



E-PROCEEDING OF THE INAUGURAL  
**CONFERENCE ON FUTURE AND  
SUSTAINABLE EDUCATION**  
**CFSE 2022**

**Embracing Change and Transformation:  
Build the Future of Education**

29th – 30th November 2022

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International Islamic University Malaysia



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# USABILITY EVALUATION FOR ARTS, CULTURE, AND HERITAGE MOBILE APPLICATION AMONG ASNAF ENTREPRENEURS IN PERLIS

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**Abstract.** The usage of mobile applications for knowledge-sharing through digital literacy has increased in tandem with the growth in the adoption of digital technology. Similarly, in an attempt to minimize the negative effects of today's globalization on local cultural heritage, mobile applications as a learning platform are widely used. However, in this context, poor application usability could be a factor in the adoption and usage of mobile applications among users. This includes ineffective features and poor design of mobile applications. This study aims to examine the adoption of an arts, cultural, and heritage mobile application developed and termed the Virtual *Asnaf* Business Center (ABC) among *Asnaf* entrepreneurs. A qualitative approach, particularly physical face-to-face interview sessions, was employed for this mobile application testing. The results of the study found that although the majority of respondents are in business for more than a decade, only one respondent advertised their products on social media, suggesting that the respondents were generally not IT-savvy. Suggestions include digital adoption training, the inclusion of user manuals and tutorials, as well as additional features to the mobile application. The study's findings are important for mobile application developers in designing user-friendly mobile applications focusing on arts, culture, and heritage in Malaysia.

**Keywords.** Mobile Apps; Arts, Culture and Heritage; Usability; Asnaf Entrepreneurs; Tourism; Perlis

## INTRODUCTION

Information Technology (IT) applications are scarce, particularly in culture and heritage. IT plays a crucial role in providing digital networks. It also acts as a platform that integrates core information-intensive areas of tourism operations, synthesizing general systems IT infrastructure, network communications, operating systems, platform, analytics data, cloud services, added travel production systems, and applications (Koo, Gretzel, Hunter, & Chung, 2015). Budiman, Wati, and Norhidayat (2020) stated that the positive effect is that information technology can advance culture. IT facilitates communication and information gathering about the existence of other cultural values that differ from one's own cultural heritage.

Tourism in Malaysia is experiencing an incredible pace of tourism development. Perlis borders offer popular domestic tourism destinations such as Penang and Langkawi Island, as well as international destinations like Thailand and Indonesia. Through a strategic international initiative, namely Indonesia-Malaysia-Thailand Growth Triangle (IMT- GT), Perlis benefits through the spill-over of tourists' arrival from neighbouring states and countries. Perlis is strategically a major entry point to Langkawi Island via Kuala Perlis,



providing a gateway to Malaysia for tourists from Thailand through Padang Besar.

Apart from being positioned as an eco-tourism destination, Perlis offers an additional appeal. Heritage tourism is one of the significant tourism branches and is an emerging trend positively contributing to Perlis. However, marketing efforts are crucial in attracting tourists with special interests in Arts, Culture, and Heritage. This trend has emerged as a potential form of alternative tourism among both international tourists as well as Malaysian domestic travellers because not only the differences of ethnicities present in Malaysia available in Perlis but also the assimilation of culture brought from Thailand have an effect on colourful discipline ranging from its architecture, handicrafts, traditional attire, music, and dance. Perlis and Thailand have had a very close relationship since Raja Syed Hussain Jamalullail was crowned King of Perlis during the reign of Siam (Thailand) government in 1843. In Perlis, a minority of the population consists of Thai people (locally known as Orang Siam), especially in Bukit Wai, living harmoniously with other ethnicities.

In light of the above, it is interesting that tourism in Perlis is also a big interest of the royal government. The Islamic Religious Council and the Perlis Malay Customs Council, popularly known as Majlis Agama dan Istiadat Melayu Perlis (MAIPs), were founded by DYMM Al Marhum Tuanku Syed Alwi. MAIPs play a major role in managing Islamic affairs. One of its main responsibilities is the distribution of *zakah* to the needy or the *Asnaf* in Perlis. To realize the tourism vision in Perlis, the *Asnaf* community in Perlis can be said to be active in upgrading the socioeconomic status. Most *Asnafs* in the state of Perlis are more focused on food-based businesses, manufacturing (workshops and furniture), tailoring, grocery stores, agriculture, and animal husbandry. Only a few of the *Asnaf* group are involved in the tourism industry, such as producing art and heritage items (handicrafts). Tourism products from arts, culture, and heritage are traditional or local food, homestays, and handicrafts made from local plants such as bamboo and rattan.

The *Asnaf* community in Perlis has been directly involved in the arts, culture, and heritage business for over a decade. A mixed generation, mostly led by the senior generation, actively involved in bamboo and rattan handicrafts and selling their products through conventional methods. Recently, they have used information technology and social media as a platform for promotion and marketing. Ben Haobin Ye, Huiyue Ye, and Rob Law (2020) said that cultural, generational, and geographical comparison studies regarding tourist preferences should be conducted. How cultural or generational value orientation can affect customers' adoption of information technologies is a largely unexplored area.

To date, there are 'Craft-On-The-Go' mobile applications developed by the Malaysian Handicrafts Development Corporation for Malaysian entrepreneurs who are involved in handicrafts, arts, and culture for promoting directory purposes. The applications, however, are not usable for disabled people without voice interpretation elements. Therefore, the usability of mobile applications for arts, cultural, and heritage is needed to explore and evaluate the advantages and strengths of the Perlis trail of history, heritage, art, and cultural tourism digital platforms as an alternative for business enthusiasts and buyers, as well as initiatives in helping local entrepreneurs and communities, remain competitive and viable. Recent studies show that poor application usability in the context of mobility is the most important factor in deciding not to use or delete a mobile application (Tarute, Nikou, Gatautis, 2017). Poor usability could be attributed to a number of different reasons, including the improper features of mobile applications.

It should be noted that there are significant differences between the website and the mobile application environment (Tarute, Nikou, Gatautis, 2017). However, the main usability characteristics are device-agnostic. In developing a mobile application of Arts, Cultural, and Heritage App for *Asnaf* Entrepreneurs in Perlis, the objective of this paper aims to investigate the usability of mobile apps for Arts, Cultural, and Heritage tourism products in Perlis.

## METHODOLOGY

A qualitative research design was used in this study via introspective, semi-structured interviews. As the importance of qualitative research becomes more widely recognized, qualitative methodologies aim to generate knowledge based on human experiences (Sandelowski, 2004). Since this study is exploratory due to the lack of research information regarding the use of applications among Perlis entrepreneurs, the qualitative study is suitable to understand the phenomenon or concept resulting from the few related studies (Creswell, 2009). Six female entrepreneurs were selected based on “purposive sampling” where their main involvement is as *Asnaf* entrepreneurs of art, culture, and heritage in Perlis, especially in the field of forest produce (wood), forest produce (rattan), and Perlis kebaya makers (refer to Table 1). According to Creswell (2009), while the number chosen for purposive sampling is always small, participants can provide rich information for a systematic study to be done. The sample selection criteria were also based on the fact that the participants have been in the industry for more than five years in Perlis. Their business is on a micro-scale, operating either from their own house or sharing a shop lot with other entrepreneurs in the same field.

TABLE 1. Participant Profile

Participants	Age	Gender	Years in business	Nature of Business
Participant 1 (P1)	33	Female	10	Forest products (wood)
Participant 2 (P2)	40	Female	14	Forest products (wood)
Participant 3 (P3)	52	Female	20	Forest products (wood)
Participant 4 (P4)	42	Female	7	Kebaya Perlis
Participant 5 (P5)	36	Female	5	Kebaya Perlis
Participant 6 (P6)	53	Female	29	Forest products (rattan)

To answer the main objective of the study, which is to investigate the usability of art, culture, and heritage mobile applications, the researchers determined the interview outline by consulting relevant literature as well as seeking experts' opinions. The main interview questions posed to the participants are the following (1) How do people out there know about your product? (2) What are the applications you know that sell art and heritage products? (3) How do you market your products? (4) What are your thoughts about this application in terms of its usability and ease of use? Participants' consent to be interviewed was obtained prior to the event, and their responses were audio-recorded for the purpose of transcription and analyses. The interviews, which lasted between 1 to 2 hours, were conducted in the Malay language and at the interviewees' workplace so they could feel most comfortable cooperating with the researchers meaningfully. The researchers remained objective while collecting data and developed positive relationships with the participants. Techniques such as unconditional acceptance, active listening, and clarification were used to promote data authenticity and avoid bias. The interview data were subjected to verbatim transcription using simple transcription conventions and then translated into English. Based on the codes, the researchers summarized and extracted meaningful statements, assigned codes, and formulated the themes present. Conflicting opinions on the contents of a theme were discussed and resolved by a research group composed of four researchers with Doctor of Philosophy (PhD) degrees.

## RESULTS AND DISCUSSIONS

### Participants' Experience in Product Marketing Platforms

With regards to the interview questions (1) How do people out there know about your product? (2) What are the applications you know that sell art and heritage products? and (3) How do you market your products? The findings from the interview revealed participants' prior knowledge and experience regarding online product marketing platforms. Not surprisingly, although all the participants marketed their products physically through their physical shops, they agreed that online platforms could greatly help market their products as they have used Internet platforms such as Facebook, My Craft Shoppe, and Craft-On-The-Go to reach out to wider customers. As stated by P1 and P2 below,





P1 - "I use Facebook (for marketing). That is where we get our orders, but mostly for products that we can manage to complete. I do not know of any other apps now. Kraftangan Malaysia has one. It is called My Craft Shoppe. This is a website and also a mobile app. They also have Facebook."

P5 - "I only have Facebook to market my products, but I use Facebook Page, not my personal account. So if they find me and my products, they can be directed to my Facebook. Because I think Facebook helps for now. So if they want to buy from me, they can see my designs and message me there, and from there, I can communicate with them or try WhatsApp."

For the participants, the application will definitely help make their products more visible and marketable as well as create more awareness of products that come from Perlis, provided training is provided to use the apps. As summed up by P2 - "We only have Facebook. But in the future, it is good to know that there will be an app that serves and sells Perlis products to be well-known and to be easily marketed. This app can be easy to use, provided we have a stable Internet connection and a lot of data storage on the handphone. We just need the training and learn how to use it."

For a few of them, product marketing may not be a problem as they were already well-known locally either by word-of-mouth or involvement in the country's arts and craft scene in Malaysia like Malaysia Fest and Kraftangan Malaysia,

P3 - "I get a lot of orders for my products, but most of them are based on local orders around here. They know me and come to my shop. So familiarity. This means they know me by word-of-mouth or Facebook. But I am not active on Facebook."

P6 - "Honestly, I am more known outside of Perlis than in Perlis itself. I have been around for quite some time in this business, as I have gone to so many arts and crafts festivals and shows with Kraftangan Malaysia. I am often invited to participate in the Malaysia Fest events together with well-known craft artists like Pak Non Wau and Batik Noor Kaseh, representing the state government."

Besides that, given that the internet has a lot to offer regarding marketing products, most participants felt that the online platforms could be a disadvantage for those who are not IT literate or savvy. As mentioned by P2 and P3 respectively,

P2 - "I am okay when it comes to the internet and applications, but sometimes it gets challenging and overwhelming, so I tend to give up even to go explore and use. Also, my mom's handphone has too many apps in it, so I cannot download anything anymore." To P2, the challenge is not only the internet but also the mobile phone storage capacity.

P3 - "I am also not IT savvy as I am too old for that. So I am not familiar with any marketing applications besides Facebook. Even that is managed by my daughter, as I'm not interested to learn all this IT stuff. But there is one by Kraftangan (Malaysia), but I do not have to do one for myself as they (Kraftangan Malaysia) will do it for us. There are too many things to be done, and I do not have the time or the manpower (to use or learn about IT stuff)." P3 felt unobligated to learn "all about the IT stuff" and relegated the task to her daughter's responsibility. This seems to indicate that age can also be the reason behind the disinterest in using apps.

### Virtual Asnaf Business Centre (ABC) Application Usability Evaluation

This section presents the user evaluation of the ABC application. Based on the interview and general observation from the researchers when the participants tested the application on their mobile phones, the majority of the participants can be said to have little too basic knowledge in IT or how to use the application in which certain functions were not familiar to them. Therefore, the general question used for this study is:

(4) What are your thoughts about this application in terms of its usability and ease of use?

To further highlight the details of usability evaluation, several questions (Table 2) were asked to the participants after the task performed (using the application) session. The usability attributes listed are mapped to the usability heuristics (heuristics evaluation) to assess the application (Nielsen, 2020; Lam et al., 2021).

**TABLE 2.** Usability Interview Questions

No	Items	Usability attributes
Q1	Adalah tidak rumit menggunakan aplikasi ini/ <i>It was simple to use the application</i>	Ease of use, Aesthetic and minimalist design
Q2	Saya dapat menyelesaikan tugas dengan cepat menggunakan aplikasi ini/ <i>I was able to complete the tasks quickly using the application</i>	Efficiency
Q3	Sistem ini memberikan mesej ralat yang memberitahu saya dengan dengan jelas bagaimana menyelesaikan masalah tersebut/ <i>The system gave error messages that clearly told me how to fix problems</i>	Help users recognize, diagnose and recover from errors
Q4	Setiap kali saya membuat kesilapan menggunakan aplikasi ini, saya dapat membaiki pulih dengan mudah dan cepat/ <i>Whenever I made a mistake using the application, I could recover easily and quickly</i>	Help users recognize, diagnose and recover from errors
Q5	Adalah sangat mudah untuk mencari maklumat yang diperlukan/ <i>It was easy to find information I needed</i>	Accessibility
Q6	Maklumat (yang dipaparkan) adalah sangat berkesan dalam membantu saya menyelesaikan tugas yang diberi/ <i>The information was effective in helping me completing the tasks</i>	Understandability, Match between the system and the real world
Q7	Organisasi maklumat pada aplikasi adalah jelas/ <i>The organization of information on the application screens was clear</i>	Understandability, Match between the system and the real world
Q8	Papan muka aplikasi ini adalah menyenangkan/ <i>The interface of the application was pleasant</i>	Aesthetic and minimalist design
Q9	Aplikasi ini mempunyai semua fungsi dan keupayaan yang saya harapkan/ <i>The application has all the functions and capabilities I expect it to have</i>	Learnability
Q10	Secara keseluruhan, saya berpuas hati dengan aplikasi ini/ <i>Overall, I am satisfied with the application</i>	Satisfaction

Ease of use in the study is perceived as the level of the participants' effort related to the usage of the application. The Q1 is used to get participants' perceptions concerning their experienced interaction with the application (Weichbroth, 2020). The majority of the participants reported that the application was simple and easy to use (Q1). This may be due to the user experience in using other applications, such as Facebook (FB), which form knowledge and mental models to operate the applications.



P1 - *"It is easy, as long as the Internet line is okay."*

P2 - *"Easy - because it is simple. I can do it by myself".*

P5 - *"Easy because the application provides a location function, company logo, and product images."*

P6 - *"Easy - because it is simple, and moreover, I used to teach others (to use applications)."*

The second usability attribute measured in the study is efficiency. Efficiency is defined as the "ability of a user to complete a task with speed and accuracy" (Weichbroth, 2020). Q2 clearly underlines the efficiency of participants in completing specific tasks. The majority of the participants reported being able to complete the task given by the researchers.

P1 - *"Supposedly, I can complete the tasks faster, but the Internet connection is not stable."*

P2 - *"I think I can complete the tasks faster if I have all the information needed (product images, company logo, and store location)."*

P6 - *"I can complete the tasks faster because I used to do it before (other applications)."*

P2 - *"I can do it faster if the Internet connection is stable and if I have all the necessary information (product images, company logo, and store location)."*

Helping users recognize, diagnose, and recover from error attributes was highlighted in Q3 and Q4. Error recognition and recovery will help users to identify the problem and constructively suggest a solution (Nielsen, 2020). This attribute aims to fully automate application testing due to evaluating its compliance with efficiency and effectiveness requirements and detecting bugs and errors (Weichbroth, 2020). In this study, the participants could easily recognize and diagnose the errors and limitations of the application. However, it is found that the application should provide error prevention, which can prevent unconscious errors caused by inattention.

P1 - *"Ooo, the app does not allow us to include more images. If we upload more images, the apps will display the latest image".* The participant is able to learn and recognize the error in uploading more product images. However, the application allows the latest images to appear on the top row.

P6 - *"It is hard to type the product description (faster) because if we mistakenly click the button, automatically, we will exit from that interface. If we want to type the product description again, we need to do it once more. This is my third time doing it".* This shows that the application fails to provide a mechanism, such as a saved draft or pop-up window, before allowing the user to exit to another page. This can be a frustrating experience for the users to repeat the same action several times.

Q5 emphasized accessibility, which refers to product capabilities ("technical accessibility") or product usability by users with disabilities (Bevan, 2008). Accessibility can be measured in two different contexts; technical and usability (efficiency and effectiveness). Thus to evaluate the performance of the application, the accessibility in this study focuses on the efficiency of finding information. Similar to Lam et al.'s (2021) study, the efficiency attribute was used to investigate searching and navigation in cultural and heritage systems. Two participants reported that the information was easy to find through the application.

P1 - *"Easy (to find information related to the product) because each of the images has a description."*

P1 - *"If we can find the product information based on the product type, it will be much easier compared to searching through the stores."* The P1 believed that the application was accessible. However, it is easier if the application allows retrieval of the products through product types.

Meanwhile, Q6 and Q7 are related to understandability (Weichbroth, 2020), in which the content used in the application is clear to the users. This means the information is presented through the users' language, which uses words, phrases, and concepts familiar to the user rather than internal jargon. The information also appears naturally and logically (Nielsen, 2020).

Most participants were unaware of the store location (longitude and latitude) and kept the information to themselves. Thus, understanding the location store was the main issue among the participants since they were unable and unfamiliar with searching for the information. However, they understand that information (store location) is very important for their business. Three of the participant highlighted the same issue.



P1, P2, P5 - *"It is hard to search for the Longitude/Latitude. However, if there is no information (location store), it will be difficult for the customers to find the store. It happened before when the customers could not find the store (the store location is a bit hidden). Waze showed the front part"*.

Meanwhile, for Q7, four of the participants reported ease of using the application due to the clear presentation of information.

P1, P4, P5 - *"Easy to use because the instructions are simple and there are not many tasks to perform."* P6 - *"Actually, it is easy and simple (the information)."*

The next usability attribute is aesthetics and minimalist design (Q8). Bevan (2008) highlighted that aesthetics are designed into the product to create a good user experience. Visuals are important to establishing good first impressions (Fessenden, 2021), and in this case, applications that voluntarily use their attractiveness will largely determine whether or not and to what extent the application will be used (Vermeeren et al., 2008). The attractiveness of using the application is closely related to the emotional response to (the exposure to and interaction with) the software. Veermeren et al. (2008) further highlighted that factors like the user's context, user predispositions, and constraints play an important role, such as familiarity and availability of other applications with similar functionality. The majority of the participants showed attractiveness to the application due to their previous experience and familiarity with other applications (such as complexity).

P4, P5 - *"It is easy to understand because it is not complicated."*

P1, P6 - *"It is easier to use (the application) compared to others (not complicated)."*

The learnability attribute is highlighted in Q9. Learnability is the capability of the software product to enable the user to learn its application" (Moumane et al., 2016). Learnability is connected to any aspect of predictability which provides easiness to the users to become familiar with the migration features (of the new application) (Paterno et al., 2008). The participant reported that the application was easy to use when she wanted to upload the images. She successfully completed the tasks several times. This means the participant easily manages to develop knowledge to use the application, and the steps taken to complete the task (in the new application) are learnable and memorable.

P1 - *"I can say that the application is simple and easy to use, for example, if I want to upload product images. I have uploaded other images"*.

The Q10 question measures the overall participants' reaction to satisfaction with the application. Satisfaction is defined as "the comfort and acceptability of the work system (application) to its users and other people affected by its use" (Moumane et al., 2016). Satisfaction used in the study aims to get the general users' reaction towards user interface, learning aspects, system capabilities, information, and multimedia, amongst others. (Moumane et al., 2016). In general, three participants were satisfied with the application.

P1 - *"The difficult part when using the application is the Internet connection and location store (longitude/latitude). Other parts are satisfactory"*. Lam et al. (2021) reported having bandwidth and network access issues. The network issues pointed out in their study are related to providing services for the viewers to access the systems - cultural and heritage systems. On the other hand, this study found that the participants had accessibility issues to the Internet connection due to geographical aspects.

P5 - *"It is acceptable because it is (the application) not that hard and complicated."*

P6 - *"Satisfied because it is easier compared to the other."*

Based on the findings on participants' background knowledge of online platforms in product marketing, it can be concluded that the participants were generally agreeable to developing the application that could help make made-in-Perlis products more visible and marketable, given adequate training to ensure user readiness and friendliness. This finding relates to the responses given on the usability evaluation feedback or responses in the later part of the interview, which shows that usability attributes are measured on ease of use, efficiency, accessibility, understandability, learnability as well as satisfaction. Most of the participants provide positive feedback on these attributes. However, under the help users recognize, diagnose, and recover from errors attribute, the participants provide negative feedback, which the feedback can be used for the application improvement.





## CONCLUSIONS

The emergence of COVID-19 has caused a high adoption of mobile tourism applications to promote tourism products among industry players like business operators, travel agents, and tourism entrepreneurs. However, the usability of the mobile tourism application still needs more investigation, especially in terms of ease of use, efficiency, and accessibility among entrepreneurs generally. Hence, we proposed a research model with four usability factors: perceived ease of use, efficiency, accessibility, intention to use, and actual use.

According to the findings, accessibility and efficiency attributes have played a significant role in the perceived ease of use of mobile application usability. Furthermore, it was found that a few *Asnaf* entrepreneurs had used mobile applications to promote and advertise art, culture, and heritage products in Perlis. Besides, the results also indicate factors that explain the phenomena of low knowledge and a lack of understanding of the keenness of mobile applications to reach their customers in the current market. As reported, such findings imply that a small number of *Asnaf* intrapreneurs produce art, culture, and heritage products and utilize social media or mobile applications to introduce their products to the market.

COVID-19 has caused a rapid proliferation of smartphones and increased usage of mobile applications as a business platform for promotion purposes. Tied with technology and logistics efficiency, it allows customers to receive products safely in a shorter period. Additionally, the wide variety of online payment options is also deemed useful.

On the other hand, these findings also proposed a user-friendly mobile app for the *Asnaf* entrepreneur community in Perlis to support an increase in sales and consumer retention. Most importantly, *Asnaf* must understand that consumers perceive mobile app technology as useful and simple to use and that this perception influences their attitude and intention to use it. Besides, this will offer *Asnaf* entrepreneurs a user-friendly mobile app that provides product features of good quality and meets consumer needs. Furthermore, considering the COVID-19 pandemic, promoting tourism businesses (art and cultural heritage) through mobile apps will lend a competitive edge in the market. This study is limited to the arts, culture, and heritage of Perlis.

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## REFERENCES

1. Bevan, N. (2008, June). Classifying and selecting UX and usability measures. In *International Workshop on Meaningful Measures: Valid Useful User Experience Measurement* (Vol. 11, pp. 13-18). Toulouse, France: Institute of Research in Informatics of Toulouse (IRIT).
2. Budiman, E., Wati, M., & Norhidayat, N. (2019). Mobile Cultural Heritage Apps for the Digital Literacy of the Dayak Tribe, Borneo, Indonesia. *Conservation Science in Cultural Heritage*, 19, 205-217.
3. Creswell, J. (2009). Research design qualitative, quantitative, and mixed methods approaches (3rd ed.). Thousand Oaks, CA Sage.
4. Fessenden, T. (2021). Aesthetic and Minimalist Design (Usability Heuristic# 8). *Nielsen Norman Group*.
5. Koo, C., Gretzel, U., Hunter, W.C, Chung, N. (2015). The Role of IT in Tourism. *Asia Pacific Journal of Information Systems*, 25(1), 100-104.
6. Lam, D., Hoang, T., & Sajjanhar, A. (2021). Identification of usability issues of interactive technologies in cultural heritage through heuristic evaluations and usability surveys. *Multimodal Technologies and Interaction*, 5, 75.
7. Tarute, A., Nikou, S., & Gatautis, R. (2017). Mobile application driven consumer engagement. *Telematics and Informatics*, 34(4), 145-156.
8. Moumane, K., Idri, A., & Abran, A. (2016). Usability evaluation of mobile applications using ISO 9241 and ISO 25062 standards. *SpringerPlus*, 5, 1-15.



9. Nielsen J (2020) 10 Usability heuristics for user interface design. Nielsen Norman Group. <https://www.nngroup.com/articles/ten-usability-heuristics/>. Accessed 25 Aug 2022.
10. Paternò, F., Santoro, C., & Scordia, A. (2008). Evaluating migratory user interfaces. In *International Workshop on* (p. 79).
11. Saad, Mazni (2022). *Perlis: Kembara Eko dan Warisan, Seni dan Budaya dalam Sektor Pelancongan Mesra Muslim Perlis*. Perpustakaan Negara Malaysia, Kulliyyah of Languages and Management
12. Saad, M., Najib, M. D. H. M., & Pratt, T. J. (2022). Valid Virtual Reality Applications for Commercial Kitchen Safety Training. *Environment-Behaviour Proceedings Journal*, 7(19), 403-409.
13. Sandelowski, M. (2004). Using qualitative research. *Qualitative health research*, 14(10), 1366-1386.
14. Vermeeren, A. P. O. S., Kort, J., Cremers, A., & Fokker, J. (2008, June). Comparing UX Measurements, a case study. In *Proceedings of the International Workshop on Meaningful Measures: Valid Useful Experience Measurement, Reykjavik, Iceland, June* (Vol. 18, pp. 72-78).
15. Weichbroth, P. (2020). Usability of mobile applications: a systematic literature study. *Ieee Access*, 8, 55563-55577.
- Ye, B. H., Ye, H., & Law, R. (2020). Systematic review of smart tourism research. *Sustainability*, 12(8), 3401.