Levels of Efficacy Factors in the Usage of Electronic Information Resources among Social Sciences and Humanities Undergraduates in Four Universities in Sri Lanka: An Approach Based on Frequency of Library Use

C.N.K. Alahakoon[1]* and S. Somaratne[2]

[1]*Library, University of Peradeniya*
[2]*Department of Botany, Open University of Sri Lanka, Nugegoda, Sri Lanka*

Corresponding author: Email: champa098kumari@gmail.com

1 INTRODUCTION

Self-efficacy is the belief in one's own capabilities to organise and execute the courses of action required to produce given attainments. According to Bandura, (1977), Bong and Skaalvik (2003), self-efficacy theory suggests that there are four main sources of information used by individuals when forming self-efficacy judgments such as mastery, vicarious, social persuasion and people's anxiety. Relating to these four sources it was hypothesized that measure of Information Communication Technology (ICT) self-efficacy, ICT training, ICT anxiety and library support respectively determine the use of electronic information resource in library (EIR) by the final year undergraduates.

The primary objective of the present paper was to measure the levels of efficacy factors that affect undergraduates in four universities; to determine the variation of efficacy levels of undergraduates based on frequency of library use; and to make appropriate recommendations to strengthen their use of ICT and EIR in the libraries.

2 METHODOLOGY

The sample included the final-year undergraduates in the Faculties of Humanities and Social Sciences (HSS) in the four universities in Sri Lanka since they have four years of experience using the library and since these students are required to submit a dissertation in partial fulfilment of the special degree. Out of the ten universities where HSS streams are available in Sri Lanka, the four universities; University of Peradeniya (PDN), University of Sri Jayawardenepura (SJP), University of Ruhuna (RUH) and Rajarata University of Sri Lanka (RJT) were chosen for the purpose of presenting a broader sample.

Computer self-efficacy items developed by Murphy, Coover, and Owen (1989) and Internet self-efficacy (ISE) measurement developed by Hsu and Chiu (2004) were used to develop the ICT self-efficacy (ICTSE) scale of the study, which included 23 items. The ICT anxiety scale incorporated items from Heinssen, Glass, and Knight's (1987). Computer Anxiety Rating Scales (CARS) were used with slight modifications and 10 items out of 21 were chosen. The library support measure was developed with 15 items and 07 items

were selected. ICT training scale included 03 items.

A pilot survey was conducted with 100 students from four universities during the academic year 2015/2016 with 5 point Likert scale and content and face validity was established. The main survey consisted of 604 undergraduates selected from stratified random sampling method from the four universities. The data were analyzed with SPSS Ver. 20 and frequency distribution and ANOVA was used to compare the levels of efficacy of undergraduates in each university. Since each efficacy scale has a different number of items, the total score range for each individual item of the scale was in the 3-115 range i.e. 23=1.04, 1.65/ 10=2.8,…3.5/ 07=1.14,...2.71/ 03=3, 1.3, ..1.6 respectively for each scale.

3 RESULTS AND DISCUSSION

The data collected through stratified sampling method indicated that the sample represented 21.7% of male students and 78.3% of female students and, 86.6% and 11.6% of the sample represented the Sinhala and English medium students respectively, while 1.8% the sample consisted of students in Tamil medium. Since the samples are imbalanced, the gender and the language of instruction on the usage of ICT and EIR are not addressed in the present study.

The frequencies of library use vary from frequently use 31% (5-7 days/week); 55.3% moderately use (3-4 days/week); and to rarely use 7% (1-2 days/week).

Table 1 shows the students' efficacy level of each scale in percentage value, the mean scores, and the standard deviations. The ICT self-efficacy levels of almost all university undergraduates were considerably higher and the mean score ranged from 81-95, with a maximum score of 115, and the overall value was 78%. The respondents of universities of

PDN and RJT have achieved high levels of ICT self-efficacy.

Anxiety levels indicate that students feel low levels of anxiety, except for RJT students, whose mean score was 30 (60%). However, in general, results of the analysis showed that students across all four universities showed a moderate level (50%) of ICT anxiety. This finding suggests that though students' ICT self-efficacy is higher, they are subjected to a considerably higher anxiety levels during the usage of ICT facilities at libraries. The mean score for the library support scale was 68% and it was an indication of availability of satisfactory library support in ICT and EIR usage for undergraduates. `

The ICT training scale shows that students from the SJP have achieved a high level of ICT training, whereas students from the other three universities have only received a moderate level of training. In general, 73% of undergraduates believe that they need training delivered by the library. This was a major requirement for library users, and according to the results of the present study, provision of training on library EIR use may alleviate the ICT anxiety and address the problem of lack of support from library staff. The results of the analysis suggest that undergraduates enrolled at the four universities need to be trained on EIR use.

According to Table 2, the mean level of students' ICT self-efficacy was low among all students who used the library 'rarely' (71%). However, the mean levels for frequent and moderate users were higher and raged from 77% to 77%, respectively. Comparatively, ICT anxiety level also indicated a quite high mean level for undergraduates who used EIR rarely than the mean level of those who frequently and moderately used EIR. However, the overall percentage value for ICT anxiety level was 50% across universities; this indicated the average level of anxiety during their use of ICT and EIR at the library.

Table 1: Variation of efficacy levels of undergraduates between the universities.

University		ICTSE (115)	Level %	ANX (50)	Level %	LS (35)	Level %	TR (15)	Level %
PDN	Mean	4.14		2.42		3.54		3.60	
	Std. Dev.	0.81		1.11		0.58		0.87	
	Minimum	1.78		1.00		2.29		1.00	
	Maximum	5.00		4.90		5.00		5.00	
Mean x No. of items		**95**	**82**	**24**	**48**	**25**	**71**	**10**	**66**
SJP	Mean	3.88		2.49		3.42		4.08	
	Std. Dev	0.83		1.03		0.63		0.94	
	Maximum	1.04		1.00		1.14		1.00	
	Minimum	5.00		5.00		4.86		5.00	
Mean x No. of items		**89**	**77**	**24**	**48**	**24**	**68**	**12**	**80**
RUH	Mean	3.56		2.37		3.37		3.18	
	Std. Dev	0.84		0.94		0.58		0.83	
	Minimum	1.17		1.00		2.00		1.00	
	Maximum	4.91		5.00		5.00		5.00	
Mean x No. of items		**81**	**70**	**25**	**50**	**23**	**66**	**09**	**60**
RJT	Mean	3.98		3.05		3.45		3.85	
	Std. Dev	0.64		0.78		0.52		0.92	
	Minimum	2.74		1.20		2.29		1.67	
	Maximum	4.83		4.80		4.57		5.00	
Mean x No. of items		**91**	**79**	**30**	**60**	**24**	**68**	**11**	**73**
Total	**Mean**	**3.92**		**2.50**		**3.45**		**3.71**	
	Std. Dev	0.83		1.03		0.59		0.95	
	Minimum	1.04		1.00		1.14		1.00	
	Maximum	5.00		5.00		5.00		5.00	
Mean x No. of items		**90**	**78**	**25**	**50**	**24**	**68**	**11**	**73**

ICTSE=ICT self-efficacy, **ANX**= Anxiety,   **LS**= Library support,   **TR**= Training

Table 2: Variation of efficacy levels of undergraduates based on frequency of library use.

University Frequency Level			ICTSE 115	%	ANX 50	%	LS 35	%	TR 15	%
PDN	Frequently	Mean	4.34	**87**	2.32	**46**	3.58	**71**	3.87	**77**
(7-5 days per week)		S.D	0.69		1.17		0.58		0.85	
	Moderately	Mean	4.09	**82**	2.44	**48**	3.52	**70**	3.46	**69**
(4-3 days per week)		S.D	0.79		1.09		0.59		0.85	
	Rarely	Mean	2.82	**56**	3.11	**62**	3.41	**68**	3.08	**62**
(2-1 days per week)		S.D	0.99		0.55		0.36		0.64	

		ICTSE		ANX		LS		TR	
SJP Frequently	Mean	3.98	**79**	2.14	**42**	3.64	**73**	4.07	**81**
(7-5 days per week)	S.D	0.95		1.15		0.59		0.88	
Moderately	Mean	3.90	**78**	2.59	**52**	3.45	**69**	4.12	**82**
(4-3 days per week)	S.D	0.71		0.96		0.56		0.92	
Rarely	Mean	3.76	**75**	2.55	**51**	3.16	**63**	4.02	**80**
(2-1 days per week)	S.D	0.97		1.05		0.73		1.03	
RUH Frequently	Mean	4.10	**82**	1.9	**38**	3.34	**67**	3.38	**68**
(7-5 days per week)	S.D	0.56		0.68		0.44		0.75	
Moderately	Mean	3.32	**66**	2.51	**50**	3.40	**68**	3.23	**64**
(4-3 days per week)	S.D	0.84		0.96		0.65		0.65	
Rarely	Mean	3.37	**67**	2.77	**55**	3.34	**67**	2.62	**52**
(2-1 days per week)	S.D	0.79		0.99		0.55		0.73	
RJT Frequently	Mean	4.01	**80**	3.39	**68**	3.55	**71**	3.85	**77**
(7-5 days per week	S.D	0.71		0.59		0.52		0.95	
Moderately	Mean	4.02	**80**	2.66	**53**	3.47	**69**	3.82	**76**
(4-3 days per week)	S.D	0.57		0.89		0.44		0.96	
Rarely	Mean	3.58	**72**	2.74	**55**	2.74	**55**	3.93	**78**
(2-1 days per week)	S.D	0.33		0.09		0.39		0.59	
Total Frequently	Mean	4.16	**83**	2.39	**47**	3.54	**70**	3.82	**76**
(7-5 days per week)	S.D	0.75		1.11		0.55		0.88	
Moderately	Mean	3.87	**77**	2.52	**50**	3.47	**69**	3.67	**73**
(4-3 days per week)	S.D	0.81		1.00		0.58		0.95	
Rarely	Mean	3.57	**71**	2.66	**53**	3.20	**64**	3.62	**72**
(2-1 days per week)	S.D	0.95		0.97		0.66		1.08	
Total		**3.92**	**78**	**2.50**	**50**	**3.45**	**69**	**3.71**	**74**

ICTSE=ICT self-efficacy   **ANX**= Anxiety   **LS**= Library support   **TR**= Training

According to the ICT training scale, most study participants preferred training in EIR use. Though the average value obtained for ICT training scale was high (74%), students need further support through ICT training on library services with staff support. A comparison of students' responses of the PDN and RUH universities, reveals that they request ICT training less frequently than do students from the SJP and RJT universities. This finding implies that training should be prioritized for library users before they access ICT and EIR services. The provision of adequate ICT training may minimise the need of library support from library staff, ICT anxiety felt by students, and may increase the students' ICT self-efficacy levels.

4 CONCLUSIONS AND RECOMMENDATIONS

Self-efficacy levels of the universities did not show much variation while the ICT anxiety showed the highest variation across the universities. The level of ICT training was found to be poor and the library support available in the university libraries was in the lowest level. The level of library support stands out from the rest of the scales having lowest level in the scales. The results of the overall analysis indicate that users received moderate library support when they used library ICT and EIR resources. This inconsistency in efficacy scales across the universities possibly resulted from the differences in the infrastructure facilities and the availability of training programmes. The comparison of the results of the present study with the previously published research is impossible since the studies concerning these scales are scarce or limited.

The overall analysis of the scales revealed that some items in some scales received lower values, and thus, they were loaded in the factor analysis at acceptable levels. As this was a generalizable study, individual loadings may not affect the scale because it indicated high internal consistence reliabilities in the analysis. It can be mentioned that although these students have a high level of ICT self-efficacy, they are subjected to considerably higher anxiety levels when using the ICT facilities in their library. Although the respondents' ICT self-efficacy levels were high across the universities, majority of students need further ICT training on the use of EIR and additional library support. A cross-sectional, longitudinal study is necessary to understand the level of ICT training students would like to have and the types of library support they have requested.

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