite a lack of digital access, the adoption of ICT has had an impact on the lives of people in Sabah. While the adoption of ICT has broadened its benefits for people to perform daily activities such as communication and leverage across performing economic activities, several studies have revealed that it poses a significant threat to the survival of traditional knowledge of craftsmanship, local natural resources, and creative industries (UNESCO Institute for Statistics, 2016; Hosagrahar et al., 2016; James, 2014).

However, the fact remains that as ICT advances, the community will benefit more in terms of learning about different cultures while also promoting and preserving their own. As we move toward a network society, we must always ensure that cultural legacies, particularly those of indigenous peoples, are preserved and passed on to the next generation. According to King (1993), so-called traditional culture is not necessarily an impediment to change, nor will it simply succumb to modernity. These changes could be implemented in a way that facilitates the modernization process while also accommodating community values and practices.

Several studies on technology acceptance for various uses among individuals and organizations have been conducted, but only a few studies have highlighted the use of ICT for cultural preservation. In a study of six ethnic minorities in Peninsular Malaysia, Sarjit, Talib, Choo, and Puvaneswaran (2016) discovered that ethnic minorities view ICT as an important tool in sustaining their cultural identity. The study conducted by Sarjit et al (2016) has a limitation in that it only represents ethnic minorities in Peninsular Malaysia and cannot represent the Sabah population due to its heterogeneous and culturally diverse population. To address the gap, this study investigates the factor of ICT adoption and how it affects the cultural preservation of the Kadazandusun community in Sabah.

Literature Review

Information and Communication Technology (ICT) Development in Sabah

In general, ICT is defined as any technology that consists of hardware, software, the Internet, and telecommunications and aids in communication by capturing, processing, and transmitting information electronically (Apulu & Lathem, 2010; Ruiz-Mercader et al., 2006). In other words, information and communication technology (ICT) can be defined as electronic products and services that provide a platform for processing, storing, and transmitting data. The World Bank defines ICT as "hardware, software, networks, and media that are useful not only for collecting, processing, and transmitting data, but also for presenting data and information in the form of text, voice, and image."

The increasing global advancement and competition in ICT has encouraged Malaysia to prioritize the development of its ICT sector. The Malaysian government has devised a number of implementation plans, as well as a sizable budget allocation, to support digital development, particularly in rural areas.

According to the New Sabah Times (2016), the Malaysian government's efforts to uplift marginalized groups can be seen in the various successful implementations of the 1Malaysia Wireless Village (KTWIM) and 1Malaysia Internet Centre. This initiative aimed to provide free internet access to communities in rural areas. The E-Desa initiative under the Ministry of Resource Development and Information Technology has provided more than 31 E-Desa centers in the state, as well as training and consultation services to promote ICT in order to boost socioeconomic development.

On the contrary, recent local and international news headlines report on a Sabahan, Veveonah Mosibin, who lives in a rural village and had to go the extra mile by camping on top of a tree in order to sit for her online university exams (The Star Online, 2020). Thang et al (2016) discovered that students studying at a new and non-research university, such as Universiti Malaysia Sabah, prefer more didactic tools in learning due to a lack of exposure to technology, as the majority of the students are from rural areas.

According to a study conducted by Hamdan (2017), Sabahans from various backgrounds living in various localities expected broadband penetration to be expanded quickly and the quality of transmission and service to be improved. It was also noted that, despite their financial constraints, the lowest income group of people were willing to subscribe to broadband for their own benefits.

The Kadazandusun Community

The Kadazandusun are Sabah's largest indigenous ethnic group. The community is made up of 30 or more subgroups and has a population of between 20 and 33 percent of Sabah's total population of approximately 1.6 million people (West, 2010). The term Kadazandusun refers to the ethnic groups Kadazan and Dusun. The Dusun are more numerous in Kota Belud and its surrounding areas. The Kadazan people primarily live along the coast between Kota Kinabalu and Papar (Reid, 1997). This was widely acknowledged prior to the formal recognition of the Kadazan and Dusun peoples as one group.

The ethnic identity of the 'Kadazandusun' had caused confusion among political leaders and the community. Donald Stephens first introduced the identity of Kadazandusun as 'Kadazan' before it was authority-defined by political elites (Puyok & Bagang, 2011). The indigenous

community was open to being labeled as 'Kadazan' rather than 'Dusun.' The Kadazan saw 'Dusun' as a socioeconomic backwardness and then rejected the authority's definition. Previously, the British coined the term "Dusun" to describe the "majority agricultural population of Borneo's interior." Reid (1997) discovered that people accept the word 'Kadazan' as their original, everyday-defined name rather than 'Dusun,' which was an authority-defined by the British colonizers. Today, the KadazanDusun people live along Sabah's western coast and a little further inland (Lasimbang, 2004). The Kadazandusun, Sabah's largest ethnic group, are still grappling with development issues, political control, and political marginalization (Puyok et al., 2011).

Development and Culture

Since the late 1990s, the emergence of culture at the center of mainstream development debates has been a key feature of development (Worsley, 1999). The cultural values that underpin the global context for development thinking and interventions have grown in importance and popularity (Escobar, 1995; Schech & Haggis, 2000).

Culture and development are inextricably linked; one is frequently a driver and enabler of the other. Schuler's (1996) core values of community development examined the community as a whole system that relied on one another to function properly. Any community development that focuses solely on one aspect, such as the people's economy, without taking into account culture, will fail.

The development process is always associated not only with the modernization of a state, but also with and influences the cultures of the society. A group's culture is represented by its beliefs, practices, and artifacts. With the advancement of technology, culture is no longer as traditional as it once was; it has undergone radical changes. Its transmission from one generation to the next has also changed and adapted as a result of technological advancements.

The Kadazandusun community has undergone cultural changes as a result of a variety of factors, including technology. Totu, Igau, and Kinabalu (2013) discovered that TV has some influence on the Kadazandusun people's lifestyles in their study of the role of propagating materialistic values among the Kadazandusuns. According to a study It is proposed that users' acceptance of using mobile apps to learn Kadazandusun language is influenced by their perceived usefulness of mobile apps and perceived ease of mobile app use, which influence their attitude toward mobile app usage and behavioral intention to use (Pindeh et al., 2016).
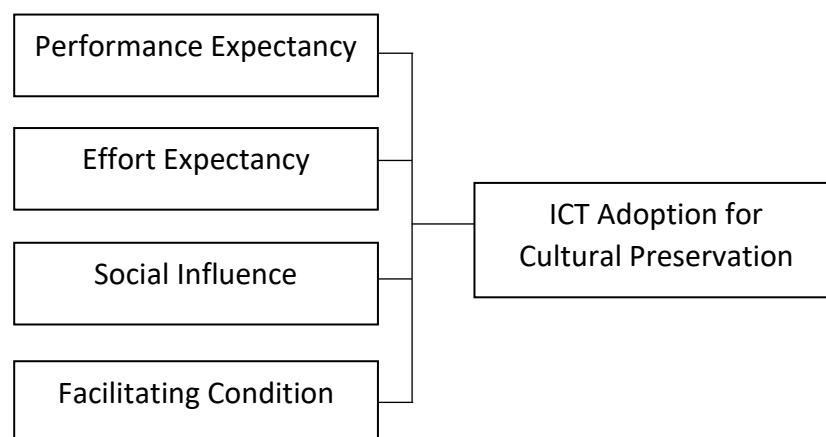
Using the Unified Theory of Acceptance and Use of Technology, this study sought to identify the factors that influence the adoption of ICT among the Kadazandusun community for cultural preservation (UTAUT).

Conceptual Framework

The Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh, Morris, Davis, and Davis was used in this study (2003). UTAUT has identified the critical factors and contingencies associated with predicting behavioral intention to use a technology.

Furthermore, UTAUT was initially used as a baseline model and has been used in a variety of studies encompassing technology use in both organizational and non-organizational settings (Stofega and Llamas, 2009). As a result, there has been a lack of expansion and integration of the UTAUT model in other contexts, particularly in the cultural context. Similarly, several models related to information systems, technology, and user psychological behaviors have been introduced in the study, but none of the studies have taken cultural perspectives into account. For example, while the Theory Acceptance Model (TAM) has been heavily focused on the context of information systems, Theory of Planned Behaviour (TPB) is a general model for studying human behavior. Following the availability of various models, Vankatesh et al (2003) introduced UTAUT, which provides a refined view of how the determinants of intention and behavior evolve over time. This model is a definitive model that serves as a foundation for technology research.

In this study, the researcher studied, adopted, and modified the UTAUT model to fit the cultural preservation context of this study. The theory identifies four key factors, namely performance expectancy, effort expectancy, social influence, and facilitating conditions, as well as four moderators (i.e. age, gender, experience, and voluntariness) in predicting behavioral intention to use a technology and actual technology use (Venkatesh et al., 2003). This theory has been used in a number of studies to illustrate the factors that influence the adoption of a system or innovation.

(Adopted from Vankatesh et al., 2003)
Figure 1: Modified, Unified Theory of Acceptance and Use of Technology (UTAUT)

The performance expectancy construct is defined as an individual's belief that using the system will help him or her achieve gains in job performance. Performance expectancy was measured in this study to reflect the native community in Sabah's adoption of ICT for cultural preservation. Key words like enhances, facilitates, saves times, and useful in finding information, learning about culture was used to construct the five items of the construct.

The degree of ease associated with using the system is defined as the effort expectancy construct. The native community's effort in adopting ICT for learning, promoting, sharing, and preserving their culture was measured for this construct item. The social influence construct is defined as an individual's perception that important others believe he or she should use a new system. In this study, an individual's social system, such as family, relatives, friends,

community, government, and religion, is used to construct the items of the construct that influence the individual to use ICT for cultural preservation.

The final construct, facilitating conditions, is defined as an individual's belief that an organizational and technical infrastructure exists to support system use. The elements used to construct the items are financial resources, access to ICT tools, time allocation, skills, and facilities. As shown in Figure 1, ICT adoption is the independent variable in this study, while the effects on cultural preservation are the dependent variable. Meanwhile, the researcher thought it was critical to determine the relationship of other components that might influence ICT adoption, as proposed by UTAUT theory.

Methodology
In this study, a quantitative approach was used. This study included 350 Kadazandusun community members as participants. Due to the high density of Kadazandusun population, data was collected in two locations: Penampang and Ranau. The Kadazans live in the suburbs, near shops or in town, whereas the Dusuns live in the interior, particularly in Ranau and Tambunan. Purposive sampling was used to obtain respondents because (1) the population size of each ethnic group is not well quantified and (2) the ethnic minority communities are dispersed due to a number of them moving to the city area for job opportunities. As a result, it is difficult to select respondents proportionately based on ethnic groups.

A questionnaire with two sections was used to conduct the survey. The first section discusses the respondents' demographic background, followed by the four factors of ICT adoption. Performance expectancy, effort expectancy, social influence, and facilitating conditions are the four factors of ICT adoption that are measured. To determine the mean of the four factors measured, a descriptive analysis was performed.

Findings & Discussions
Respondents' Demographic Background
There are 175 (50%) respondents who are between the ages of 15 and 30, 105 (30%) who are between the ages of 31 and 60, and only a small number of respondents who are senior citizens, 70. (20 percent). Female and male respondents were nearly equal in percentage, with 176 (50.3%) male and 174 (49.7%) female respondents. There are 199 Muslims (56.9 percent) among the respondents, with 150 Christians (42.9 percent) following. The majority of the 215 respondents (61.5 percent) were in the B40 income bracket, with a monthly income of less than RM4000.

To answer the study's objective, descriptive analysis was used to examine all four factors of ICT adoption, namely performance expectancy, effort expectancy, social influence, and facilitating conditions.

The highest mean score among the four factors measured is performance expectancy, followed by effort expectancy, social influence, and facilitating conditions. The factors were measured on a five-point agreement Likert scale. Thus, the highest mean score is 5 and lowest is 1.

Performance Expectancy

Table 1

Mean Score of Performance Expectancy.

Statement	Mean
1. ICT facilitates me to find information about my culture easily.	4.07
2. ICT saves time in learning about the uniqueness of my culture.	4.00
3. Using ICT can enhance knowledge of my culture.	4.05
4. ICT is useful in preserving my culture.	3.93
5. ICT is useful in promoting my culture.	4.25
TOTAL	4.06

The overall mean performance expectancy score was 4.06/5. The item on 'ICT is useful in promoting my culture' has the highest mean score of 4.25 out of the five items measured. This demonstrates that the Kadazandusun community believes that ICT can help them promote their culture. The statement 'ICT is useful in preserving my culture', on the other hand, has the lowest mean score of 3.93, but it did not show a significant difference when compared to the other four items. The lowest score for item 4 could be attributed to the Kadazandusun community's belief that the effort to preserve their own culture and traditions should be attributed to the community's efforts rather than relying on ICT, which is only a tool. Nonetheless, it is worth noting that the overall mean score of 4.06/5 demonstrated that ICT can assist the Kadazandusun community in performing better in terms of cultural preservation.

Effort Expectancy

Table 2

Mean Score of Effort Expectancy

Statement	Mean
1. ICT facilitates me to learn about my culture.	4.01
2. ICT helps me in promotion of my culture.	4.09
3. ICT increases my skills in preserving my culture.	3.91
4. ICT facilitates me in sharing my cultural knowledge.	4.11
TOTAL	4.03

The overall mean effort expectancy score was 4.03/5. This indicates that respondents believe that effort expectations influence ICT adoption. As a result, native communities in Sabah that embrace ICT may be able to increase their efforts to preserve their culture. Among the four items assessed, item 3 has the lowest mean score, 3.91, indicating that ICT improves one's ability to preserve culture. This is most likely due to the fact that culture is passed down from generation to generation through inheritance as young generations are raised in it, growing up to appreciate and pass it on to their children (Kimutai et al., 2014). While ICT can help to ease the effort of preserving culture, the first step is to have the initiative and motivation to protect one's own culture. Some intangible cultures necessitate individual experiences in which they can identify with the "real world" and their "real" selves in order to safeguard the authenticity of one's cultural identity (Su, 2018).

Social Influence
Table 3
Mean Score of Social Influence

	Statement	Mean
1.	Family influences me in using ICT to maintain my culture.	3.48
2.	Relatives influence me in using ICT to preserve my culture.	3.44
3.	Friends influence me in using ICT to improve my cultural knowledge.	3.68
4.	Community influences me in using ICT to promote my culture.	3.73
5.	Government encourages me to use ICT to preserve my culture.	3.54
6.	Religion influences ICT usage in personal development for purpose of preserving my culture.	3.17
	TOTAL	3.51

The overall mean social influence score was 3.51/5. This indicates that respondents were somewhat agreeable that social influence was a factor influencing ICT adoption. As a result, the Kadazandusun community in Sabah's intention to use ICT to preserve their culture was moderately influenced by the microsystem level of friends, relatives, and family. This finding is consistent with the findings of Attuquayefio and Addo (2014), who discovered a positive influence of social influence on students' behavioral intention to use ICT for learning.

Religion had the lowest mean score of 3.17 among all social influences, while the community had the highest mean score of 3.73 in influencing the Kadazandusun community to use ICT to preserve culture. Nonetheless, the difference between the two items is not statistically significant.

Facilitating Conditions
Table 4
Mean Score of Facilitating Conditions

	Statement	Mean
1.	Financial resource is not a barrier for me in using ICT to preserve my culture.	3.47
2.	I have access to ICT hardware and software for purposes of preserving my culture.	3.43
3.	I am able to allocate time to use ICT to preserve my culture.	3.38
4.	I do not have sufficient ICT skills to preserve my culture.	2.98
5.	I have the opportunity to use internet because there are available facilities in my area.	3.75
6.	When I want to use ICT, the internet connectivity in my area is not stable.	3.49
	TOTAL	3.42

The overall mean score for facilitating conditions was 3.42/5. This indicates that respondents were moderately agreeable that one of the factors influencing ICT adoption was facilitating

conditions. The facilitating conditions had the lowest mean score of the four factors assessed. As a result, it was revealed that the Kadazandusun community is having some difficulties adopting ICT to preserve their culture due to a lack of skills, poor coverage, limited access to the internet, and financial constraints.

Item 4 on having sufficient ICT skills to preserve culture has the lowest score of 2.98 out of the six items in this domain. This has revealed that there is a digital skills gap among the Kadazandusun community. According to Van Dijk (2017), as physical access to the digital divide narrows, there is growing concern about a second level of digital divide, which is skill and usage. Despite the fact that the other three factors of ICT adoption had a positive impact on ICT usage, the Kadazandusun community is having difficulty mastering the ICT skill for cultural preservation.

Conclusion

This study provides insights on the Kadazandusun community's use of ICT for cultural preservation when the UTAUT model was used. The findings revealed that the Kadazandusun community believes ICT can help them perform better in order to preserve their culture. Second, ICT adoption can help with cultural preservation. On the other hand, the Kadazandusun community can easily adopt ICT without much influence from the social circle. In terms of facilitating conditions, its score was the lowest of the four factors, indicating that the tools, skills, financial resources, and facilities were inadequate.

This study only looked at the Kadazandusun community in Sabah, so it cannot be generalized to the entire population of Sabah or Malaysia. Furthermore, the factors of ICT adoption were only descriptively measured in this study using a mean score. It can be improved further by determining which ICT adoption factors influence user behavior in terms of cultural preservation.

In terms of policy implications, this study found that the Kadazandusun community supports the government's initiative to build a digital community. Nonetheless, the digitalization initiative's implementation should be more inclusive in reaching out to the rural community, in this case, the Sabah natives. Furthermore, physical access to ICT should go hand in hand with bridging the digital divide by providing adequate skills and usage training to the community.

Acknowledgement

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