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THE USE OF DIGITAL LIBRARY BY ART UNDERGRADUATES IN SRI LANKA: A CASE STUDY AT UNIVERSITY OF PERADENIYA

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Abstract

The purpose of this paper is to explore the understanding of digital library use and its acceptance by arts undergraduates in Sri Lanka. Survey research design was applied and 150 undergraduates were selected as sample of the study. Structured questionnaire was used to gather data and total of a 132 respondents completed the survey, resulting in a response rate of 88 %. All the respondents use the library and majority of them are aware of the digital library. The most popular methods of students' becoming aware of the digital library are, through library website and library staff. Study found that more than half of respondents' use digital library and there is a notable gap between awareness and the usage of the digital library. Present study identified some factors for not using the digital library. Overall, majority of digital library users are satisfied with the services, and system characteristics of the digital library, but average percentage of users are satisfied with the current methods applied by the library to make the users aware about the digital library information. It is notable mark to library management to improve more services for user benefits. The most significant finding was that students who use the digital library they perceived that it is

important to their studies and students have realized the usefulness of the digital library. As users are having positive attitudes about this system, they intend to use it more for their learning and research in future. But users recommend that people would be more likely to use the digital library, if they are provided with proper training and awareness programs on digital information use.

Keywords

Digital Library, User Survey, University of Peradeniya, Sri Lanka

1. Introduction

Present day library services have been transformed from traditional services to electronic services, as online access to information is becoming very popular among the present society (Jeong, 2011; Raghavendra, 2016). As digital libraries have increasingly become a gateway to access electronic resources, it provides opportunities to users to access a verity of information resources (Yusoff, 2009).

The concept of digital libraries started two decades ago in developed countries. Though it has emerged in developed countries, after millennium it has been an often discussed topic in the rest of the world and many fields such as information science, computer science and librarianship (Saracevic, 2000). There are many advantages of the digital library compared to traditional library such as, resources are storing in digital form, easy and remote access, searching flexibility and power to users (Thong, Hong & Tam, 2004). Digital libraries have become of increasing significance in recent years, developing in functionality and content, and becoming accessible to a wider community of users (Borgman, 2000; Hong et al., 2001; Chowdhury, 2002; Chu, 2003; Andrews & Law, 2004). As in developed countries, university libraries in Sri Lanka have taken steps to digitize their library materials to increase user access to their library collections (Pushpakumara 2007; Hindagolla 2012; Gamage 2013; Balasooriya 2014; Gunasekara, 2017). The university of Peradeniya library network has taken steps to initiate university digital library in 2009. After some pilot tests has been done, digital library has been created using D-space in Linux platform. After receiving the permission by university authorities, university copyrighted documents such as university research publications, theses abstracts, academic staff members research publications were deposited into the digital library. There are adequate number of materials is available in the digital library for user communities.

2. Research Problem and Objectives

As an enormous amount of money is spent to build the digital library, increasing user access of digital libraries is an essential component for effective information dissemination. However, most of the research on digital libraries has been carried out from the management perspectives (Park et al., 2009; Heeks, 2002; Anandarajan et al., 2000). Less research has been done on digital library usage and acceptance from the users' perspective.

Although, there are many advantages of digital library, our understanding is that the digital libraries are under utilized by users. It has been identified in many studies, though the digital library has been promoted to various levels of users, potential users may not use and the intention among the students to continue using digital library is relatively low (Turan & Bayram, 2013; Chen, 2012; Carlock & Perry, 2008; Ramyah, 2006).

Even though, University of Peradeniya has introduced a digital library for users, no study has been conducted to study the acceptance and issues relating to the digital library. However, it is important to be determined if students are really familiar with digital library services, are students actually making effective use of it? Do they really have a kind of similar perception or differ in their views about this digital library services provided by Peradeniya university library? Therefore, the main objective of this study is to investigate to what extent the arts undergraduates in Peradeniya University accept the digital library for their academic purposes. The specific objectives covered in the study are

- To identify the awareness of digital library, purposes of the use of digital library, factors for against digital library use,
- To determine the user level of satisfaction, Users' perceptions towards the digital library.

3. Literature Review

Existing research is focused on various aspects of digital libraries. The previous research on digital library use is discussed here. Bagadu (2013) studied the perception of students towards digital library services in the International Islamic University, Malaysia. Survey method was used for the study. The study revealed that high level of awareness and utilization of DC among respondents. Respondents showed positive attitude towards the IIUM (Bagadu, 2013).

Turan & Bayram (2013) studied that the views and habituations of university students in regard to use of digital library. Study explored that purpose of use, usage frequent and use tools for the digital library by students of Ankara University. Study findings showed that whereas the

students use the internet resources, digital library is not yet placed as their first priority among their choices. The reasons are not being aware of how to use the digital library; students find their own resources sufficient for their research (Turan & Bayram, 2013).

Sheeja (2010) explored the perceptions of undergraduate students towards the digital library at Cochin University of Science and Technology in Cochin, India. The study showed that almost all students used the digital library for learning. They frequently access the digital library for getting previous exam question papers, syllabi and other materials pertaining to their studies. They were satisfied with the current digital library features and functionality. Students recommended the addition of more documents related to their courses and useful links to the digital library (Sheeja, 2010).

Liu et al. (2011) discussed about the similarities and differences of digital library use between undergraduates and graduate students in China. The study showed that the use of digital libraries is influenced by a combination of various factors. Remote access and faster access were identified as most important factors in digital library use. Both groups have positive attitudes about the Digital library but undergraduates are unfamiliar with digital libraries. Study concluded that users will be use digital library services, if suppliers would integrate the system characteristics, navigation features, natural language capacity, make available detailed tutorials and more full text options (Ziming Liu et al, 2011).

Joeng (2011) explored understanding of e-library usage and e- library acceptance behaviors by Korean elementary students who were using and e- library system *Booktobi* which was established in 2005 in Korea. In this study, Technology Acceptance Model was applied for explaining users' intentions to continue using the e-library. Results of the study indicated four major findings in interface characteristics, system characteristics, system quality and total influence of the perceived ease of use play as primary determinants of behavioral intention (Joeng, 2011).

Muhammad and Kanwal (2009) investigated the acceptance and importance of the digital library among female students at international Islamic University, Islamabad. The study revealed that the access of digital library is indispensable to the students, in order to complete their research studies. According to their results, students were unable to meet their information needs as digital library access was limited and the quality and quantity of their research were affected due to the restriction of digital resources. The lack of information literary programs, IT training workshops,

availability of IT literate staff and electricity failure were the main problems for the access digital library (Muhammad and Kanwal, 2009).

Park et al. (2009) studied the user acceptance of digital library system in developing countries. The study examined the factors that influenced people's adoption and use of a digital library system and tested the applicability of the Technology Acceptance Model. Study revealed that perceived ease of use of the library system has a significant impact on perceived usefulness which led to behavioral intention to use it. Study identified similarities and differences in the significance predictors of the digital library acceptance across countries. Study concluded that factors needed to be considered in the process of designing, implementing and operating digital library systems (Park et al, 2009).

Previous studies showed how different populations use the digital library, their perceptions and acceptance in different contexts. As there are dearths of studies found in Sri Lankan context, the present paper attempts to analyze, how undergraduates use the digital library and how they perceived the digital library services in the university library system in Sri Lanka.

4. Methodology

The study employed survey research design and University of Peradeniya is selected as the location of the study. The study population consisted of undergraduates studying at the Social Science and Humanities in Faculty of Arts at University of Peradeniya for the academic year 2014/2015. Second, third and fourth year undergraduates were selected for the study, but first year students were excluded from the study as they are beginners to the university education and library use. In total 150 students was selected using simple random sampling method. Each student was given a structured questionnaire to gather information from the target group. It consists of open and close ended questions. In total of 132 fully completed questionnaires were returned. The collected data were analyzed using SPSS version 21.0 for Windows. Frequency analysis and some variables were tested to identify the relationship using Pearson correlation test.

5. Results and Discussion

The response rate of the questionnaire was 88%. Out of 150 respondents 132 were responded. 91% of female students and 9% male students were contributed to the study. Majority of the sample was represented by the age group from 17-23. Respondents were represented from

eighteen departments and the all respondents used the main library. About 32% of respondents visit library every day, about 38% of respondents visit library 1-3 days a week and about 27% of respondents visit library 4-6 days a week. The purposes of visiting the library varied, majority of respondents (82%) visiting the library to borrow books and about 85% of respondents visiting to find information from reference books. Results indicated that the popular methods of accessing information in the library are “access to Online Public Access Catalogue” (67%), browsing book shelves (54%) and access through the library website (39%).

5.1 Awareness of the Digital Library

One research objective of the study was to find whether the undergraduates are aware of the digital library of the university. Results indicated that 71% of undergraduates were aware of the digital library of the university (Figure 01).

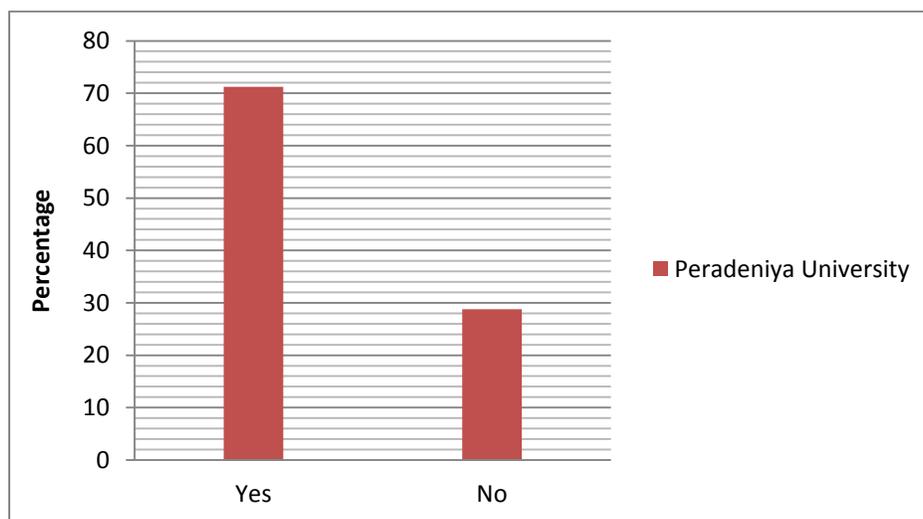


Figure 1: *User Awareness of Digital Library*

(Source: Research Data)

Study explored how undergraduates became aware of the digital library; study found that 53% of undergraduates became aware from the library website and 16.7% undergraduates aware from the library staff. Library user education programs, library leaflets & pamphlets and teaching staff were not significant methods of propagating awareness about the digital library.

5.2 Use of the Digital Library

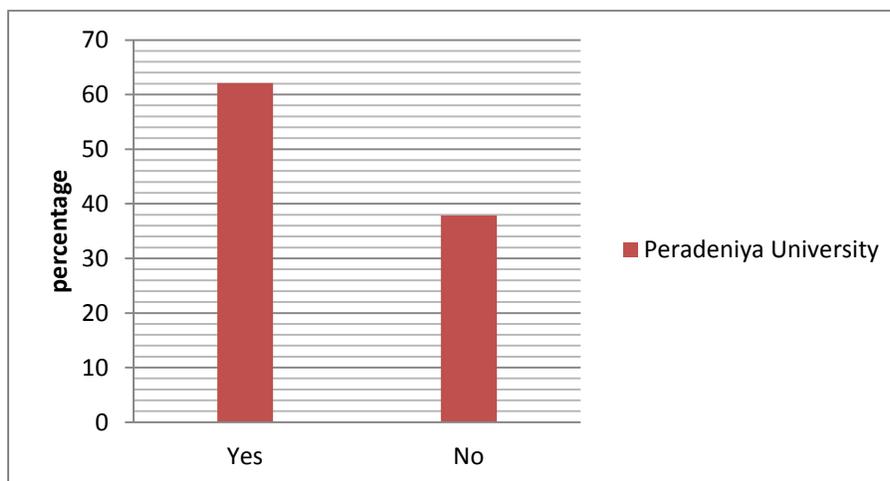


Figure 2: *Use of Digital Library by Undergraduates*

(Source: Research Data)

Data showed that the use of digital library by undergraduates was 62%, although, the awareness of digital library is higher, findings showed that the usage of digital library is relatively low (62%). It was found that there is a gap between awareness and the usage of the digital library and library management should find mechanisms to increase usage of digital library as thousands of rupees has been spent to develop this portal to disseminate academic scholarly information and upgrade knowledge for the university clientele. According to the year of study year of the undergraduates, 3rd (35.6%) and 4th year (34.1%) students are using the digital library information for their learning and research. Generally 3rd and 4th years students have to read more books and articles for their assignments and fourth year students are engaging in their research work; therefore use of digital library is higher compared to other years.

5.3 Purposes of Use of the Digital Library

The study examined the purposes of using digital library by undergraduates. Respondents have given multiple answers. All students who use digital library have mentioned that they use digital library to “find information for their learning and research”(100%) while about 71% of students mentioned that they use digital library for further reading and updating knowledge. It seems that the students are looking for additional information for their studies. About 84% mentioned using the digital library for writing thesis and assignments. It also indicated as a main reason for looking at additional information for their research activities.

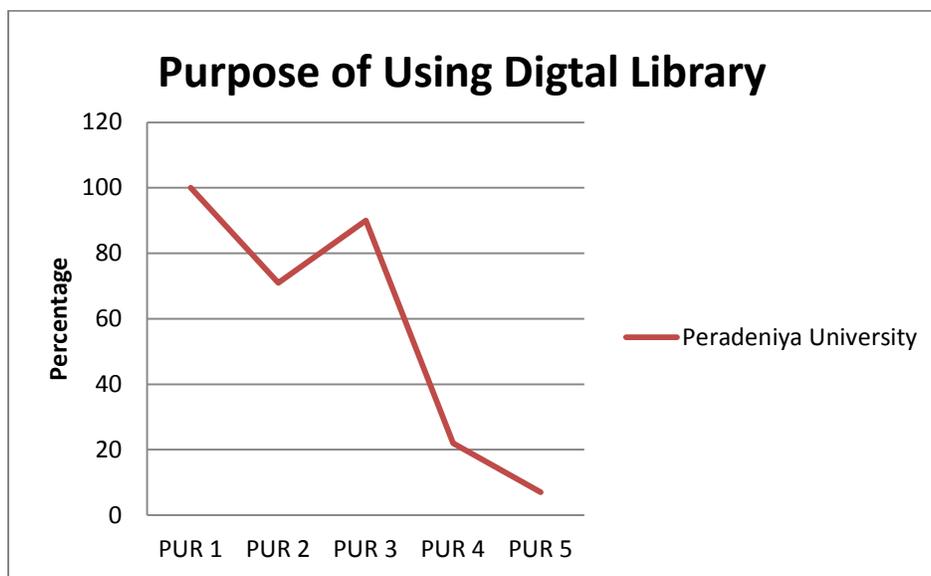


Figure 3: Purpose of Using Digital Library

(Source: Research Data)

(PUR1: To find information for learning and research PUR2: For further reading update knowledge, PUR3: To write thesis/ assignments, PUR4: To search information which are not available in other format. PUR5: Other)

5.4 Factors for not Using Digital Library

The nonuse of digital libraries is influenced by a combination of various factors. Survey participants were asked to mention the factors for not using digital library. Factors discouraging digital library use were identified. According to Table 1, higher percentage of students (76%) mentioned that “they were not aware about this system” as a major nonuse factor, and 68% of students indicated that they aware of the digital library but didn’t know how to use it. This indicated that students who do not use the digital library, because of the unawareness and lack of knowledge in handling the system. Similarly 34% of students mentioned that “Internet facility is not working properly” and 42% mentioned “Online reading is uncomfortable for them”. This indicates that digital libraries are new to undergraduates’ students and they didn’t know how to use it properly for their studies. Moreover, undergraduates are very much focused on books rather and they tend to use books than digital information. One respondent pointed out “I don’t aware this system and I am always did not have courage to use digital library when I need some information, training can help me remove the fear and interact with the system”. Therefore, training users for accessing information on digital library is particularly important.

Factors such as the lack of availability of relevant materials and not having access to archival and older publications are encountered as a barrier for not using digital library. Few students commented that they do not use digital library due to lack of sufficient retrospective materials on their subjects. It indicates that students from social science and humanities need a wider range of materials of older and archival publications. Therefore, the study results agreed with the Liu & Luo (2011) study which established that digital collections need to match with the user’s needs, what users are looking for their studies; it will create repeated users and growth in usage through word of mouth (Liu & Luo, 2011). Monopoli et al., also mentioned that “Depth and performance of the content, in combination with breadth, will enhance the overall critical mass and encourage users to make extensive use of the service (Monopoli et al., 2002).

Table 1: Factors for not Using Digital Library

Factor	Respondents	%
Not aware about digital library	38/50	76
Internet is not working properly	17/50	34
Using books are convenient	16/50	32
Lack of materials and Non availability of archival and old publications	22/50	44
No need of electronic information	8/50	16
Online reading is uncomfortable	21/50	42
Though aware about digital library but don’t know how to use it	34/50	68

(Source: Research Data)

5.5 User Satisfaction of Digital Library Use

In order to obtain an assessment of a certain library services, user satisfaction is important to be taken into account. Present study evaluates how much the users are satisfied with the digital library services provided by the library. Majority of digital library users were “satisfied” and “very satisfied” (86%) with the information provided by the digital library, according to them information is sufficient for their learning and research. Moreover, 62% of users were “satisfied” and “very satisfied” with the library staff assistance when needed. About 54% users were “satisfied” and “very satisfied” with the methods applied to aware library users about the digital library information. Overall, majority of digital library users were satisfied with the services offered by the

library, it is notable marker for the library management to improve and add more services to user benefits. As well as services, study evaluates how users satisfied with system characteristics of digital library. Over 80% of users are satisfied with the accessibility and usability of digital library and over 70% of users are satisfied with the search and browse functions, navigation and help features. It seems that the majority of users are satisfied with the digital library characteristic features, It indicates the system is more user friendly to the individual person and who use satisfied with the system and automatically have positive attitudes towards the system as well as have tend to use it further too.

Table 2: User Satisfaction of the Digital Library Services

Statement	NS %	U%	LS %	S%	VS%	NA%	Total %
Methods applied by the library to aware	2.27	11.36	32.57	47.72	6.06	0	100
Digital information provided by the library is sufficient			8.33	43.93	39.39	8.33	100
Library staff assistance when users need help	1.5	2.2	18.18	18.93	43.18	15.9	100
Accessibility of the digital library	6.8	-	6.8	29.54	52.27	4.5	100
Usability and interface in general	1.5	-	5.3	40.90	44.69	7.5	100
Search and browse functions	11.36	-	5.3	31.06	46.96	5.3	100
Navigation	12.87	1.5	7.5	34.84	37.87	5.3	100
Help features	6.06	-	8.33	32.57	46.21	6.8	100
Download speed	3.03	-	18.93	37.12	39.39	1.5	100
Ease of getting print copies	6.8	0.75	21.21	37.12	28.78	5.3	100

(Source: Research Data)

(NS=Not at all satisfied, U=Unsatisfied, LS=little satisfied, S=Satisfied, VS=Very Satisfied, NA= Not Applicable)

5.6 User Perceptions towards the Digital Library

The study explored how users perceived the usefulness of digital library use. It was measured by asking respondents to rate the usefulness with a five point scale on the following dimensions: materials available in the digital library are relevant to what I am searching, Information provided by digital library enables us to improve quantity of learning and research, Information provided by digital library enables us to enhance quality of learning and research work. About 71% of respondents in this survey are “strongly agree” and “agree” with the materials

available in the digital library. Similarly about 84% respondents who use digital library also “agree” and “strongly agree” that information provided by digital library enables them to improve their quantity of learning and research work and 75% of respondents “agree” and “strongly agree” that digital library information improved their quality of learning and research. Results indicated that students who use the digital library perceived, that it is important for their studies and students have realized the usefulness of digital library and it influences them to use digital library in the future too.

Table 3: *Users Perceptions of the Usefulness of Digital Library*

University	The digital materials available in library is relevant to what I am searching (%)						Total
	SA	A	N	D	SDA	NA	
Peradeniya (n=82)	17	53.7	24.3	4.8	0	0	100
	Digital information provided in the library enables us to improve quantity of learning and research work. (%)						
	SA	A	N	D	SDA	NA	
Peradeniya (n=82)	24.3	59.8	11	2.4		2.4	100
	Digital library enables us to enhance quality of learning and research work (%)						
	SA	A	N	D	SDA	NA	
Peradeniya (n=82)	14.6	60.9	24.4	0	0	0	100

(Source: Research Data)

(SA= Strongly Agree, A=Agree, N =Natural, D=Disagree, SDA=Strongly Disagree, NA= Not Applicable)

Over 80% of undergraduates perceived that the digital library is useful and it helps to increase their quality and quantity of research. This finding confirmed the results of studies by Park et al. (2009) and Jeong (2011).

Table 4: *User Perception of Ease of Use of Digital Library*

Respondents	I find the information in digital library is easy to use (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	4.8	56.1	26.8	4.8	0	7.32	100
	I can access information without visiting library (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	2.4	54.8	26.8	8.5	2.4	4.8	100
	I can assess information at anytime (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	14.6	48.7	18.3	15.8	0	2.4	100
	I can downloaded information what I need (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	12.2	53.6	30.4	3.6	0	0	100

(Source: Research Data)

(SA= Strongly Agree, A=Agree, N =Natural, D=Disagree, SDA=Strongly Disagree, NA= Not Applicable)

Study examined how undergraduates perceived the ease of use of the digital library. About 60% of students believed that digital library is easy to use and nearly 57% and 63% of students agreed that they access information without visiting library and access information at any time respectively. 66% of students also perceived that down loading information is also easy. Ease of use of digital library has been influenced to users in many time access of information and users are tend to use this without visiting library and access information at any time.

According to the results, students who use the digital library perceived it as useful for their learning and research as a way of enhancing quality and quantity of their work. Similarly, further results indicated that students believed that digital library is easy for using. Those two factors directly affected the student's future intention to use of digital library in their research activities.

Study explored how undergraduates intend to use digital library in the future. According to the results about 76.5% users have an intention of digital library is very useful as well as they have an intention to use in future too. Majority of users (about 73%) experienced that digital library is easy to use and they intend to increase their use more. About 82% students mentioned that if they have awareness program about the digital library use, in future, the usage will be increase than present. The findings shows students who use the digital library understood the digital library useful to their studies, it is easy to use and further they have an intention of using it in future too. All factors are correlating with each other and it shows following Table 5.

Table 5: *Correlation among Perceptions*

		PU	PE	PI
PU	Pearson Correlation	1	.201*	.362**
	Sig. (2-tailed)		.021	.000
	N	132	132	132
PE	Pearson Correlation	.201*	1	.145
	Sig. (2-tailed)	.021		.096
	N	132	132	132
PI	Pearson Correlation	.362**	.145	1
	Sig. (2-tailed)	.000	.096	
	N	132	132	132

*. Correlation is significant at the 0.05 level (2-tailed).

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

(Source: Research Data)

(*PU=Perceived Usefulness, PE=Perceived Ease of use, PI= Perceived Intention to use*)

Correlation among users' perceptions such as perceived usefulness (PU), perceived ease of use (PE) and Perceived intention to use (PI) helps to predict the relationship of each variable. Table 05 shows the significant correlations among factors and indicates a positive correlation between perceived usefulness and perceived ease of use. (alpha level = 0.201*) Similarly, significant correlation shows between perceived usefulness and intention to use (alpha level = 0.362**). The study findings confirmed that perceived usefulness and ease of use are directly influence the use of digital library. According to the present study results, we can predict if undergraduates understand that using digital library use enhances their learning and research and digital library is easy to use will directly increase the use of digital library in future. Further it is proved that McMartin et al,

findings of positive interaction of perceived value and frequency of use. Those who greatly valued digital resources reported higher levels of use than other users (McMartin et al., 2008).

Table 6: *Users Intention to Use Digital Library in Future*

	I assume that digital library is very useful to my learning and research, I intent to use it in the future (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	23.1	56.1	12.2	7.3	0	1.2	100
	As it is ease of use I intent to increase my use (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	17	64.6	9.7	6.1	2.4	0	100
	I will use digital library more in future if the library has awareness program to aware us (%)						
	SA	A	N	D	SDA	NA	Total
Respondents (n=82)	17	70.7	12.2	0	0	0	100

(Source: Research Data)

(SA= Strongly Agree, A=Agree, N =Natural, D=Disagree, SDA=Strongly Disagree, NA= Not Applicable)

According to Table 06, about 79.2% of undergraduates intended to use digital library as they perceived it is useful their learning and research. Undergraduates indicated that quite higher percentage (about 58%) due to the ease of use of digital library, they intend to use the digital library in future. They have strong intention to use digital library in future if they have a awareness program as a guidance to use the digital library. It seems that most of students preferred further training on it.

6. Conclusion and Recommendations

This study explored the extent to which arts undergraduates in Peradeniya are aware, use, purposes of use, factors for against and the digital library use, level of satisfaction and users perceptions towards the digital library. All the respondents use the library and majority of them are aware about the digital library. Most popular methods of students' finding out about the digital library are through library website and from the library staff. Study found that more than half of

respondents' use of digital library and there is a notable gap between awareness and the usage. The library management and other authorities should take necessary actions to increase the usage of digital library. There are some nonuse factors identified in the present study, such as; not being aware of the system, though aware about the digital library not having a proper knowledge about how to use it and books are more convenient are the most cited factors for non-usage. Not proper working Internet facility, difficulties in online reading, lack of materials of old and archival publications are also mentioned by respondents. Overall, majority of digital library users are satisfied with the services, and system characteristics of the digital library, but average percentage of users satisfied with the current methods applied by the library to aware users about the digital library information. It is notable mark to library management for improve more services to user benefits.

The most significant finding was that students who use the digital library perceived it as important for their studies and students have realized the usefulness of digital library. As users are having positive attitudes about this system and they intend to use it more for their learning and research in future. However, users are more recommend that people would be more likely to use digital library if they are provided with proper training or awareness programs on using digital information use.

To sum up, for undergraduates who are generally unfamiliar with digital libraries, it is incredibly important to offer targeted training to demonstrate the real benefits and value of using the digital library. Librarians need to explore creative ways to increase the visibility of digital library services to user clientele. It is important to let students know about the efficiency and effectiveness of using of the digital library for their learning and research. The most common issue identified is to increase the usage of digital library and how to make it popular among the undergraduates. Therefore, following recommendations can be drawn from the present study; to improve the use of digital library effectively, library management should organize training programs for undergraduates. There should be a collaborative approach with faculty teachers to promote and increase the usage of digital library among undergraduates .It will be more benefited to them achieving good grades in their academic achievements. Including more information resources to the Digital library which relevant to students study curriculum, undergraduates will access for their learning and research without any intervention.

Although these findings are encouraging and useful, the present study has certain limitations that necessitate additional research. This study was conducted at the University of Peradeniya, Sri Lanka within sample representing only undergraduates from Social Science and Humanities, therefore these findings cannot be generalized beyond this field and Peradeniya University. Hence, further research is necessary to verify the generalizing of these findings to a wider sample, different subject streams as well as different study location too.

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