Make Up Your Mind! Roles of Demographic Profiles on Library's E-Services Usage

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Abstract. Library E-Services is the collection of online databases, electronic journals, electronic books, and online repositories that are accessible through online interactivity. Research on library e-services has gained momentum since the start of 2020 due to the emergency of Novel Coronavirus 2019. Thus, this study follows the recent trends by investigating the influences of demographic profiles on user decision-making approach to use the library e-services. To answer the research problem, an instrument was developed and analyzed using Statistical Package for Social Sciences version 26. Findings show that gender has a significant difference concerning the decision-making approach in using the library e-services. On the other hand, age, type of faculty, and education level do not have a significant difference concerning the decision-making approach in using the library e-services.

Keywords: Digital library; user engagement; e-services

1 Introduction

Library e-services refer to the collection of online databases, electronic journals, electronic books, and online repositories that are accessible through online interactivity [1]. Library e-services is a mandatory subscription responsibility for universities; failure to subscribe to the e-services may influence performance, research output, and potential benefits to the university's stakeholders [2-5]. Each year, universities spent million to subscribe to various library e-services especially digital resources related to the needs of the universities. However, few studies reported that the usage of these e-services is under-utilized, especially before the pandemic of Novel Coronavirus 2019 (COVID-19) [6-9].

COVID-19 pandemic has caused universities to adapt to a new norm – through various online concepts such as distance learning, online distance learning (ODL), e-learning, etc. The high dependency on online education has also increased the usage of library e-services, as asserted by [1] and [10]. The ever reliance on online digital resources raises the issue of the factors that may influence the expected usage and potential impact of continuous interaction with the library e-services. Thus, universities were also concerned about the usage rate of the e-services, since subscribing to those resources requires a large yearly investment.

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On the other hand, most of the research in determining the usage of library e-services are focusing on four dimensions: individual, technological, organization, and contextual. However, a glance at the literature shows that there is a gap identified especially on the influence of demographic profiles on library e-services usage. As found by [1], demographic profiles influence digital library engagement; however, the impact diversifies – meaning that other factors may influence the interaction effect. Thus, the purpose of this study is to answer the following research question:

What is the relationship of demographic profiles in shaping user decision-making in using library e-service?

The subsequent section is organized as follows. First, the methodology of the study is briefly explained. Then, data collection was performed, analyses and interpretation. Lastly, a discussion of the result and conclusion were outlined.

2 Research Methods

The study was conducted in several empirical phases. The first phase involves instrument development. The items of the instrument were adopted from several previous studies of [1], [5], [6], [7] and [9]. The second phase involves items checked by an expert from academia and industry to ensure the validity of the items. Each expert was given 2 weeks to complete the evaluation, based on [11] Content Validity and Relevance Index (CV-I). A modification was made to the instrument based on the output given by the experts. In the third phase, a pilot study was conducted, and Cronbach's Alpha coefficient was assessed to determine the reliability of the instrument. Following the success of reliability analysis, a full-scale data collection is conducted to assess and confirm the research problem.

Concerning population and respondent selection, a stratified convenience sampling method was adopted. The population of the study was chosen from one of the biggest universities in Malaysia comprising of 6 faculties. Raosoft Sample Size Calculator was used to determine the appropriate sample size of the study. To ensure the validity of the data, data cleaning was conducted before the actual analysis of the research data. Data were assessed for missing data, straight-lining, and empty datasets. Data were then imported into statistical software, Statistical Package for Social Sciences version 26 for final analysis. The subsequent section will discuss the result of the study.

3 Results and Discussion

The following subsection shows the finding and discussion of the study.

3.1 Demographic

Table 1 shows the demographic profiles of respondents. The majority of respondents are female (N=147) followed by male (N=45). Most of the respondents are from 20 to 30 years old (N=160 or 83.3%). In relation to faculty, the highest respondents represent the Faculty of Information Management (N=77 or 40.1%).

Table 1. Demographic

Item	Sub-Item	Frequency	Percentage
Gender	Male	45	23.4
	Female	147	76.6
Age	Below 20	28	14.6
	20 – 30	160	83.3
	31 - 50	4	2.1
Faculty	Information Management	77	40.1
	Administrative Science and Policy Studies	31	16.1
	Business and Management	67	34.9
	Accountancy	17	8.9

3.2 Independent Sample T-Test

Table 2 shows the result of the Independent Sample T-Test of the study between gender (male and female) and e-services usage. The result show that there is a significant difference in the score between male (M=5.14, SD=1.14) and female (M=4.51, SD=1.07) conditions; t (69.440) = 3.294, p = 0.02. The test result suggests that different kind of genders has the capability to influence the decision to use or not to use the library e-services.

Table 2. Independent Sample T-Test

Variable	Sub-Item	*F*	*Sig.*	*df*	*Sig. (2 tailed)*
Gender	Equal variances assumed	2.33	0.13	190	0.01
	Equal variances not assumed			69.440	0.02

3.3 One Way Analysis of Variance (ANOVA)

Table 3 shows the result of the One-Way Analysis of Variance (ANOVA) of the study. ANOVA test was conducted between the demographic profiles (age, faculty, and level of study) towards e-services usage. The result indicating as follows: (1) there is no significant different between three ranges of age [F(2, 189) = 0.051, p = 0.950], (2) there is no significant different between four type of faculties [F(3, 188) = 2.033, p = 0.111], and (3) there is no significant different between three level of education [F(2, 189) = 1.90, p = 0.153].

Table 3. One Way Analysis of Variance

Variable	Sub-Item	Sum of squares	df	Mean square	F	Sig.
Age	Between groups	0.13	2	0.065	0.051	0.950
	Within groups	238.12	189	1.260		
Faculty	Between groups	7.485	3	2.495	2.033	0.111
	Within groups	230.76	188	1.227		
Level of Education	Between groups	4.69	2	2.347	1.90	0.153
	Within groups	233.55	189	1.236		

The finding of the study indicates that gender plays an important role as the game-changer in respondents' decision-making approach. Gender was proven to have significant differences

in the usage of library e-services, supporting the previous work of [1], [12], and [13]. Thus, library and information agencies must consider the distribution of gender in the population when deciding on designing the curriculum, policy, and subscribing to library e-services – as gender may affect the usage of the library e-services, as well as the level of user engagement. Our study also indicates that focusing effort on gender differences may influence the speed of usage, level of user engagement, and competency in using library e-services.

On the other hand, other demographic profiles such as age, faculty, and level of education show that there is no significant difference in determining the decision to use or not use the library e-services. Contrary to other research, this study found that age does not influence the decision to use the library e-services. The finding contributes by the nature of the respondents in which most respondents are within 20 to 30 years old and they were given enough training via library training skills – thus contributing to the competency in using the library e-services. Similarly, different faculties and levels of education also do not have significant differences in shaping the usage of library e-services. This can be attributed to the fact that each student that enrols in university has been given the necessary knowledge and training in using the library e-services.

4 Conclusion

The research was conducted to identify the influence of demographic profiles on the usage of library e-services. To answer the research question, a quantitative research design was conducted, and the findings were analyzed based on descriptive and inferential analyses. Findings show that gender has a significant difference in the decision-making approach to use library e-services. On the other hand, other factors (age, faculty type, and education level) has no significant difference in the decision-making approach to use library e-services.

To conclude, even though the study has met its purpose, however, a few limitations can be highlighted. First, this study uses a minimal number of elements as the dimensions of demographic profiles. Future studies may increase the number of possible elements. Second, the study use data from a single source. Future studies may consider a larger population for better generalization of study. Third, the study adopted a quantitative research paradigm. Future studies may consider either qualitative research paradigm or bibliometric analysis to gain further understanding of the research problem.

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References

[1] M.R.M. Rosman, M.N. Ismail, and M.N. Masrek, “How Engaging Are You? Empirical Evidence from Malaysian Research Universities,” International Journal of Interactive Mobile Technologies, vol. 15, no. 4, 2021.

[2] D. Begum, and M.H. Elahi, “Digital library services to support online learning amid COVID-19: a study of a private university library in Bangladesh,” Digital Library Perspectives, 2022.

[3] J. Ćirić, and A. Ćirić, “The impact of the COVID-19 pandemic on digital library usage: a public library case study,” Journal of Web Librarianship, vol. 15, no. 2, pp. 53-68, 2021.

[4] M.R.M. Rosman, M. A. A. Aziz, N. A. Alimin, N. A. Azman, F. N. Ramli, and F. B. Shuhaimi, "What Drives Digital Library User's Satisfaction Behavior? Investigating the Level and Its Determinants," Advances in Information, Communication and Cybersecurity: Proceedings of ICI2C'21, vol. 357, pp. 320, 2022.
[5] A. Khan, and S. Qutab, "Understanding research students' behavioural intention in the adoption of digital libraries: A Pakistani perspective," Library Review, vol. 65, no. 4/5, pp. 295-319, 2016.
[6] K.K. Matusiak, "Perceptions of usability and usefulness of digital libraries," International journal of humanities and arts computing, vol. 6, no. 1-2, pp. 133-147, 2012.
[7] M.N. Masrek, M. H. Razali, I. Ramli, and T. Andromeda, "User engagement and satisfaction: The case of web digital library," International Journal of Engineering and Technology (UAE), vol. 7, no. 4, pp. 19-24, 2018.
[8] K. Moorthy, L. Chun T'ing, K.S. Ming, C.C. Ping, L. Y. Ping, L. Q. Joe, and W.Y. Jie, "Behavioral intention to adopt digital library by the undergraduates," International Information & Library Review, vol. 51, no. 2, pp. 128-144, 2019.
[9] N.S. Baharuddin, and M.R.M. Rosman, "Factors Affecting the Usage of Library E-Services in the Aftermath of COVID-19 Pandemic," Academic Journal of Business and Social Sciences, vol. 4, no. 1, pp.1-14, 2020.
[10] M. R. M Rosman, I. H. Arshad, M. S. M. Saleh, N. Abdullah, F. H. Fadzil, and M. Z. M. Zawawi, "User Behavioral Intention to Use Online Distance Learning (ODL): The Role of Self-Efficacy and Domain Knowledge," International Journal of Interactive Mobile Technologies, vol. 15, no. 18, pp. 4-15, 2021.
[11] D. F. Polit, and C.T. Beck, "Generalization in quantitative and qualitative research: Myths and strategies," International Journal of Nursing Studies, vol. 47, no. 11, pp. 1451-1458, 2010.
[12] G. Stone, and E. Collins, "Library usage and demographic characteristics of undergraduate students in a UK university," Performance Measurement and Metrics, vol. 14, no. 1, pp. 25-35,2013.
[13] S. C. J. Sin, "Modeling the impact of individuals' characteristics and library service levels on high school students' public library usage: A national analysis," Library & Information Science Research, vol. 34, no. 3, pp. 228-237, 2012.