Effect Of Online Information Retrieval Self-Efficacy Of Library Professionals On Innovative Services In University Libraries

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Abstract

Purpose –*The purpose of this research is to examine the influence of online information retrieval self-efficacy of library professionals on service innovation in university libraries.*
Design/methodology/approach-- *The study was based on Bandura's framework of self-efficacy, encompassing social persuasion, mastery experience, physiological states, and vicarious experience. Researchers employed a comprehensive approach to examine the influence of these four sources on innovative practices adopted by university libraries. To achieve this objective, a questionnaire was distributed to gather data from library professionals working in the HEC recognized universities in the capital of Pakistan (Islamabad) and Punjab. After the validation of underlying assumptions, a multiple linear regression test was employed to forecast the outcomes of the dependent variable by using the independent variables. In addition to this, a comparative evaluation was also conducted among all the independent variables to ascertain their individual contributions to the innovation of library s[1]ervices.*
Findings – *The findings underscored the distinct and significant importance of three variables including, mastery experience, social persuasion, and physiological states in predicting the library services innovation. However, vicarious experience did not explain a significant influence on the library services innovation. In addition to this, the effect of physiological states on the library services innovation was comparatively higher as compared to the other three sources of self-efficacy. In conclusion, the current research study recognized the crucial role of online information retrieval self-efficacy in improving library services innovation.*
Practical implications – *The findings of the study have the capability to guide initiatives for organizational policies, training programs, and professional growth that are geared towards bolstering the competency of library professionals in self-efficacy, ultimately fostering a culture of innovation within university library services.*
Originality/value – *The current research study offers valuable insights into vital factors influencing the effectiveness of the information searching process, ultimately resulting in innovation within library services, a fact that was not previously explored in Pakistan or globally. In addition to this, the study's significance lies in its contribution to academic discourse, its potential to enhance library services, and also empowerment of library*

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professionals to provide efficient and satisfying experiences for library users in the contemporary digital information environment.

Keywords *Online information retrieval, Innovation, Library services, Library professionals, Self-efficacy, Information-seeking behavior.*

1   Introduction

Universities are knowledge institutions that play a pivotal role in generating cutting-edge knowledge (Iqbal, 2021). University libraries act as knowledge repositories which are increasingly required to navigate the complex environment of retrieving online information and responding to dynamic needs of researchers, faculty, and students (Head et al., 2020). Moreover, university libraries are dynamically engaged in the endorsement and procurement of electronic resources, aligning with their mission to satisfy the information needs of their library users (Courtney and Kilcer, 2016). In the rapidly growing information technology landscape, the role of library professionals is very important for significant transformation. As university libraries strive to adapt to the current digital age, library professionals' proficiency in retrieving online information becomes very important in shaping the effectiveness and innovation of library services (Okunlaya et al., 2022). The utilization of various computer technologies has become a vital aspect of all professionals in the current information society (Vargo et al., 2021). Additionally, possessing information and computer literacy skills has emerged as an important component of a person's life (Bawden, 2001).

Bandura (1978) introduced the concept of self-efficacy and defined it as an individual confidence in their ability to achieve the desired outcomes through their own actions and behavior. Self-efficacy plays a very important role in influencing human behavior. However, possessing skills and knowledge of individuals are very crucial in shaping their actions and choices, Bandura (1995) emphasized that individuals' emotional states, motivation, and behavior are more rooted in their beliefs than in objective reality. Individuals show more interest in activities and tasks in which they feel confident and competent while avoiding those in which they lack confidence (Kear, 2000, Pajares et al., 2007). Against the environment of an ever-expanding digital repository and increasing demand for information access in university libraries, library professionals' self-efficacy emerges as an important factor in influentialing the success of university library services (Hörzer and Schlögl, 2018). Effective and successful retrieval of information involves more than just acquiring searching techniques and also aware of available information sources (Ingwersen and Järvelin, 2005). Whereas, Feelings play a notable influence in the process of searching and retrieving information. Feelings either negative or positive shape memory, awareness, judgment, and performance (Tyng et al., 2017). Additionally, various environmental and personal factors significantly contribute to determining the outcomes of a search (Kaplan et al., 2021).

In the current digital information environment where online information retrieval self-efficacy is an important factor for library professionals, library services innovation integrates with advanced technological solutions, creative approaches, and inspired strategies to fulfill the library user's needs (Nazim et al., 2023). Furthermore, library professionals who are experts and possess a high level in the retrieval of online information are more inclined toward the successful execution of innovation in library services (Rafi et al., 2022). On the other hand, library professionals' amateur and low level of online information retrieval self-efficacy may face a number of challenges to bring innovation in library services (Bronstein and Tzivian, 2013). Therefore, understanding the self-efficacy of library professionals during online information retrieval becomes a very important factor in the broader perspective of library services innovation (Xu et al., 2022). Moreover, Ahmed and Sheikh (2021) found that library professionals having expertise in online information retrieval, deliver library services efficiently and effectively.

2   Literature Review

A detailed and thorough literature review was conducted for an in-depth understanding of the phenomenon of online information retrieval self-efficacy and library services innovation. To fulfill the study objectives, various studies were examined from the fields of library sciences, social sciences, and psychology to explicate the concepts of online information retrieval, self-efficacy, and library services innovation within the library setting. The analysis of literature specifically delved deeply into the examination of online information retrieval self-efficacy among university library professionals. In addition to this, various research studies were scrutinized to understand the conceptual, theoretical, methodological, practical, and contextual facets relevant to the study.

2.1   Self-efficacy

Bandura (1978) introduced the concept of self-efficacy and defined it as an individual's confidence in their abilities to achieve the desired outcomes through their own actions and behavior. Subsequently, the concept of self-efficacy in the workplace was facilitated through extensive research on managerial decision making which is very complex and explains the different factors that affect the behavior of a manager at work (Bandura, 1995). Furthermore, significant research has revealed that beliefs of self-efficacy concerning goals have a significant impact on individual motivation and performance in the workplace (Bandura and Locke, 2003). Beliefs of self-efficacy influence individuals' emotions, thought processes, and actions, essentially shaping their behavior (Cassidy and Eachus, 2000, Koul, 1999). The beliefs of self-efficacy are the main factor for personal achievements, human motivation, and well-being. Without this belief an individual may lack the motivation to act or a person's actions can yield the desired outcomes (Pajares et al., 2007).

2.2   The four sources of self-efficacy beliefs

Bandura (1986) summaries that a persons' self-efficacy comprised of four sources of information: (a) Verbal persuasion (b) Comparison with others or vicarious observation (c) Physiological or affective states and (d) Mastery experiences or past performance

2.2.1   Mastery experiences or past performance

The experience of mastery holds a pivotal importance as a source of self-efficacy. Moreover, successful past experiences boost a person's self-efficacy beliefs while failure reduces it (Hendricks, 2016). In this regard, Bronstein (2014) emphasized that college students improve their self-efficacy by utilizing electronic resources in their assignments and projects, which are essential for consulting reliable sources throughout their academic endeavors. Furthermore, Bates and Khasawneh (2007) and Britner and Pajares (2006) explored that analysis of one's own capabilities is a primary source of a person's self-efficacy beliefs.

2.2.2   Vicarious Experiences

Observing the experiences of others plays a critical role in influencing a person's self-efficacy beliefs. Witnessing the failure or success of others can be helpful in to contributing and enhancing the self-efficacy of a person (Wilde and Hsu, 2019). Various researchers such as Chan and Lam (2008) and Hodges and Murphy (2009) emphasized that vicarious experiences play a noteworthy factor in enhancing a person's self-efficacy beliefs. Furthermore, Pajares et al. (2007) found that observing the experiences of others had a significant influence on self-efficacy, mainly in terms of their competency in information seeking.

2.2.3   Affective or Physiological States

Physiological arousal, also known as emotional or affective arousal, involves an individual associating their self-efficacy perceptions with their physiological condition (Harley et al., 2019). Individuals having strong self-efficacy beliefs are inclined to view such situations as motivating factors for success while persons with very low levels of self-efficacy may observe

negatively in stressful situations. Furthermore, Mulholland and Wallace (2001) highlighted that individuals having positive physiological states play a pivotal role in enhancing the self-efficacy of an individual.

2.2.4   Verbal or Social Persuasion

Social feedback or social persuasion plays a pivotal role in influencing person's self-efficacy beliefs. An individual with positive feedback accentuates their personal abilities while negative feedback directing attention to areas requiring improvements in self-efficacy beliefs (Sherf and Morrison, 2020). Zeldin and Pajares (2000) and Usher and Pajares (2009) emphasized that a significant aspect of women's self-efficacy in relation to their competence is influenced by the beliefs and evaluations of others regarding the tasks they are capable of undertaking.

2.3   Online Information Retrieval self-efficacy

Online information seeking and retrieval is a cognitive process rooted in an individual's knowledge structures, often described as cognitive maps that evolve by their conceptual development (Belkin et al., 1982, Taylor, 1968). Moreover, effective and successful retrieval of information involves not only the awareness of available information sources and acquiring of searching techniques but attitudes, emotions as well as person's personal and environmental factors are also very important in determining the success of a search. Furthermore, the self-perception and confidence of library professionals regarding their online information retrieval skills significantly influence their performance in searching for information (Matteson and Miller (2013), Tenopir et al., 2008). Moreover, Flavián-Blanco et al. (2011) disclosed that the searching process of articles extends beyond mere familiarity with techniques and strategies for obtaining the required results. In addition to this, emotional experiences and feelings are also encountered during information searching and have an influence on the search performance of researchers. In another study, Keshavarz et al. (2016) conducted an assessment of the competence of library professionals in retrieving necessary articles, a skill crucial for the advancement of individuals in the library profession and strongly linked to their academic success, which is closely associated with feelings of self-efficacy. They also found that researcher's ability to retrieve articles is interlinked with their self-efficacy. Furthermore, Eldakar and Kenawy (2020) assessed the effect of self-efficacy followed by online information retrieval on the researcher's emotional responses while utilizing the Egyptian databases knowledge bank. They established that social feedback has a distinct influence on the emotional states of researchers followed by online article retrieval. Moreover, Mastery encounters and physiological conditions have a substantial impact on the emotional states of researchers. Research results have also underscored that researchers with a high level of expertise are more likely to influence their mastery experiences, emotions, and physiological arousal.

2.4   Online information retrieval self-efficacy and library services innovation

The development of self-confidence in utilizing online information retrieval among library professionals in today's digital information landscape enables them to harness the complete capabilities of search tools, databases, and digital resources. This adoption not only influences the speed of information retrieval and accuracy but also fosters a positive approach to trends in integrating current technologies with library services. Soliman et al. (2022) examined the effect of digital literacy skills on the employee's innovation level and explored that digital literacy skills play a constructive role in enhancing the innovation level of employees. Furthermore, fostering digital literacy skills among employees within an organization serves as a strategy to enhance their innovative capabilities, thereby playing a pivotal role in bolstering the overall success of the organization. In another study, Al-Husseini et al. (2021) examined the relationship between transformational leadership, innovation, and knowledge sharing within higher educational institutes. The researchers used the structured equation model and revealed that there is a positive direct impact of knowledge sharing and transformational leadership on innovation. Furthermore, the sharing of knowledge was acknowledged as a moderator factor in

the correlation between innovation and transformational leadership. Furthermore, Islam et al. (2015) examined the strategies used by library professionals for the provision of good quality services within the libraries. Furthermore, they also explored the obstacles and methods linked with the service innovation and adopting of knowledge management for service innovation within the libraries. The result of the study shows that the majority of library professionals perceive service innovation as very crucial for the ongoing success of the library. Moreover, library professionals express their opinion that knowledge management would be very beneficial for service innovation. Finally, researchers identified outcomes and various strategies that contributed to the development of a theoretical framework for knowledge management in service innovation in libraries. In this respect, Wójcik (2019) identified the potential sources for innovation in library services and also pointed out how they can be helpful for improvement in overall service quality. Researchers assessed the previous literature to evaluate the current status of research in innovative solutions and identify the main sources of library services innovation. The findings of the research indicated that libraries, akin to other institutions, must consistently embrace innovative approaches to enhance the quality of services provided to their users. Moreover, it is emphasized that the key to achieving a competitive advantage over other organizations is predominantly rooted in the strategic development of services that adhere to the principles of the experience economy.

3   Statement of the Problem

Information retrieval is the process of acquiring data from a repository of structured and unstructured sources of information (Ceri et al., 2013). The process includes the extraction and exploration of information from different channels such as search engines, digital libraries, and databases (Singh and Kumar, 2023). The main objective of information retrieval is to search for the most relevant information according to the needs of the users regarding their search terms or queries (Belkin et al., 1982). Moreover, information retrieval in an organization serves as a valuable tool for more effective knowledge management by providing suitable access to relevant information. This will help to enhance decision-making and productivity within the organization (Ashutosh et al., 2023). Online information retrieval skills are vital for library professionals in the current digital information era because they navigate an ever-expanding setting of databases and electronic resources. Library professionals having these information retrieval skills can adeptly harness emerging technologies, employ search strategies, and evaluate the credibility of online sources. Hence, a significant amount of research has been done to examine the online information retrieval skills possessed by library professionals. However, these research studies mainly focused on evaluating the library professional's efficiency in searching techniques and online search (Chan and Lam, 2008, Xie and Joo, 2010).

There has been a scarcity of research endeavors focusing on the self-efficacy concept across various fields, including computer usage(Downey and McMurtrey, 2007), information literacy (Serap Kurbanoglu, 2003), job performance (Sonnentag and Kruel, 2020) and psychology (Kear, 2000). Furthermore, a significant portion of the research has focused on the self-efficacy of library professionals, exploring aspects such as their commitment to their careers (Adio and Popoola, 2010), utilization of automated library systems (Uwaifo, 2010), and knowledge management (Aharony, 2011). Additionally, in Western countries diverse research studies have been conducted to explore how the self-efficacy of library professionals influences their interaction with the system of information retrieval and mainly focusing their self-efficacy or emotional factors (Bronstein, 2014, Bronstein and Tzivian, 2013, Eldakar and Kenawy, 2020, Mohd Suki and Mohd Suki, 2016).

As a result, the current research delves into the vital influence of four factors of online information retrieval self-efficacy of library professionals including mastery experience, vicarious experience, social persuasion, and physiological states on library services innovation. Moreover, understanding these four factors that increase the self-efficacy of library professionals in online information retrieval platforms holds the key to enhancing the efficiency

of library services in the current digital information era. The library services efficiency is no longer solely contingent on the housing of physical collections and their acquisition, rather it mainly depends on the aptitude of library professionals to seamlessly navigate electronic repositories, cutting-edge search methodologies, and digital databases. The findings hold the potential to inform various strategies for organizational policies, training programs, and professional development aimed at enhancing the library professionals' capabilities, eventually fostering an innovative culture within university library services.

The primary factors outlined above serve as the foundational elements for conducting the present research investigation, which seeks to analyze the self-assessed ability of library professionals to retrieve online information as a precursor to fostering innovation in services within university libraries. Due to very few research studies specifically addressing this aspect, there is a compelling necessity to gain insights into and reveal these skills concerning library services innovation as demonstrated by university library professionals.

4   Research objectives and hypotheses

The main aim of this study was to examine the influence of online information retrieval self-efficacy, with a main focus on mastery experience, vicarious experience, social persuasion, and physiological states on the library services innovation among library professionals in a university setting. To fulfill this goal, the research study formulated two hypotheses: (1) how well do the four measures of online information retrieval self-efficacy (mastery experience, vicarious experience, social persuasion, and physiological states) predict better library services innovation? (2) Which factor of the online information retrieval self-efficacy (mastery experience, vicarious experience, social persuasion, and physiological states) is the best predictor of better library services innovation?

5   Research Design

An online survey technique was used to collect data from library professionals working in the HEC recognized universities of both private and public sectors of the capital city of Pakistan (Islamabad) and Punjab. The survey was focused mainly on the four dimensions of self-efficacy information, as outlined by Bandura (1986), social persuasion, vicarious experience, physiological states, and mastery experience. The research instrument for assessing the self-efficacy of library professionals in online information retrieval was adapted from the internet self-perception scale (ISPS) developed by Hinson et al. (2003). This modification resulted in the creation of 25-items research questionnaire referred as the information retrieval self-perception scale (IRSPS). The same survey instrument related to the online information retrieval self-efficacy was used by Bronstein and Tzivian (2013), Eldakar and Kenawy (2020), and Mohd Suki and Mohd Suki (2016) with a Cronbach's α values ranging from 0.73 to 0.87. The respondents used a 5-point Likert scale to rate each item of the survey, ranging from 1 (strongly disagree) to 5 (strongly agree).

Additionally, a survey instrument used to assess the library services innovation was adapted from the study of Torkzadeh and Doll (1999), resulting in a 6-item survey questionnaire referred to as the library services innovation scale. For this study, reference about task innovation was modified to library services innovation.

The validity of the survey instrument was ensured through feedback from a panel of experts in the field of library & information science and also through conducting a pilot study. The reliability of the survey instrument assessed through Cronbach's alpha coefficients, which had satisfactory results of various factors encompassing: mastery experience (n = 12, α = 0.898), vicarious experience (n = 3, α = 0.737), psychological states (n = 6, α = 0.901), social feedback (n = 4, α = 0.927), and library services innovation (n = 6, α = 0.912) (Table I).

A systematic sampling method was employed to ensure the representation across all the population categories, encompassing public and private sector universities. With a total population of 560 individuals, the sample size was 234 which was determined by using the Yamane's formula (n = N/(1+N(e)2).

However, 64 elements of the population were on study leave/switched their job/retired from service. Researchers developed a systematic alphabetical list of the remaining 496 elements of the population. After that, sampling interval (K) was calculated by dividing the total number of available elements in the population by the desired sample size e.g. 496/234= 2.11. Researchers distributed the survey questionnaire to 248 respondents according to the systematic alphabetical list by using diverse methods such as social media tools, mailing, emails, and in-person visits to achieve a wide-range response rate. The researchers gathered 224 fully completed questionnaires, with 10 returned as incomplete or invalid, 14 respondents were contacted again and again but they didn't respond and the remaining 224 underwent systematic sampling for data processing.

6   Reliability Analysis

Researchers conducted a reliability analysis by using Cronbach's α coefficient of all factors to ensure the internal consistency of the research questionnaire. In this regard, Nunnally (1978) highlighted that a coefficient value of 0.70 is an acceptable benchmark for reliability analysis.

Table I shows the Cronbach's alpha reliability values that exceed the minimum value of 0.70. The range spanned from 0.73 to 0.92 for Cronbach's α, encompassing mastery experience (n = 12, α = 0.89), vicarious experience (n = 3, α = 0.73), physiological states (n = 6, α = 0.90), social feedback (n = 4, α = 0.92), and library services innovation (n=6, α = 0.91). These results clearly show the substantial internal reliability and coherence of all the research components.

7   Results

Applied descriptive statistics revealed a notable self-efficacy level of university library professionals concerning their online information retrieval. The results indicate that physiological states (mean = 3.97) exerted the most significant effect on beliefs of self-efficacy, followed by mastery experience (mean = 3.97). On the other hand, social feedback (mean = 3.52), and vicarious experiences (mean = 3.47) show the least contributing factors to these findings (table 1).

Table 1: Cronbach's alpha values, Mean, Standard Deviation, Skewness and Kurtosis

Factors	No. Of Items	Mean	SD	Cronbach's α	Skewness	Kurtosis
Mastery Experience	12	3.97	.65	.89	-1.82	4.59
Vicarious Experiences	03	3.47	.63	.73	-.35	.23
Physiological States	06	3.97	.67	.90	-.86	1.59
Social Persuasion	04	3.52	1.03	.92	-.25	-.83
LS Innovation	06	4.12	.69	.91	-1.11	2.05

Furthermore, table 1 also presents the descriptive statistics for additional examination, especially evaluating the skewness and kurtosis values of the variables. The kurtosis values of all the factors ranged from .23 to 4.59 clearly showing that they are well below ± 10 and comfortably remained within the acceptable range. In addition to this, skewness values spanned from -0.25 to -1.82 falling below the value of ± 2.0 and show negatively skewed distributions.

7.1   Correlation Analysis

The Pearson correlation test was used to examine the relationship between all the constructs of online information retrieval self-efficacy, encompassing social persuasion, mastery experience, physiological states, vicarious experience, and university library services innovation. Before

applying the Pearson correlation and multiple regression tests, all the constructs were computed to generate the overall mean score. The results of the correlations presented in Table 2 clearly show a significant and positive relationship at the level of 0.01 among social persuasion, mastery experience, physiological states, vicarious experience, and university library services innovation of library professionals ranging from 0.23 to 0.49 (n = 224, p<.0005).

Table 2 illustrates that the correlation coefficient findings indicate that physiological states demonstrate a moderate and medium association with library services innovation (r = .49), with social persuasion following closely behind (r = 0.37). Conversely, mastery experience (r = 0.27) and vicarious experience (r = 0.23) exhibit a weak correlation with library services innovation. Lind et al. (2021) emphasized that correlation among different variables can range from -1.00 to +1.00, indicating a perfect positive or negative correlation. Additionally, correlations falling within the range of 0.50 to 1.0 signify a strong relationship, those between 0.30 to 0.49 indicate a moderate relationship, and correlations ranging from 0.1 to 0.29 suggest a

Table 2: Relationship between library services innovation (dependent variable) and four dimensions of online information retrieval self-efficacy (independent variables)

Variables	LS Inov	Mastery	Vicarious	Physiological	Social	P
LS Innovation	1.00					.000
Mastery	.27**	1.00				.000
Vicarious	.23**	.25**	1.00			.000
Physiological	.49**	.28**	.34**	1.00		.000
Social	.37**	.29**	.49**	.46**	1.00	.000

Note: **Correlation is significant at the 0.01 level (two-tailed)

weak relationship between the constructs.

7.2   Multicollinearity, Outliers, Normality, Linearity, Homoscedasticity, Independence of Residuals

Multicollinearity was identified by researchers to examine the variance inflation factors (VIF) exceeding 10 and tolerance values below 0.10. Where, all constructs of independent variables show VIF values ranging from 1.14 to 1.54 which are steadily below the value of 10, and tolerance values ranging from 0.64 to 0.87, surpassing the 0.10 threshold. These values clearly show the absence of multicollinearity.

Outliers were also identified through examining the scatter plot shown in Figure 1. Tabachnick and Fidell (2001) define that outliers are the cases in the scatter plot whose values fall below 3.3 or exceed 3.3. Furthermore, if few outliers are present then researchers do not need to immediate action. Figure 1 shows the normal probability plot, indicating a straight linear trend. Moreover, scatter plots also support the adequacy of the model, as they show scores uniformly arranged in the center and minimal deviations from the probable pattern.

7.3   Evaluating each of the independent variables

The multiple linear regression test was employed to evaluate the influence of online information retrieval self-efficacy by library professionals for the innovation in services of university libraries. The four sources of online information retrieval self-efficacy by the library professionals were designated as the independent variables, while library services innovation served as the dependent variable. The results presented in Table 3 clearly show a correlation model R-squared (R2) for the library services innovation, which was determined to be 0.28. This value shows that 28.4% of the variation in the dependent variable was explained by the independent variables.

In addition to this, a value of Durbin-Watson was also utilized by the researchers to evaluate the potential existence of autocorrelation in the adjacent error terms. This value consistently ranges from 0 to 4, with values between 0 and less than 2 clearly show a tendency toward a positive relationship. In the current study, the Durbin-Watson value was 1.98,

signaling the presence of non-independence among the errors. Moreover, F value (F=21.66, p < 0.001) was also observed which clearly suggests that the outcomes of the regression model were unlikely to be attributed to chance. Consequently, the goodness-of-fit of the statistical model was deemed suitable.

Results of multiple linear regressions shown in Table 3, where values of unstandardized beta coefficients (β) connected with the dependent variable, library services innovation ranging from -.01 to .40. The values of unstandardized beta coefficients (β) are as follows: 1.69 (library services innovation after retrieval of online information), .40 (physiological states), .12 (mastery experience), .11 (Social Feedback) and -.01 (vicarious experience).

Researchers utilized the values of standardized coefficients to examine the influence on the dependent variable by the independent variables. In Table 3, the most significant coefficient value is .39 for physiological states, indicating the most influencing factor of library services innovation when accounting for the variance explained by all other variables in the model. Furthermore, slightly lower beta values were observed including .16 (Social persuasion) and .13 (mastery experience) suggesting relatively lesser distinct contributions. However, the vicarious experience beta value of -.01 does not demonstrate a significant contribution to influencing innovation in library services. The findings show that mastery experience, social persuasion, and physiological states hold the most significant and distinctive importance in influencing library services innovation. However, vicarious experience does not influence the library services innovation.

Additionally, these outcomes provide insights into addressing the hypotheses posed within the study. The proposed model encompassing social persuasion, vicarious experience, mastery experience, and physiological states explained 28.4% of the observed variance in library services innovation from university library professionals. Among all these variables, physiological states ($\beta 1 = 0.391$) emerge as the most unique influential contributor. Furthermore, social persuasion ($\beta 1 = 0.164$), and mastery experience ($\beta 1 = 0.134$) significantly impact the university library services innovation. However, vicarious experience ($\beta 1 = -.013$) does not appear to significantly influence the university libraries services innovation.

Table 3. Summary of regression results

	Unstandardized Coefficients		Standardized Coefficients			Co linearity statistics	
	B	Std. Error	B	T	Sig.	Tolerance	VIF
Constant	1.693	.326		5.188	.000		
Mastery	.122	.065	.134	2.011	.049	.876	1.141
Vicarious	-.015	.073	-.013	-.202	.840	.734	1.362
Physiological	.405	.069	.391	5.902	.000	.744	1.345
Social	.110	.048	.164	2.309	.022	.648	1.542
R2	.284						

F	21.66 4
p-value	.000
Durbin-Watson	1.985

Figure 1
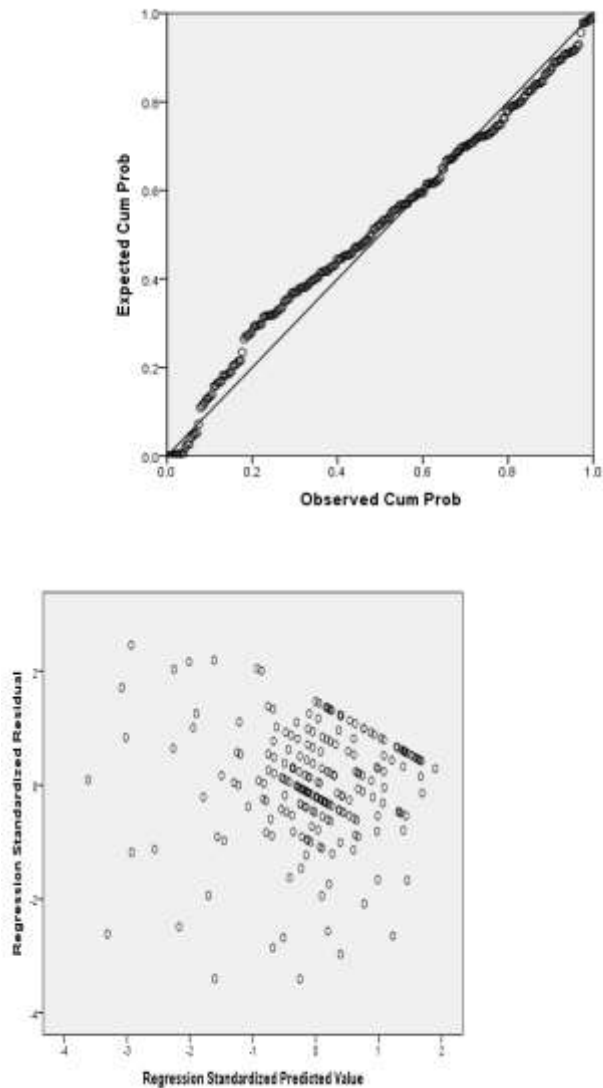
8   Discussion

The descriptive analysis of the study indicates the strong self-efficacy beliefs of library professionals in the domain of online information retrieval. Furthermore, library professionals have more confidence in navigating the digital and electronic resources that would enable them to conduct effective and efficient online information searches for library services innovation. The heightened self-efficacy beliefs by the library professionals contribute to more innovations in library services. The findings matched with the outcomes of Bronstein and Tzivian (2013), who similarly found healthy self-efficacy beliefs among library professionals in terms of their searching and retrieving capabilities.

The findings emphasized that self-efficacy perception among library professionals was mainly influenced by the mastery experience, physiological states, vicarious experience, and

social feedback contributing to a certain extent. These findings are supported by various other studies in which mastery experience or personal self-evaluation indicate the major role in shaping the outcomes of self-efficacy as described by Ren (1999) among managers of various government organizations. Furthermore, these results are consistent with the findings of Chan and Lam (2008) and Bronstein and Tzivian (2013) where vicarious experience did not make a significant and unique contribution to improve the library professionals' self-efficacy beliefs. Bronstein (2014) revealed that mastery experience is the main factor that can enhance the confidence of a person in their task completion abilities. On the other hand, the results are different from the findings of Pajares et al. (2007) where vicarious experience played a main and significant role to enhance the individual's self-efficacy outcomes in terms of their searching skills.

The researchers also explored how different sources of self-efficacy encompassing, vicarious experience, mastery experience, physiological states, and social persuasion influence the library services innovation. The findings of the study derived from multiple linear regressions highlight that mastery experience significantly affects library services innovation ($p < 0.05$). These findings are aligned with the studies of Mohd Suki and Mohd Suki (2016) and Bronstein and Tzivian (2013) who emphasized the substantial influence of personal self-evaluation on researchers' emotions followed by the retrieval of online information. In the same way, Monoi et al. (2005) highlight the self-efficacy beliefs of algebra students in terms of their online information searching skills. Additionally, Phan (2012) also examined the relationship between self-efficacy beliefs of elementary school students and their academic achievements.

In addition to this, the findings are aligned with the findings of Uwaifo (2010) who found self-efficacy beliefs in computers by library professionals support their daily routine tasks of providing innovation in their library services. Moreover, Bechwati and Xia (2003) exposed that individuals having positive emotions such as joy were very successful in online information retrieval.

Another noteworthy result indicates that vicarious experiences did not stand out as a significant predictor of library services innovation followed by online information retrieval by library professionals. These findings aligned with the results of Usher and Pajares (2009), Morris and Usher (2011), and Mohd Suki and Mohd Suki (2016) where vicarious experiences did not play an influencing role in the success or failure of an individual's tasks.

Moreover, findings also show that the physiological state of library professionals plays an important role in predicting library services innovation. It suggests that library professionals feel pleasure and heightened energy levels during searching and retrieving online information from electronic and digital resources. These results matched the outcomes of Mohd Suki and Mohd Suki (2016), who revealed that physiological states play an important role to influence the emotions of library patrons. However, Flavián-Blanco et al. (2011) examined that positive feelings of a person did not influence the retrieval of online information.

The multiple linear regression analysis also reveals a significant influence of social persuasion on the overall library services innovation. Particularly noteworthy is that family and friends perceive that library professionals are experts in searching and retrieving information according to the user' needs. They also play an effective role in innovating library services and providing assistance to library users through effective information searching and retrieval. Moreover, adverse social persuasion from family members and colleagues has been shown a negative influence in various situations (Basu et al., 2009). The findings of the study matched with the outcomes of Downey and McMurtrey (2007), who explored that social persuasion from various sources encompassing, supervisors, family members, and peers is important for enhancing individual performance.

Table 3 reveals that the most important substantial beta coefficient is physiological states with a value of 0.39, signifying the major contribution to influence the library services innovation when considering the variance explained by all other variables in the model. Furthermore, slightly lower beta values are observed including .16 (Social persuasion), and .13

(mastery experience) suggesting relatively lesser distinct contributions. However, vicarious experiences with a beta value of (-.013) does not demonstrate a significant contribution to influencing the innovation in library services. The findings show that mastery experience, social persuasion, and physiological states hold the most significant and distinctive importance in influencing library services innovation. However, vicarious experiences do not influence the library services innovation.

While making a worthless contribution to the previous literature, the current study acknowledged various limitations. The study mainly relied on self-perception of self-efficacy reported by university library professionals regarding their online information retrieval, introducing the possibility of disparities between beliefs and actual behaviors. Furthermore, the research study may be controlled by the composition and size of the sample. If the sample size is not representative of the broader population of university library professionals, then the generalizability of the findings to other contexts may be limited. Moreover, the research study may not account for all the relevant contextual factors that could influence the correlation between online information retrieval self-efficacy and library services innovation. Various external factors, encompassing organizational policies or technological changes could influence the observed correlations. The findings may be time sensitive and information retrieval practices and also subject to changes in technology. As well as technological advancement is continues, the relevance of the study findings may diminish over time.

In the future, researchers might explore innovative approaches, such as employing multiple linear regression analysis and integrating different factors to examine the structural correlations between measured variables and underlying constructs. This could involve delving into individual characteristics and assessing the library services innovation about library professionals' online information retrieval practices.

9   Conclusions

The current study has delved into the influence of online information retrieval self-efficacy on library services innovation among university library professionals. In addition to this, results contribute worthless insights and provide a fresh perspective to the current body of literature, delving into an aspect that has mainly been unexplored within the Pakistani context. In essence, the examination of online information retrieval self-efficacy as a predictor of library services innovation underscores the complex correlation between technological competence, individual beliefs, and the delivery of innovative services within the university library. As library professionals continue to evolve in the current digital environment, the current research study provides a foundation for fostering an innovative and proactive library environment that aligns with the increasing needs of library patrons.

Various previous studies indicate that mastery experience plays an important role in enhancing the professional's confidence and competence in efficiently retrieving online information. Proficiency in navigating digital databases and providing assistance to information seekers' endeavors not only introduces innovative ways in library services but also fosters higher satisfaction among library patrons. In addition to this, the influence of physiological states and social persuasion in predicting library services innovation by library professionals underscores the interpersonal dimension of self-efficacy. Moreover, university library professionals perceived to be adept in online information retrieval by family members, friends, and colleagues also play an important role in facilitating efficient access to information and innovation in all the services provided by a library. This social persuasion significantly influences the overall library services innovation. The influence of physiological states including energy and pleasure taken from the process of online information retrieval, introduces another way of library services innovation. While vicarious experience did not appear as a significant predictor of innovation in library services.

In essence, the current research sheds light on the significant influence of online information retrieval self-efficacy beliefs in innovative practices within university library services. In university libraries, library professionals act as the custodians of knowledge,

bridging the gap between traditional scholarly resources and the digital landscape. Moreover, competency of library professionals adeptly evaluates the different information resources, navigate the online digital platforms, and various search strategies that influence the quality and relevance of information resources provided to researchers, faculty, and students.

As university libraries continue to transform, in response to changing technological advancements and library users' expectations, the synergy between online information retrieval self-efficacy and innovation in library services becomes a focal point for strategic planning and professional development of library offerings. Eventually, the findings anticipated a significant contribution to the development of targeted strategies and enhancing library professionals' competency. Moreover, outcomes also inform the institutional policies and framework that foster an environment to be helpful for continuous innovation within the university library. In the current digital academic information environment where the digital landscape continues to redefine the contours of knowledge dissemination, understanding the influence of online information retrieval self-efficacy on the innovation of university library services becomes very pivotal for the relevance of library services and continual evaluation.

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