Effect of Digital Literacy Skills on Work Performance and Creativity: A Case of College Librarians in Punjab, Pakistan

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Abstract

This study aimed to examine the effect of digital literacy skills on work performance and creativity among the college librarians in Punjab, Pakistan. It also explored how information skills, digital transformation, and digital tools influence task performance, contextual performance, counterproductive work behavior, and creativity. A quantitative research design was adopted using a structured questionnaire. A total of 222 questionnaire were distributed, out of which 214 were fully completed and returned, achieving a 96% response rate. Descriptive and inferential statistical methods were used to analyze the collected data. The findings revealed significant and strong correlation between the digital literacy skills, work performance and creativity. This shows that higher level of digital literacy skills enhance the work performance and creativity of college librarians. Furthermore, findings of the simple linear regression test is also supported and indicating that digital literacy skills have predicts the creativity and work performance. The findings of the study highlights the need of various training programs related to digital literacy skills to increase the efficiency of librarians. Moreover, integration of these skills into various professional development programs can enhance the creativity and work performance in the modern digital environment. This study incorporated framework that interrelate the digital literacy skills with work performance and creativity, an area with rarely explored in the context of college librarians. It also provides evidence regarding the important role of digital competencies in increasing the innovation, ethical practices and efficiency in various library services.

Keywords

Digital Literacy Skills; Work Performance; Creativity; College Librarians; Digital Transformation; Information Skills; Digital Tools; Library Professionals; Pakistan.

Introduction

The addition of digital technologies into professional domain has changed the workplace environment, especially in the academic institutions (Trenerry et al., 2021). In the current digital information environment, libraries have changed their role from traditional repositories of books to becoming dynamic information hubs that provide digital access to variety of information resources (Gul & Bano, 2019). As a result, the role of library professionals has evolved significantly demanding higher levels of digital literacy skills. The ability to evaluate, search, access, and use digital tools has become a very necessary skill for the librarians to enhance their work performance and also foster their creativity in their professional's tasks (Anyim, 2018). It also enables them to curate, navigate and disseminate the information effectively in a technology-driven environment (Meesad & Mingkhwan, 2024). For college librarians, digital literacy skills are no longer to just an asset, it is also a core competency that directly affect their ability to meet the users' needs whether they are researchers, students and/or faculty members (Martzoukou, 2021).

Furthermore, college librarians are often at the forefront of guiding the students and educators during searching and accessing of authentic digital resources, teaching information literacy, and promote lifelong learning. Without these skills, they may struggle to meet the demand of users as well as fulfill these responsibilities (Schoppert, 2020). In the region of Punjab, where educational institutions present a mix of modern and traditional infrastructure, the necessity for digital literacy skills among college librarians are even more essential. The integration of digital tools into the library services is becoming more crucial for bridging the gap between extensive online and physical information resources. Digital literacy skills empowers the college librarians to enhance the users experience, streamline the library operations, and as well as stay relevant in an increasingly digital educational landscape (Singha & Das, 2021).

Moreover, work performance is another important factor that significantly contribute in the development to librarians. Work performance of librarians are highly important as it includes

different responsibilities, such as user support, information literacy instructions, and resources management to increase the services of a library (Withorn et al., 2021). Effective performance requires interpersonal skills and technical expertise to meet the users' needs. Furthermore, assessment of librarians work performance are often considered an efficiently management of resources, user satisfaction and library services innovation. In the context of college librarians, effective performance also includes enhancing a culture of collaboration and supporting the researchers in their research needs (Matthews, 2011). In essence, librarians work performance is a cornerstone of academic excellence, directly effecting the research outcomes and education. By excelling in their roles, librarians also contribute to the development of well-informed educational society by preparing the students for on-going and up-coming challenges of today's technology driven world.

Creativity defined as "the ability to generate innovative solutions and adapt to changing circumstances" (Adams, 2005, p. 6). College librarians must continually innovate the library services, engage users and also adapt the technological advancements (Schoppert, 2020). DLS is very important for creativity because it enable the librarians to discover new ways for information dissemination (Hallam et al., 2018). In current situation, creativity also consist of various skills which also enable the librarians to develop various advanced solutions and merge the latest technologies into their daily routine work. Therefore, it is very important to examine the effect of digital literacy skills on the creativity and work performance of college librarians.

Problem Statement

The beginning of digital age has positively and significantly changed the field of library and information science, requiring a reconsideration of traditional roles and competencies of information professionals (Friedman & Deek, 2003). In the fast changing world, the role of library professionals has changed beyond their traditional duties. Now they need to learn new skills to work effectively in the current modern informtion enviornment (Gorman, 2000). DLS includes the ability to search, access, evaluate and use this information with the help of digital technologies. They have become a key part of the daily work of library professionals (Jaeger et al., 2012). Librarians are the major stakeholder in the field of education. In Punjab, where the sectors of education faced different challenges, including limited access to resources, technology

infrastructure, and funds. In this situation, the importance of DLS has been enhanced for librarians in increasing their creativity and work performance.

The selection of Punjab for this study is very important because it is the most populous province of Pakistan. Punjab also has a large number of colleges having different levels of technological development. It is necessary that how DLS affect the work performance and creativity of college librarians. These skills are very important for enhancing their professional efficiency. On the other hand, there is a knowledge gap in the previous research that examined the effect of DLS on the work performance and creativity among the college librarians in Punjab, Pakistan.

Research Objectives

This research intends to:

1. assess the perceived level of digital literacy skills of currently working librarians in public sector colleges in Punjab, Pakistan,
2. determine their perceived level of work performance,
3. determine their perception towards their creativity, and
4. Examine the effect of digital literacy skills on their creativity and work performance

Theoretical Background

The current study examines the effect of DLS on the work performance and creativity of college librarians in Punjab. DLS were measured with the help of scale developed by Kaeophanuek et al. (2018). This scale covers three dimensions including information skills, transformation skills and digital tools usage. Together, these dimensions explain the librarians' skills to search, access, manage, evaluate, and effectively use these digital resources for their professional tasks. Work performance was examined through the scale of Koopmans et al. (2014), which covers three essential aspects such as task performance, contextual performance and counterproductive work behavior. This framework provides a comprehensive understanding of how librarians execute their responsibilities, collaboration with others, avoid negative behavior that may hinder the effectiveness of an organization.

Creativity was measured by using the items developed by Zhou and George (2001), focusing on the capacity of librarians to generate new ideas, adopt innovative solutions, and also

support creativity in professional settings. Together, these theoretical foundations provide a multidimensional perspective, linking digital literacy skills with work performance outcomes and creativity, and also highlights the important role of individual competencies in the digital era.

Review of Literature and Hypotheses Development

Digital Literacy Skills among Librarians

Many studies have emphasized the need for professionals' development opportunities and also highlighting the targeted digital literacy is necessary for increasing the effectiveness of the library professionals in the current digital environment. In a study by Rafi et al. (2019), researchers indicated that digital literacy skills for librarians involved a unique blend of information, media and various technology literacies allowing them to serve as knowledge educators in the digital age. Various others studies showed that essential competencies such as online content management, data analytics and an ability to evaluate the digital resources critically had become very essential skills for librarians to cope with the challenges of this ever-changing information landscape. Furthermore, Isiaka et al. (2024) explored that how digital literacy skills among libraries enabled them to proactively respond the challenges, encompassing online misinformation, digital privacy, and artificial intelligence concerns.

In another study, Diseiye et al. (2023) presented the same findings and concluded that how digital literacy equipped the library professionals needed to direct an increasingly complex digital environment, data analytics, leverage artificial intelligence and how to evaluate the online information resources. Mokhtar et al. (2022) stated that in the current digital information environment it was very necessary for everyone to access the up-to-date information. Mulat and Natarajan (2020) found that university library professionals possessed digital literacy skills included internet browsing, mobile phone application, use of electronic mail and social networking platforms. Furthermore, study also discovered that library professionals primarily learnt the digital literacy skills through formal education, others online resources such as You Tube and workshops. In another study, Nikou et al. (2022) investigated in their study that both digital literacy and information literacy significantly affected the perceived ease of technology use by further revealing that digital and information literacy indirectly influenced the intention to use digital technologies in the workplace.

Work Performance of Librarians

Borman and Motowidlo (1997) distinguished two different types of work performance contextual performance and job performance. Task performance including the essential activities for maintaining the technical aspects of an organization such as planning and supervision. Contextual performance refers to those behaviors of individuals which help the organization, its social setup, and psychological environment. These behaviors create support for the technical core of the organization to function properly (Koopmans et al., 2014, p. 35). Many studies identified several factors that affected the job performance of librarians . For instance, Igbinovia and Popoola (2016) argued in their study that academic libraries in Nigeria had witnessed a reduction in user patronage due to poor services provided by library professionals, which they attribute to poor job performance. Also, this perspective supported by Amusa et al. (2013) who found that the work performance of library professionals was merely satisfactory.

In another study, Green (2022) emphasized that the current role of librarians have extended beyond old tasks such as managing physical resources and cataloging. This is also matched with the study of Deja et al. (2021) which underscored the expectation growing for librarians to not only manage the digital repositories but also actively contribute to institutional learning outcomes through the instruction of information literacy instructions. According to the study of Simms and Paschke-Wood (2022), performance has become very vital metric for examining the librarians' success in supporting the academic achievements. In his study, Rafique et al. (2022) conducted a study to examine the work performance self-efficacy of university librarians. The results show that university librarians remain focused on their work goals and manage deadlines effectively through time management and planning. They also update their knowledge and skills by engaging in professional gathering and meeting, while maintaining a positive attitude by avoiding harmful or negative sharing about their institutions.

Furthermore, Tait et al. (2016) examined that the librarians having high performance are those who can quickly incorporate with new tools such as artificial intelligence driven discovery platforms, learning management system into their workflows to enhance student research experiences. Ogbomo (2024) explored that different organizational factors significantly affect

the university librarians' job performance. Furthermore, university librarians job performance was very high, suggesting these factors such as, availability of technology, leadership style, professional development opportunities and work environment are being effectively implemented. On the other hand, Aman (2010) focused on the external pressures faced by the college librarians, such as administrative expectations and budget constraints, which directly affected the work performance of college librarians. In another study, Igbinovia and Popoola (2016) explored the influence of organizational culture and workplace environment on the work performance of college librarians suggesting that access to professional development and supportive leadership significantly contribute to the higher levels of job satisfaction and better work performance.

Creativity among Library Professionals

Falciani-White (2024) examined that how academic librarians perceive their work environment regarding management practices, organizational motivation, resources and outcomes. The findings revealed that librarians ranked at or below the median across all four categories, indicating limited support for creative work. The researcher also suggested that where academic libraries possess certain strengths, their work environment generally fall short in supporting the creativity. For instance, Oraekwe (2023) examined the creativity levels of university library professionals, mainly focusing on the effect of organizational climate on their creative processes. Likewise, Nwangwu et al. (2021) examined the relationship between the organizational perceptions of climate and creativity among the librarians. The results showed low level of organizational perception, however their creativity level were very high among the librarians. These results suggested that helpful organizational climate may enhance the creativity of librarians. A study conducted by Rafique et al. (2025b), examined the effect of AI literacy on task performance and also highlight the creativity as a mediating variable. Findings shows that AI literacy affect the creativity as well as task performance. Likewise, Rafique et al. (2025a) also measured the level of AI literacy and innovative behavior of medical head librarians in Pakistan. Findings showed that they have high levels of both innovative behavior and AI literacy.

Digital Literacy Skills, Work Performance, and Creativity

Eshet (2004) examined in his study that digital literacy skills enabled the librarians to direct digital landscape efficiently, optimizing both creativity and work performance within a library setting. Such as, Deja et al. (2021) indicated that librarians with higher level of digital literacy could handle the digital information system more effectively, which enhanced their productivity and user satisfaction. Moreover, digital literacy skills are necessary to fostering creativity, as library professionals rely on technology to introduce innovation in daily library services (Ylipulli et al., 2023).

Furthermore, Agbro and Agbro (2024) evaluated that enhancement in electronic mailing skills was likely to enhance the job performance of librarians in state and federal institutions in South Nigeria. Ashiq et al. (2021) reveals in his study a notable challenges facing by the college librarians such as insufficient professional development, lack of institutional support and limited access to digital tools. These different factors hinder the creative and productive potential of librarians, and also limited their digital skills to fully engage with the various electronic resources. Previous research in the existing literature has explored the link between digital literacy skills and various aspects of work performance and creativity. However, no study has comprehensively examined the relationship of digital literacy skills with college librarians work performance and creativity. Based on this gap, the research proposes the following hypothesis.

H_1 – Digital literacy skills positively and significantly affected the work performance of college librarians in Punjab, Pakistan.

H_2 – Digital literacy skills positively and significantly affected the creativity of college librarians in Punjab, Pakistan.

Research Methodology and Procedure

A quantitative research design by using a cross-sectional survey was adopted in this study as it is an effective approach in reaching geographically dispersed populations (Creswell, 2012).

Population, Sampling, and Sampling Size

The target population for the current study encompassed all the college librarians currently working under Higher Education Department (HED), Punjab, Pakistan. An initial survey identified that almost 500 librarians were currently working in these colleges. A sample

of 222 college librarians was calculated by using Yamane's (1967) formula. In this study, the researchers used a simple random sampling technique based on the table of Krejcie and Morgan (1970). This method made sure that every librarian in the population had an equal and independent chance to be included in the sample.

Research Measures

It is recommended to adopt the measures from already developed and validated scales; therefore, this study preferred already developed and validated scales to measure the study variables as detailed below. The research questionnaire was distributed to the selected respondents to collect the required data. To assess the impact of digital literacy skills on the college librarian's work performance and creativity, respondents respond a series of items presented on a 5-point Likert scale. The response options for this scales ranged from 1 (strongly disagree) to 5 (strongly agree).

Digital Literacy Skills

The perceived digital literacy skills of college librarians were measured by adopting the scale of Kaeophanuek et al. (2018) having three dimensions i- Information Skills (14 items), ii- Digital Tools Usage (13 items), iii- Digital Transformation (10 items).

Work Performance

The second key construct of this study is work performance which was measured using 24-item scale adopted from (Koopmans et al., 2014). This scale is consisted on three dimensions i. Task performance (6 items) ii. Contextual performance (13) iii. Counter-productive work behavior (5).

Creativity

The third key construct of the study is creativity which was assessed through 13 items scale of Zhou and George (2001).

Reliability of the Measures

The research instrument's reliability was assessed using Cronbach's Alpha (α) to ensure that items within the dimensions were internally reliable. In the current research study, α value for overall DLS was 0.994 which was within the acceptable threshold proposed by Hair et al.

(2019). The dimension-wise detail of reliability is: for informational skills, CA was .939; for skills in digital transformation, CA was .911; and for skills in digital tools usage, CA was .934.

For overall work performance, CA value was .995 and their sub-dimensions such as task performance, CA was .865, contextual performance, CA was .937 and counter- productive work, CA value was .825. Furthermore, CA value for creativity, it was .933 (Table 2).

Data Collection and Analysis

The researchers used Google forms to distribute the survey link via email, Facebook and what's app. The researcher also received support from colleagues at various colleges to assist with the data collection process. A total of 222 questionnaires were distributed to librarians' working in the colleges of Punjab, Pakistan. Of these, 214 questionnaires were returned back; of these 8 questionnaires were discarded due to incomplete responses. This resulted in a response rate of 96%.

The collected data were analyzed with the help of Statistical Package for Social Sciences (SPSS) version 21. Both descriptive and inferential statistics methods were used for this purpose. In particular, regression analysis was applied to check the effect of digital literacy skills on work performance and creativity.

Results

Demographics

The demographic information of the research participants is presented in Table 1. The results indicated that most of the respondents were working as librarians (99.5%), with only one serving as a senior librarian. This shows that the college libraries under HED, Punjab are primarily managed by librarians rather than senior professionals. The age distribution indicates that the majority (52.8%) fall within the 20-30 years category, suggesting that younger professionals are actively joining the field. Another significant proportion (45.3%) belongs to the 31-40 years age group, while very few participants are in the higher age brackets. This reflects a relatively young and changing workforce that is likely to bring new perspectives and energy to the profession.

In terms of job experience, more than half of the respondents (54.7%) have up to five years of experience, while 39.3% possess six to ten years, indicating a developing pool of

professionals with moderate expertise. Very few librarians have extensive experience of over fifteen years, which may reflect limited career advancement opportunities in the sector. Regarding academic qualifications, the majority hold a Master degree (51.9%), followed by M.Phil. (33.2%), and small percentage with BLIS (13.6%) or pursuing a Ph.D. (1.4%). This distribution suggests that higher education, particularly a Master degree in Library and Information Sciences, remains the standard qualification, whereas advanced research degree like Ph.D. are rare in this professional group.

Table 1: Demographic Profile of the Respondents (n=214)

Categories	Sub-Categories	Frequency	Percentage
Designation	Senior Librarian	1	0.5
	Librarian	213	99.5
Age Group	20 to 30 years	113	52.8
	31 to 40 years	97	45.3
	41 to 50 years	2	0.9
	Above 50	2	0.9
Experience	Up to 5 Years	117	54.7
	6 to 10 Years	84	39.3
	11 to 15 Years	11	5.1
	16 to 20 Years	0	0.0
	More than 25	2	0.9
Qualification	MLIS/MA (IM)	111	51.9
	BLIS/BS (IM)	29	13.6
	M.Phil.	71	33.2
	PhD	3	1.4

RO1-3 – Perceived Digital Literacy Skills, Work Performance, and Creativity

The descriptive statistics showed a higher cumulative mean and standard deviation for all the study variables. This indicates that the respondents possessed a high level of digital literacy skills and felt confident and competent in performing digital tasks (M = 2.89, SD = .612). Most of the participants agreed on various aspects of their dimensions also, for instance information skills (M = 2.91, SD = .621), digital transformational skills (M = 2.91, SD = .611) and digital tools skills (M = 2.85, SD= .616).

For overall work performance (M = 2.91, SD = .646) and their sub factors such as contextual performance (M = 2.90, SD = .625), contextual performance (M = 2.90, SD = .625), counter work behavior (M = 2.90, SD = .656) and for creativity (M = 2.90, SD = .606) (Table 2).

Normality Tests

Table 2 shows the results of the normality tests, showing that the data distribution for the constructs used in this study is normal. A visual examination of the histograms displayed bell-shaped curves, which further supported this assumption. The standard deviation values for each construct were found to be within the acceptable range of ±1. Moreover, skewness values remained within ±1, and kurtosis values were within ±3.

Table 2: Descriptive Statistics

Factors	No. of Items	Mean	SD	Cronbach's α	Skewness	Kurtosis
Information Skills	14	2.91	.621	.939	-1.401	2.528
Digital Transformation	10	2.91	.611	.911	-1.435	2.787
Digital Tools	13	2.85	.616	.934	-1.076	1.988
Overall Digital Literacy Skills	*37*	*2.89*	*.612*	*.994*	*-1.324*	*2.522*
Task Performance	06	2.94	.664	.865	-1.433	2.120
Contextual Performance	13	2.90	.625	.937	-1.425	2.558
Counter Work Behaviour	04	2.90	.656	.825	-1.249	1.815
Overall Work Performance	*23*	*2.91*	*.646*	*.995*	*-1.390*	*2.209*
Overall Creativity	13	2.90	.606	.933	-1.354	2.742

Relationship Matrix

The Pearson correlation coefficients indicate a positive, strong, and statistically significant relationship among all measured constructs in Table 3. Information skills (IS) showed a very strong positive correlations with all other variables, including Digital Literacy Skills (DLS) ($r = .997^{**}$), work performance (WP) ($r = .994^{**}$), and contextual performance (CP) ($r = .993^{**}$), suggesting a critical role of information competence in performance outcomes.

Digital transformation (DT) and digital tools (DT) also shows high correlation values with IS ($r = .994$ and $r = .979^{**}$, respectively), as well as with each other ($r = .971^{**}$), reflecting their interdependence in digital proficiency. Task performance (TP) shows strong correlations with IS ($r = .989^{**}$), DT ($r = .981^{**}$), and DLS ($r = .981^{**}$), and also underlining the importance of informational and digital abilities in task completion. Counterproductive work behavior (CWB) correlates inversely in attention but still strong aligns (e.g., $r = .989^{**}$ with TP), suggesting interconnected behavioral influences. Creativity (C) also shows strong correlation with IS ($r = .988^{**}$), DT ($r = .988^{**}$), and DLS ($r = .988^{**}$), reinforcing the notion that digital and

information skills foster innovative capacity. Finally, work performance (WP) holds the highest correlations with TP (r=.996**), CWB (r=.996**), and DLS (r=.992**), indicating that these dimensions are highly predictive of overall librarians' performance. Overall, these results confirm that all constructs are strongly correlated, particularly highlighting the influence of digital literacy, information skills and digital transformation competencies on work performance and behavioral outcomes.

Table 3: Relationship Matrix

Main Constructs	M	SD	IS	DT	DT	TP	CP	CP	C	DLS	WP
Information Skills	2.91	.621	1								
Digital Transformation	2.91	.611	.994**	1							
Digital Tools	2.85	.616	.979**	.971**	1						
Task Performance	2.94	.664	.989**	.981**	.955**	1					
Contextual Performance	2.90	.625	.993**	.995**	.974**	.984**	1				
Counter Productive	2.90	.656	.987**	.976**	.979**	.989**	.986**	1			
Creativity	2.90	.606	.988**	.988**	.968**	.965**	.974**	.957**	1		
Digital Literacy Skills	2.89	.612	.997**	.994**	.989**	.981**	.993**	.987**	.988**	1	
Work Performance	2.91	.646	.994**	.988**	.974**	.996**	.994**	.996**	.970**	.992**	1

RO4 – Impact of Digital Literacy Skills on Work Performance and Creativity

To examine the effect of digital literacy skills on work performance, a simple linear regression analysis was applied. The findings shows that digital literacy skills accounted 98.3% (R^2 = .983) of the variance in work performance. Furthermore, the regression model significantly predicted the work performance (p = .000 < .05), confirming the strong relationship among the two variables. The regression analysis results (β = .992, t = 111.648, p = .000) further indicated that digital literacy skills had a significant effect on the work performance of college librarian's (Table 4). The path coefficient value (β = .992) shows that digital literacy skills contributed 99% to the prediction of work performance. These results emphasize a positive relationship between digital literacy skills and work performance suggesting that as the level of digital literacy skills in college librarians increases, their work performance also improves accordingly.

As far as, the impact of digital literacy skills on creativity is concerned, the findings shows that digital literacy skills accounted 97.5% (R^2 = .975) of the variance in creativity. Furthermore, the regression model significantly predicted the creativity (p = .000 < .05), confirming the strong relationship among the two variables. The regression analysis results ($β$ = .988, t = 91.301, p = .000) further indicated that digital literacy skills had a significant effect on creativity of college librarian's (Table 4). The path coefficient value ($β$ = .988) shows that digital literacy skills contributed 98% to the prediction of creativity. These results emphasize a positive relationship between digital literacy skills and creativity suggesting that as the level of digital literacy skills in college librarians increases, their creativity also improves accordingly.

Table 4: Impact of Digital Literacy Skills on Work Performance and Creativity

Variable	Unstandardized Coefficients		Standardized Coefficients	t	p-value	R^2
	B	SE	B			
(Constant)	-.107	.028		-3.856	.000	
Digital Literacy Skills → *Work Performance*	1.045	.009	.992	111.648	.000	.983
(Constant)	.075	.032		2.379	.018	
Digital Literacy Skills → *Creativity*	.978	.011	.988	91.301	.000	.975

Note: = Dependent variable: *Work Performance and Creativity*

Discussion

The findings of the study, emphasizing the significant role of digital literacy skills among college librarians in contributing their work performance and creativity. The study also highlights the key digital literacy skills such as informational skills, transformational skills and also proficiency in using the digital tools. To check the relationship between the variables, a Pearson Product Moment correlation test was applied.

The findings highlights that college librarians rated themselves in level of DLS in three main dimensions such as digital tool, informational skills, and transformation skills. The strong rating underscores that college librarians understand the importance of DLS in enhancing their creativity and work performance. The findings align with the study of Diseiye et al. (2023) who found the important role of DLS in enhancing librarains self-sufficiency. These findings are also consistent with previous research conducted by Nikou et al. (2022) who explored that how

digital and information literacy shape the employees, perceptions of digital technology adoption in the workplace. These findings also confirm the study of Widana (2020) who examined how digital literacy influences teachers ability to design higher order thinking skills based assessment.

The findings further reveal that college librarians perform their tasks actively and effectively engage in teamwork, problem-solving, and professional development. Counterproductive behaviors were minimal. Overall, they need to stay updated with emerging trends, collaboration, and maintain a positive workplace attitude. The results are consistent with the study of Mughari et al. (2024) who found that AI literacy had a significant and positive affect on work performance. This means that when medical head librarians' improved their AI literacy improved, their work performance also increased. In another study, Salju et al. (2023) found that IT training, digital infrastructure positively impact the employees' performance, while management support had a lesser effect. Furthermore, college librarians in Punjab shows a moderate level of creativity, particularly in generating ideas and adopting innovative methods. They are open to creative thinking, risk-taking, and problem solving but require more support for structured implementations. Technological advancement is recognized as important for improvement. These results align with Oraekwe (2023), who found a positive link between creativity and organizational climate, and with Madukoma et al. (2021), who highlighted librarians' use of online tools and research services. On the other hand, outdated technology and lack of administrative support remain key barriers.

The results revealed a statistically significant positive correlation among these variables, confirming that the observed connection is expressive rather than the accidental. Furthermore, key insight form these findings is that academic successes strongly connected to digital literacy skills. In today digital age, college librarians rely on online resources for information searching and retrieval. Librarians with advanced digital skills can effectively analyze and synthesize online sources, enhancing their learning abilities.

The study highlights the important role of digital literacy in fostering work performance and creativity. Prioritizing digital literacy skills will enable the librarians to prepare themselves for the demands of the digital age. The results of the current study matched with the study of Naz et al. (2022) found that university students in Lahore with strong digital literacy sills performed

better academically then their less proficient peers. The study also revealed that female students had higher digital competence and emphasized the importance of digital literacy training, especially in using library resources for academic success. Furthermore, Supriyadi and Juwita (2023) found that digital literacy skills significantly and positively affect the creativity in early childhood, especially when linked with the effective parenting. The findings support this study by reinforcing the positive ink between digital literacy skills and creativity. Similarly, Zayas and Rofi'ah (2022) also highlighted that digital literacy skills is very important and increase the creativity of teachers by fostering innovation and productivity. Their results align with the current study by emphasizing that integration of technology strengthens critical thinking and motivation in educational settings.

Conclusions, Implications, and Limitations

The findings of the study underscores the important role of digital literacy skills in enhancing the work performance and creativity of college librarians. The librarians having high digital literacy skills are very skillful in their daily routine tasks. Moreover, the study also highlights the growing importance of digital literacy skills in college libraries. The findings also show a strong and positive relationship between creativity, digital literacy skills and work performance. Moreover, it highlights the important role of their skills in innovation and professionals' efficiency.

The findings of the simple linear regression test is also supported and indicating that digital literacy skills have predicts the creativity and work performance. The current research study concludes that digital literacy skills increasing will cause to enhance the work performance as well as their efficiency and creativity. Most of the targeted training programs which focus on advanced digital tools, cyber security, and digital ethics which further strengthen their competencies. These results highlights that digital literacy skills is very necessary for academic professionals as well as ensuring their continued growth and effectiveness in the current digital environment.

The results had suggests some theoretical and practical implications. *Theoretically*, the current study gives important insights into the relationship between the work performance, digital literacy skills and creativity. The results support the main idea that higher digital literacy

skills contribute to better work performance and creativity, reinforcing the importance of digital literacy in modern education. Furthermore, some *practical implications* for education, emphasizing the strong correlation among the work performance, digital literacy skills, and creativity. College should be focused on enhancing librarians' digital literacy skills through various trainings programs such as seminars, workshops, digital sources evaluation, advanced searching technique and time management courses. Integrating these elements into the curriculum can better equip librarians for better work performance in increasingly digital world.

With regard to limitations, the sample consisted only college librarians of Punjab, making it difficult to extend the results to college librarians from different provinces. Furthermore, the current study used a simple random sampling technique, which may be not fully represent the whole population, preventive the findings generalizability. Moreover, the study used a quantitative survey approach, which may not have fully recorded the participant's emotions and experiences. A qualitative or mixed method approach could provide deeper insights.

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