

Received : 05 January 2024, Accepted: 07 April 2024

DOI: <https://doi.org/10.33282/rr.vx9i2.62>

PERSONALITY TRAIT OF LIBRARIANS AS PREDICTOR OF DIGITAL LITERACY SKILLS

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Abstract

Purpose -This study examines the librarians whose personality traits possess more digital literacy skills and make an effective contribution to the provision of digital library services to users.

Design/methodology/approach – The questionnaire comprised of two constructs, (a) Five personality traits (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness), and (b) digital literacy skills were used to collect the data. After checking all the assumptions, a multiple regression test was applied to predict the digital literacy skills of librarians from different variables of personality traits.

Findings – Results of the current study show that librarians having personality traits of extraversion and conscientiousness were more digitally literate as compared with others. Further, the beta coefficient value of the extraversion personality trait shows a relatively high prediction level towards digital literacy skills. This study concludes that the personality traits of librarians are important factors in the provision of digital library services to users.

Research limitations – In this study, it is very difficult for researchers to find out which personality trait of the librarians is different from other traits in terms of digital literacy skills.

Practical implications -The practical implication of this study is for library professionals, library associations, university libraries, and librarians. Moreover, this study is also helpful for professionals to acquire the necessary ICT skills to manage university libraries in the digital environment.

Originality/value – Previous studies show the impact of personality traits on work performance, information seeking behavior, social networking sites (SNS), internet addiction, job satisfaction, and knowledge sharing behavior. Moreover, the researchers also reviewed some studies regarding different information and communication technologies and digital competencies possessed by librarians. This study mainly identifies the personality traits of librarians as a predictor of digital literacy skills which are necessary for managing the libraries.

Keywords -Personality traits, BFI Scale, Digital literacy skills, predictor, ICT skills.

Paper type - Research paper

1 Introduction

Due to the initiation of computers and the internet, the behavior of information professionals has been changed entirely, to use online resources to retrieve their required information (Noh, 2017). The internet is a worldwide network that connects millions of computers and created a great revolution in all aspects of our life. In fact, without the internet life is very difficult. Through the Internet, people can meet and interact with each other (Amichai-Hamburger and Vinitzky, 2010, Heimel et al., 2021). Approximately there are three billion current users of the Internet worldwide and this increasing use of the Internet is due to the provision of abundant facilities. Moreover, the Internet provides an easy way for researchers to access, disseminate, and create knowledge & information that was not possible (X et al., 2021). The early use of internet tools has improved the quality of digital services (e.g. blogs, instant messaging, web 2.0, emails, chat rooms, and file sharing) and these services have become an essential part of human life (Lusch and Nambisan, 2015, Sorathia and Servidio, 2012).

In every sphere of life, literacy is very important for educational, economic, social, and cultural growth. In the current digital environment, a person must be digitally literate to enjoy a healthy life and also to participate in the progress of his/her country (Bandarsyah, 2021). A digitally literate person is a person who can search and understand desired information, express and share opinions or thoughts freely, and have a better understanding of those of others (Campanozzi et al., 2023, Kwon, 2011). Digital literacy skills include the ability to find relevant information and evaluate its credibility, communicate successfully with invisible others (mostly through written text), and create original content to express oneself in a manner consistent with one's personal and/or professional goals (Iordache et al., 2017). According to Bawden (2008), digital literacy is defined as the set of attitudes, understanding, and skills to handle and communicate information and knowledge effectively, in a variety of media and formats. In parallel, the production of huge information can create challenging situations, and to handle this situation individuals need an up-and-coming set of digital competencies (Eshet, 2012).

Digital information tools that are used to manage libraries and information centers demand technical competencies to navigate the library user successfully. The current digital environment requires new skills and competencies to cope with the challenges of modern librarianship (Khan and Bhatti, 2017). Singh and Pinki (2009) and Hamad et al. (2021) disclosed that Librarians today are faced with the increasing demand for digital skills and competencies to effectively meet the information needs of library users. The modern information environment demands digital skills to become pertinent to this new environment (Chinien, 2011). Raju (2014) found that library professionals must possess computer skills, knowledge of digitization, digital information storage, and metadata creation which are very useful and necessary in modern information working environments. Yakeel (2007) also explained that library professionals with adequate digital literacy skills will work successfully in modern digital information systems. So, library professionals need to become more digitally literate to develop the confidence to make intelligent decisions to fulfill the needs of library users (Breen et al., 2023). Librarians require computer skills to accomplish tasks such as database management, organizing, editing & disseminating text, word processor, and spreadsheet services respectively and social networking

sites appear indifferent contexts and are included in libraries as well (Bradley-Ridout and Epworth, 2020, Zotoo et al., 2023).

Library professionals need to learn digital literacy skills in this digital era to improve their job performance and their careers. Library professionals must possess adequate knowledge about current ICT competencies and skills like content management, organization of information on the internet, e-resources management, library automation as well as developing and maintaining institutional repositories/digital libraries (Okeji et al., 2020). Digital literate library professionals will be more capable to organize social networking, blogging, digital reference services, instant messaging, and other digital activities (Emiri, 2017).

Personality is the comparative enduring external, internal, and distinctive aspect of an individual's quality that shows his/her attitude in different situations (Solomon and Jackson, 2014). Sometimes, the term personality is used in a broader sense in which we measure the distinguishing abilities and motivational, emotional, attitudinal, and interpersonal characteristics of a person. In personality, traits mean the study of human behavior and different features in a person's character. These traits vary from time to time and person to person (e.g. some people are very talkative while some are shy). Personality is an instrument that is used to explain human behavior. Everybody in the world is different from others in terms of behavior, character, and preferences (Pei-Lee et al., 2017, Peris et al., 2020). Library professionals are very essential for libraries like other resources. The attitudes and personalities of librarians have a huge impact on their jobs as well as the performance of their libraries.

In this study, the impact of personality traits on digital literacy skills will be studied from a different perspective of the five traits model of personality which was conceptualized by Costa and McCrae (1992 & 2008). Goldberg (1981) also stated that the personality of every individual has five basic categories. These are openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness.

2 Review of the Literature

Previous literature shows the impact of personality traits on work performance, behavior of information seeking, social networking sites (SNS), internet addiction, job satisfaction, and knowledge sharing behavior. Moreover, the researcher also reviewed some studies regarding different information and communication technologies and digital competencies possessed by librarians.

2.1 *Impact of personality traits on the behavior of information seeking*

Heinström (2005) and Leiß and Rausch (2023) examined the effects of personality traits on the information-seeking behavior of university students and found that students having low conscientiousness and openness to experience were associated with fast surfing, while broad scanning showed the contributors' openness to experience and extraversion. In another study, Cepulic (2023) evaluated how the information-seeking process was affected by personality traits and established that neuroticism, conscientiousness, and agreeableness directly affect the process of information seeking. Furthermore, he observed a direct relationship between extraversion and openness to experience with the hidden information seeking. Moreover, Ahmed et al. (2019a) checked the impact of personality traits on the LIS students' behavior of information seeking. They found that students having personality traits of conscientiousness were more

suitable in terms of information seeking as compared with others. However, a significant difference among all the traits of personality was also observed by researchers.

2.2 *Impact of personality traits on learning styles, strategies, and performance*

Blickle (1996) and Leonte (2022) analyzed the relationship between learning strategies, performance, and personality traits of students. They found the relationship of conscientiousness with elaboration and learning discipline. Moreover, they stated in his study that openness to experience and conscientiousness have an important effect on strategies of learning. In another study, Komarraju et al. (2011) examined the impact of personality traits of students on their academic achievements and learning styles in Carbondale, United States. The results revealed that learning styles were positively associated with agreeableness and conscientiousness while academic achievements were negatively linked with neuroticism. Furthermore, Keller and Karau (2013) examined the relationship between personality traits with online learning experience (anxiety/frustration, career value, engagement, and preference for overall evaluation and online courses). They found that the online learning experience was extensively correlated with conscientiousness while agreeableness was interlinked positively with the online courses.

2.3 *Impact of personality traits on knowledge sharing behavior*

Stajkovic et al. (2018) examined the direct or indirect impact of personality traits on self-efficacy. They found that conscientiousness was predictive of self-efficacy, while extraversion and openness to experience traits were fleeting. In another study, Pei-Lee et al. (2017) examined the effect of personality traits on online knowledge sharing behavior among university students in Malaysia. Researchers revealed in their study that the students having more developed levels of neuroticism and extraversion were more intent to share online knowledge with their colleagues while students with strong openness to experience were less prospective to share knowledge with others.

2.4 *Impact of personality traits on SNS usage*

Glass et al. (2013) examined that a student's personality is the best predictor of usage of Facebook and academic performance among USA college students. Researchers found that only extraversion students spend more time on Facebook while academic performance and Facebook usage were negatively interlinked with each other. The study by Kim et al. (2014) pointed out the differences between students who use the information of social media and their seeking behavior. Researchers found that students possess a high level of openness to experience and extraversion use blogs, user reviews, and SNS more frequently. While, students with a low level of conscientiousness, neuroticism, and agreeableness used media sharing sites, wikis, and user reviews as information sources.

Ahmed et al. (2020) examined the personality traits of students as the predictor of SNS usage, its risks, and its benefits. They found that students having personality traits of extraversion were more used to SNS which impacted negatively. Moreover, students having personality traits of conscientiousness and extraversion were more able to judge the risks, and benefits of SNS as compared to other traits. Correa et al. (2010) and Smith (2023) examined the relationship of social media use (such as instant messaging and social networking sites) with emotional stability, extraversion, and openness to experience. A positive relationship was found

by researchers between extraversion with the use of social media. Furthermore, they found that women and men, who are extraverted in their personalities, frequently used the tools of social media while only men who have more emotional stability were more regular users.

2.5 *Personality traits of librarians*

Personality traits of librarians have been a subject of interest in recent academic research. Studies have highlighted the importance of various personality traits for librarians in the digital era. For instance, experts emphasized the necessity for modern librarians to embrace at least 16 specific traits to excel in the 21st-century digital environment (Million, 2020). Klein and Lenart (2020) discussed how librarians' personality traits can provide insights into the core competencies essential for their roles. Furthermore, the study of Shahzad et al. (2023) explored a positive correlation between personal traits and the professional development of librarians and highlighted the importance of understanding how individual characteristics can contribute to career growth. Moreover, Akbar et al. (2023) explored the impact of Big Five Personality Traits (agreeableness, neuroticism, extraversion, and openness) on the knowledge-sharing intentions of academic librarians and highlighted how traits like neuroticism, agreeableness, extraversion, and introversion can influence professional behaviors.

Personality traits are significant factors in the effectiveness and success of university librarians. The study by Ahmed and Rasheed (2020) explored the correlation between personality traits and digital literacy skills among university librarians and found a relationship between personality traits and digital literacy skills among librarians. Moreover, Williamson et al. (2008) investigated the personality traits of individuals in various specialties of librarianship, aiming to identify potential differences in personality traits based on the Big Five model among various types of academic librarians. He exposed that understanding these variations in personality traits across different types of librarians can offer insights into customizing training and professional development programs to improve their effectiveness. Additionally, Andreassen et al. (2013) explored the relationships between behavioral addictions and the five-factor model of personality, emphasizing the significance of this model in understanding individual differences in traits like neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness. These traits can influence how university librarians approach their work, engage with patrons, and adapt to technological advancements.

2.6 *Digital literacy skills of librarians*

Digital literacy skills among librarians have become a crucial aspect of their professional development in the digital age. Research has shown that librarians in Nigerian libraries have been highlighted as needing digital literacy skills for tasks such as using software applications, managing personal information, and applying digital technologies, emphasizing the importance of continuous training and retraining (Sambo et al., 2022). Furthermore, the role of librarians in promoting digital literacy has been recognized, with suggestions for professional development programs tailored to their needs (Spurava et al., 2021). Librarians' digital literacy skills are not only essential for their job performance but also impact teaching, learning, and research positively (Khan, 2020).

Digital literacy skills among university librarians have been a subject of interest in recent research. Librarians are increasingly required to adapt to rapid technological changes and complement their skills with digital initiatives to deliver services effectively, such as in research

data management and open access(Okuonghae and Achugbue, 2022). Studies have shown varying levels of digital literacy skills among librarians in different regions. For instance, research in African English-speaking countries revealed that most university librarians possess moderate levels of digital literacy skills, including metadata development, digitization, digital library development, and website development(A. et al., 2022). Similarly, the majority of library professionals in Africa possess a high level of digital literacy skills (Emiri, 2017, Hamad et al., 2021). Conversely, a study in Pakistan indicated a low level of digital information literacy skills among university librarians(Khan, 2020).

On the other hand, gender differences have been noted to impact the development of digital skills in public libraries, contrasting findings on digital information literacy among university librarians where gender was found to have no significant impact(Borbely and Némethi-Takács, 2023). Furthermore, the impact of ICT competencies on job performance in Nigerian university libraries underscores the importance of librarians being proficient in ICT for daily routines and effective service delivery(Ubogu, 2022). However, there is a need for continuous training and retraining of librarians to enhance skills in areas such as coding, cloud computing, and database design(A. et al., 2022, Mansour, 2017).

It is concluded from the reviewed literature that individual characteristics of librarians play a crucial role in the success and their ability to provide effective services in the digital era, which are impossible without having digital literacy skills. Fewer studies have gauged the personality traits and digital literacy skills of librarians individually. However, no researcher has explored the impact of personality traits of university librarians on their digital literacy skills. Therefore, the researchers decided to explore this topic.

3 Statement of the problem

The personality of an individual is the distinctive combination of traits that impact his/her thoughts, behavior, and emotions. It drives an individual to think, behave, and feel in a different way which makes every individual unique. Over a number of years, these traits strongly impacted attitudes, perceptions, values, and personal expectations. Individuals have different life experiences while living in the same society, ethnicity, and culture, however, having the same traits. An individual's personality can be determined by some of these traits. The remaining factors are directly correlated to social and physical attributes.

The advancement in ICT structure has transformed the way of operation and functioning of libraries and information centers. Moreover, academic librarians have played a vital role in learning as well as supporting research among university teachers and students. So, in the modern information environment, digital literacy skills are necessary for library professionals to offer better library services to their users(A. et al., 2022, Khan, 2020, Mansour, 2017, Okuonghae and Achugbue, 2022, Sambo et al., 2022).

The researcher examined the previous studies and different researchers' views so; they found that personality traits were checked in different ways in the field of information management. Moreover, different researchers checked the influence of personality traits on the behavior of knowledge sharing, addiction to the internet, behavior of information seeking, and SNS, etc. (Ahmed and Rasheed, 2020, Andreassen et al., 2013, Shahzad et al., 2023) however to date, nobody has conducted a study to explore personality traits as the predictor of digital literacy skills among librarians in the whole world. So, the researchers decided to check the personality

traits of university library professionals as the predictor of digital literacy skills because librarians have different personality traits as well as different digital literacy skills. So to conduct a comprehensive study in this field is the need of the hour. This is a less addressed area that is revealed in the literature that has been selected for this study. In this study, the personality of librarians that influence digital literacy skills will be investigated.

4 Research objectives and hypotheses

In this study, the main objective was to check the impact of five factors of personality traits (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness) on digital literacy skills. Subsequently, two hypotheses were developed to accomplish the study objectives.

H1. How well do the five measures of personality traits (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness), influence digital literacy skills?

H2. Which personality trait (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness) is the best predictor of digital literacy skills?

5 Design and method

The survey method was considered suitable for the current study as Creswell and Clark (2018) suggested that the quantitative method helps to solve decision making problems. After reviewing the literature, a questionnaire having a five-point Likert scale was used to determine every factor of digital literacy skills and personality traits. The questionnaire consisted of three parts. The opening portion "A" consists of demographic information followed by section "B" in which the researchers measure the personality traits of librarians. Section "C" comprised different factors which were used to measure their attitude regarding digital literacy skills. The researchers conducted a pilot study to ensure the validity and reliability of the questionnaire. Moreover, some experts from the field of information management also tested and verified the questionnaire. Each question of the questionnaire was tested by using statistical data analysis software (SPSS). The Cronbach's alpha value was measured and reported in Table I as information retrieval literacy (n=09, $\alpha=0.92$), research support literacy (n=08, $\alpha=0.90$), library literacy (n=14, $\alpha=0.88$), computer literacy (n=08, $\alpha=0.83$) and tool literacy (n=05, $\alpha=0.76$).

Table: I Cronbach alpha values of digital literacy skills

S. No	Statements	Number of items	CA Value
1	Information Retrieval Literacy	09	0.92
2	Research Support Literacy	08	0.90
3	Library Literacy	14	0.88
4	Computer Literacy	08	0.83
5	Tool Literacy	05	0.76

5.1 Population

All the library professionals working in public and private sector university libraries in Punjab, Pakistan were the target population for data collection purposes. To get a maximum response rate, questionnaires were distributed among the library professionals through emails, post mails, personal visits, using social media tools e.g. (Facebook, and WhatsApp). Maximum participants participated in the survey voluntarily. A total number of 265 questionnaires were

gathered of which 255 were valid for further study and the remaining 10 were discarded due to not valid responses.

5.2 Measure

A multiple regression test was applied after examining all the assumptionsto measure the influence uponthe dependent variable (digital literacy skills)from the independent variables (agreeableness, neuroticism, extraversion,conscientiousness, and openness to experience).

5.3 Multicollinearity

The relationship found between all the factors of independent variables and the dependent variables was more than 0.2 (See Table II). All those independent variables were included in the study which has less than 0.7relationships among themselves.

The tolerance value of independent variables was noted between 0.546 and 0.777 which was not less than 0.10 which means that researchers had not violated the assumption of multicollinearity. Variance inflation values also supported this phenomenon, because these values were also between 1.287 and 1.830, which were less than the cut-off value of 10(See Table V).

5.4 Normality, homosedacity, independence of residuals, linearity, and outliers

Normal Probability Plots and scatter plots of the regression standardized residuals were used to check these assumptions. In a Normal P-P Plot, the data of the study was lying in a diagonal reasonable straight line from left bottom to right top. It means that there was no maindivergence from the normality. In the display of the second plot, most of the standardized residuals were concentrated in the center along with 0 point and rectangular roughly distributed.

Moreover, through inspecting the Mohalanobis distances, produced through multiple regressions,the researchers also checked the outliers. Five independent variables were used for the study and according to Tabachnick et al. (2007) if a study has five independent variables then the critical value is 20.52.In the current study, one Mohalanobis distance value was more than the critical value which has not appeared in the output; however,this value was of an extra case existing at the end of the data file (Mah-1). According to Pallant (2020), if the value of one case is higher than the critical value it may be ignored and does not matter. Moreover, in the table of Residuals Statistics, Cooks Distances' maximum value was .0836 which indicated that there was no problem to precede the test.

Table II. Relationship between DLS (dependent variable) and five dimensions of personality traits (independent variables) (n = 255).

Variables	Digital Literacy	Opn.	Con.	Ext.	Agr.	Net	P
Digital literacy (D.L)	1						
Openness (Opn)	.362**	1					.000
Conscientiousness (Con.)	.433**	.333**	1				.000
Extraversion (Ext)	.561**	.370**	.311**	1			.000
Agreeableness (Agr)	.336**	.399**	.589**	.196**	1		.000
Neuroticism (Net)	-.258**	-.090**	-.512**	-.294**	-.441**	1	.000

6 Results

The descriptive statistics show that openness to experience was found most core personality trait among library professionals. The second dominant trait was followed by agreeableness. Only a few respondents belong to the personality traits of neuroticism and extraversion respectively. The lowest trait found among the selected population was neuroticism. Moreover, the respondents were asked about their proficiency in using library automation softwares, digital library softwares, and library standards. The majority of the librarians responded that their level to use the Online Public Access Catalogue (OPAC) was relatively very high; it was followed by acquiring library material online. As far as computer literacy was concerned, library professionals were more efficient to use MS Office (MS Word, Excel, and PowerPoint). Moreover, the proficiency of library professionals to install and run the operating system (Windows) was at a moderate level, while, their ability to use Adobe Photoshop and In-Page Urdu Software was very poor. Further, researchers examined the level of tool literacy. The most dominant literacy was the ability to use the printers in a library followed by scanners and barcode readers. Moreover, the most important literacy was the ability to retrieve information from search engines followed by using different URLs, online full-text databases, and HEC digital library in terms of information retrieval literacy. As far as the research support literacy was concerned, the majority of the library professionals had a very high ability to use the online survey tools (Google Forms). Their ability to use the anti-plagiarism software (Turnitin) was at a moderate level and their ability to use qualitative data analyzing software (NVivo) was very poor.

A significant relationship between the independent variables (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness) and the dependent variable digital literacy skills was found (see Table II). To predict the digital literacy skills from different variables of personality traits (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness), a multiple regression test was run after checking all the assumptions.

In the table of a summary model, the value of R square shows how much the dependent variable (Digital literacy skills) was explained by the independent variable (agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion). The value of R square (.405) demonstrates that our model (five factors of independent variables) explains 40.5 % of the variance in digital literacy skills (dependent variable) (See Table III). Table IV shows the analysis of variance that these independent variables (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness) predict the dependent variable (Digital literacy skills) significantly: $F(5, 249) = 33.833$, $p < 0.000$, $R = 0.636$.

Table III. Evaluation of the model

R	R Sqr	Adj R Sqr	Std. Error of the Est
.636a	.405	.393	15.18663

Table IV. Summary of statistical significance prediction

Model	Sum of Squares	Df	Mean Square	F	P
Regression	39015.672	5	7803.134	33.833	.000
Residual	57427.764	249	230.634		
Total	96443.435	254			

Table V. Summary of regression results

	Unstandardized Coefficients		Standardized Coefficients	T	P	Correlations			Co linearity statistics	
	B	Std. Error				B	Zero-order	Partial	Part	Tolerance
Constant	24.696	15.091		1.636	.103					
Openness experience	.403	.282	.083	1.427	.155	.362	.090	.070	.711	1.706
Conscientiousness	.928	.269	.228	3.452	.001	.433	.214	.169	.546	1.830
Extraversion	2.511	.308	.453	8.159	.000	.561	.459	.399	.777	1.287
Agreeableness	.441	.292	.099	1.513	.132	.336	.095	.074	.564	1.772
Neuroticism	.200	.281	.043	.711	.478	-.258	.045	.035	.653	1.531

6.1 Evaluating each of the independent variables

To compare the contribution of each independent variable, researchers use the standardized coefficients, because in it different variables were converted to the same scale so that they can be compared easily. Therefore, researchers use the values of beta to know about the contribution of each factor of the independent variable (Personality traits) towards the dependent variable (digital literacy skills). Table V shows the beta values of all the variables. In this case, the table demonstrates that the extraversion variable has the largest beta value (.453) amongst all others which means that extraversion makes the strongest distinctive contribution to explaining digital literacy skills, while the variance of all other variables (included in the model) was controlled for. The beta values of conscientiousness (.228) and agreeableness (.099) were lower than extraversion which means that their contribution was very low. The contribution of Openness to experience and neuroticism (.083 and .043) respectively were also very small in predicting digital literacy skills.

Moreover, the result shows that two independent variables; extraversion and conscientiousness made a uniquely significant contribution towards digital literacy skills, while, the other three independent variables did not do so. The results of the study help to answer the two hypotheses which were developed at the beginning of the study. In the study model, personality traits (agreeableness, neuroticism, conscientiousness, extraversion, and openness to experience) explain 40.5% of the variance in digital literacy skills. In which extraversion ($\beta=.453$) makes the strongest unique contribution. However, conscientiousness ($\beta=.228$) and agreeableness ($\beta=.099$) also make a significant contribution, however, Openness to experience and neuroticism ($\beta=.083$ and $\beta=.043$) make a very lesser contribution to the hypotheses, posed for the study.

7 Discussion

To compare the independent variables of personality traits, researchers use the regression model which shows that personality traits explain 40.5% of the variance to enhance digital literacy skills. This means that personality traits have a slightly high level of explanatory power which enhances digital literacy skills. Moreover, results also show that library professionals having personality traits of extraversion and conscientiousness are more digitally literate than others. The results of this study are consistent with the study of Ahmed et al. (2019b) who also found that the students having extraversion personality traits were more concerned in terms of information needs. The underlying features of personality traits were also elaborated by Zuniga et al. (2017) and Wang (2017). They also revealed that students having personality traits of extraversion and conscientiousness were positively connected with the usage frequency of social media. Similarly, Heinström (2003) expressed in his study that people having personality traits of conscientiousness traits are resolute, self-controlled, and tend to be hard work. So, the results of the study strengthen the people's conscientiousness trait. Moreover, people having personality traits of extraversion explained the maximum variance in computer literacy while neuroticism explained the least variance against computer literacy. In his study, Costa (1992) explained that people having personality traits of extraversion are more active, social, and talkative. According to this judgment results of the study strengthen the people having the trait of extraversion. Zhou et al. (2017) and Li et al. (2016) also found in their studies that the people with extraversion personality traits were more internet-addicted and they were more interested to share knowledge with others through the internet. Tool literacy is also necessary for library professionals because it enhances their level to do good work, such as the provision of good library services. The findings of the study are consistent with the study of Heinström (2003) & Onwuegbuzie and Jiao (1998), who expressed that people having personality traits of extraversion were more information seekers than all other personality traits. As far as information retrieval literacy is concerned, Müller et al. (2016) and Kim et al. (2014) claimed that people with extraversion traits frequently used Blogs, SNS, and Wikis for retrieval of information. Moreover, Ahmed and Sheikh (2020) indicated in their study that the involvement of information retrieval skills in library services development was very high compared with other ICT skills. Moreover, Al-Samarraie et al. (2017) also expressed in their study that researchers having personality traits of extraversion have the fastest ability of information seeking like other personality traits. Moreover, Mansour (2017) and Pratap and Singh (2018) indicated that librarians, more frequently, use meta-search engines, URLs, and search engines, to retrieve information and to provide improved library services to their users. Lastly, research support literacy plays a significant role in terms of the provision of better services to researchers. The result of the study shows that library professionals having personality traits of extraversion, provide better research support services to their users. This study is consistent with the study of Hakimi et al. (2011) who found that the academic achievement of researchers was expressively interlinked with the extraversion trait. Moreover, Ali and Ahmed (2021) also concluded in their study that information literacy skills are the basic need for the improvement of research support services among library science professionals.

7.1 Personality traits and digital literacy skills

A significant contribution of personality traits towards digital literacy skills has been shown in the regression model. The researchers examine the beta value of the standardized coefficient which indicates that the contribution of extraversion traits is more as compared to

conscientiousness and agreeableness personality traits. While the contribution of neuroticism and openness to experience traits towards digital literacy skills is very low. Moreover, librarians with extraversion personality traits are generally known as sociable, assertive, active, and expressing positive emotions. Theoretically, personality traits consist of five components (openness to experience, neuroticism, extraversion, conscientiousness, and agreeableness). All the five components of personality traits have a relationship with each other that's why they are very important for library professionals to enhance their digital literacy skills. The level of digital literacy skills of library professionals has a positive impact on their personalities which facilitates them to provide better library services and to perform their duties efficiently. Furthermore, library professionals need information and training to develop their careers and update skills. As per the demand of the information centers and different institutions, extraversion characteristics make the persons more dominant.

8 Conclusions and recommendations

The study result shows a significant correlation is found between personality traits and digital literacy skills and both the hypotheses are also supported by the findings. After reviewing the previous literature, researchers found that most existing and previous studies give attention to cover the influence of personality traits on knowledge sharing behavior, addiction to the internet, and different ICT skills. However, the main focus of the current study is to examine the influence of personality traits on digital literacy skills. In the current study, most of the respondents belong to openness to experience personality traits. After that, researchers examine, how library professionals having different traits of personality, behave with different aspects of digital literacy skills. Researchers conclude that librarians having extraversion personality traits make the strongest unique contribution to explaining digital literacy skills as compared to other types of personality traits. Moreover, library professionals with conscientiousness traits make the second unique contribution to explain digital literacy skills. However, librarians having personality traits of conscientiousness are more determined, competent, and target-oriented and can be easily motivated to achieve their goals. While, the value of the agreeableness trait is lower than conscientiousness and extraversion, which means that it makes less contribution to explaining digital literacy skills than extraversion and conscientiousness. Furthermore, neuroticism and openness to experience have very low contributions to predicting digital literacy skills.

In light of the findings of the current study, researchers recommend that library professionals having extraversion personality traits are more suitable for the library profession. Librarians of this trait are more appropriate and efficient to do work in this current digital environment. Moreover, the neuroticism trait is the least concerned with digital literacy skills when compared to all other personality traits. The library professionals of this personality trait are not active and usually not motivated to achieve new goals. So the library professionals having the trait of neuroticism are not suitable for the libraries in the digital environment. Furthermore, librarians must prevail over their weaknesses in digital literacy skills and also guide the university administration to enhance their literacy level through proper training. Moreover, the identification of personality traits may help the induction of suitable university library professionals for libraries in Pakistan as well as in the world. In the future, studies may be conducted using various models of personality traits in order to gauge the impact of these on digital literacy skills and information literacy skills of students, teachers, and various types of librarians.

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